EVALUATION AND RATING

KEY RESEARCH AREAS

AND

TYPES OF RESEARCH OUTPUTS

Sept 2021

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Introduction

Applicants require clarity about the research areas which individual Specialist Committees cover so that they can select the best panel to consider their application. They also need information about the profile of research outputs required in order to decide whether they should apply for rating. This document provides the following details for each Specialist Committee:

- Key research areas covered
- Research outputs taken into account in the rating process and their relative importance
- Boundaries and overlaps between Specialist Committees and committees, allowing applicants whose field of research straddle more than one committee to ascertain where their application is best handled.

Specialist Committees for 2021/22

The following Specialist Committees will consider applications for evaluation and rating during 2020:

Anthropology, Development Studies, Geography, Sociology and Social Work
Basic and Applied Microbiology
Biochemistry, Molecular and Cell Biology
Chemistry
Communication, Media Studies, Library and Information Sciences
Earth Sciences
Economics, Management, Administration and Accounting
Education
Engineering (2 sub-committees)
Health Sciences: Public Health / Clinical / Basic Sciences
Historical Studies
Information Technology
Law
Literary Studies, Language and Linguistics
Mathematical Sciences
Performing and Creative Arts, and Design
Physics
Plant Sciences
Political Studies and Philosophy
Psychology
Religious Studies and Theology
Veterinary and Animal Production Sciences
Zoological Sciences

Notes

The following notes are made to clarify some issues and to avoid repetition in each section of this document.

1. Because of the potential overlap in subject matter considered by the various Specialist Committees, it is possible that an applicant may have difficulty in deciding to which Committee an application should be submitted. If this is the case, an applicant can nominate up to three (in priority order) Specialist Committees; the conveners of Specialist Committees will confer and select the most appropriate Committee. If they decide on a committee other than these three, the applicant and institution will be contacted for permission.

2. For all Specialist Committees (with the possible exception of Performing and Creative Arts, and Design where other sorts of critique and assessment might be more relevant), for a product to be considered a significant research output it must ideally fulfil the following criteria:
   (i) It must be peer-reviewed
   (ii) It must be in the public domain and readily accessible.

3. Invitations to present keynote and plenary papers at international conferences, although not primary outputs, do attest to the peer-recognition of an applicant.

4. Products such as unpublished theses and conference abstracts/presentations do not fulfil the criteria under Note 2 above. It is the publications that emanate from theses and conference presentations that are the research outputs, not the theses or presentations themselves.

5. Undergraduate textbooks or other curriculum material are not considered as research outputs. If considerable research has gone in to the development of curricula, this falls within the scope of the Specialist Committee for Education.

6. Developing public awareness and public education, while a laudable activity, is not considered to be a research output as such. However, as with undergraduate curriculum development, research into the best, or most appropriate or efficient approaches to public education would fall under the Education Specialist Committee

7. Please ensure that the publication date of a research output corresponds with its copyright date. In electronic pre-publication availability this date is indicated in the Digital Object Identifier (DOI).

8. While publication in high impact international journals is to be encouraged, it is also recognised that in certain instances, more specialist or local journals of lower impact factor may be more appropriate.

9. Similarly, the number of citations a paper has received is not an infallible measure of research quality. Different disciplines have different cultures with respect to citations, the size of a research field can influence citation numbers, and there is generally a lag between publication of a paper and it beginning to accumulate citations (and this lag can be a significant portion of an evaluation cycle).

10. It is admissible to list technical reports as “additional research outputs” provided that such reports are based on contract research. Technical reports based on routine consultation are not admissible. Ideally, technical reports included in the submission should be in the public domain. Where this is not possible due to confidentiality considerations, the applicant may consider including in his/her list of possible reviewers, individuals who can comment on the significance of the research output contained in such reports.

Anthropology, Development Studies, Geography, Sociology and Social Work
[updated Sept 2019]]

Key research areas

This Specialist Committee includes the following key areas

- Anthropology and related subfields of biological anthropology, social and cultural anthropology (including material culture studies, migration studies, anthropology of development, visual anthropology, performance studies, area studies and medical anthropology);

- Research conducted within the discipline of human geography (including political ecology, land and agrarian studies, environmental studies economic geography, development geography, social geography, cultural geography, historical geography, urban geography and planning theory;

- Development studies: Development generally refers to a process of social change through which standards of living are raised, and encompasses technological, economic, political, social, cultural, legal, institutional and environmental aspects. It also involves theoretical and empirical research to understand development as a process and often has a strong applied dimension, focussing on policies, programmes and institutional arrangements intended to promote development. Fields of development studies include theories of development, development economics, industrialisation and development, rural and agricultural development, regional development, development management, governance and development, community development, gender and development, environment and sustainable development, health and development, population and development and social policy and development.

- The fields of sociology, i.e. quantitative and qualitative, empirical and theoretical study of the social structures, cultures and everyday practices of advanced and developing societies, covering styles and material standards of living, opinions, values and institutions, and includes social theory and social research methodology. Fields of enquiry that could appear in submissions include sociological research on culture, economics and politics; class, ethnicity, gender, sexuality, and age; religion, education, health, and welfare institutions; the body; urban and rural areas; pedagogy; development and globalisation; demography; criminology; socio-legal studies; social studies of science and technology, work and organisation; social movements; and the philosophy of social science;

- Social work, its theory and practice and the context in which it occurs, including: methods of social work research; ethics and values; concepts of social justice; service user perspectives; issues of gender, ethnicity, visible minorities, sexuality, disability and age; social work education; higher education pedagogy of social work; socio-legal issues; probation and criminal justice; organisational management and administration; management and supervision of social workers; service delivery; social welfare policy and related legislation; personal social services; child welfare and child protection; community care; day care; residential care; elders; gerontology and studies of ageing; families and substitute family care; youth work; community work; group work; counselling; voluntary work; poverty and anti-poverty work; interventions in the fields of substance misuse; health, including mental health, disabilities, including learning difficulties. Issues relating to social development theory, practice and policy.

- Archaeology: research in archaeology can appear within and across the broad categories of natural and social science. The Specialist Committee will consider work in social archaeology including heritage conservation and management, metals in society, ethnohistory, resilient landscapes, coping with environments, living traditions, climate change and production, precolonial social organisation, the antiquity of hunting, group identities, the politics of human remains, historical trade, architectural heritage, social theory and archaeology, industrial past, and interpretations of power.

Boundaries and overlaps

- Given its multidisciplinary character, development studies has many overlaps with a range of other disciplines, and possible overlaps could occur with the Specialist Committees dealing with Economics, Management, Administration and Accounting, with Political Sciences and Philosophy, with Health Sciences, and even with Engineering.

- There may be overlaps between sociology and anthropology on the one hand, and Economics, Management, Administration and Accounting; Health Sciences; Historical Studies; Psychology (social psychology); Political Sciences, Policy Studies and Philosophy; and Communication, Media Studies, Library and Information Sciences, on the other.

- Social work and social policy and administration are closely related subjects with a substantial degree of overlap but they differ in their emphasis; social policy and administration is distinguished by its focus on the theory, analysis and evaluation of social policies and their implementation, and social work by its focus on the theory and practice of social work; both subjects include attention to understanding of social context.

Types of research outputs

Research outputs should include the following:
- Peer-reviewed primary research articles in appropriate journals
- Academic publications of original research in **peer-reviewed journals (printed or electronic),** including invited articles and review articles
- Books of scholarship: these must be research-based and independently refereed, and aimed at the research community, as opposed to teaching material
- Chapters in scholarly books (again, aimed at the research community)
- Refereed full-length papers in conference proceedings and edited scholarly books will be assessed on their merits

In addition to the above published outputs, other evidence of the standing of a researcher will be considered; these include
- Book reviews
- Editorship of journals
- Officials positions in professional associations
- Visiting professorships
- Evidence that academic research has impact on policy (i.e. application of theory to practice and policy)

Basic and Applied Microbiology

Key research areas

The Specialist Committee considers applications from researchers in the following fields of basic and applied microbiology: bacteriology, bioinformatics, biotechnology, clinical microbiology, disease control, environmental microbiology, epidemiology, fermentation science, microbial genomics, host-plant interactions, industrial microbiology, metagenomics, microbial ecology, microbial phylogenetics molecular biology, mycology (including yeasts), parasitology, physiology, plant pathology, population dynamics, systematics, systems microbiology, taxonomy and virology.

Boundaries and overlaps

The boundaries of this Specialist Committee overlap significantly with the Specialist Committees /sub-Committees for Animal and Veterinary Sciences; Biochemistry, Molecular and Cell Biology; Chemistry; Education; Engineering; Health Sciences and Plant Sciences.

Types of research outputs

An important criterion in assessing outputs is whether they are peer-reviewed; although publication in 'high impact' journals is noted, sometimes publication in a specialist journal with a lower impact factor may be more suitable; the following classification gives an indication of the weight different outputs carry:

<u>Primary outputs</u>
- Publications of original research in peer-reviewed journals
- Review articles (subjected to peer review) in scientific journals
- Chapters in books aimed at the research community, and that have been subjected to peer-review
- Refereed conference proceedings (excluding abstracts)
- Scientific monographs

<u>Secondary outputs</u>
- Keynote or plenary lectures at conferences
- Patents
- Public biological databases

<u>Tertiary outputs</u>
- Other full-length conference proceedings (excluding abstracts).

<u>Other</u>
- Technical reports (these may be classified as primary, secondary or tertiary, depending on their nature and accessibility)

Biochemistry, Molecular and Cell Biology

Key research areas

Modern biochemistry, molecular and cell biology constitute a wide range of subjects, including the study of the structures and processes of life at the molecular and cellular level, whether it is in micro-organisms, animals or plants. Areas of research cover studies on individual biomolecules through to the structure and function of the cell, to the interaction of the cell with its environment, which can include other cells (cell-cell interactions). There are many ways in which to classify the subjects that fall under the broad discipline of biochemistry, molecular and cell biology. Since key research areas are rapidly changing and evolving the following research areas should be regarded as illustrative, rather than exclusive:

- The cell as biological unit - includes nucleic acids, regulation of gene transcription and translation, enzymes, metabolism and bioenergetics, intracellular signalling, protein transport and targeting including protein trafficking pathways, the cell cycle, cell growth, senescence and death;

- The cell in its environment - includes cell-cell interactions and cell-matrix interactions; cell motility; cell surface receptors and signal transduction; ion channels and transporters;

- Specialised functions of cells - includes cell differentiation; molecular immunology; cellular and molecular neuroscience; specialised microbial and plant cell function;

- Integrative and systems biology - includes genomics, transcriptomics, proteomics and metabolomics, functional genomics (integration of genomic information with the aim of identifying the biological function of proteins and their role in cell physiology), molecular evolution, bioinformatics and cellular dynamics, development of bioinformatics and simulation tools and supporting computing technology, computational systems biology, biotechnology.

Boundaries and overlaps

Modern biology is divided not so much along the traditional vertical lines of organismal groups but rather into hierarchical levels: molecules, cells, uni- and multi-cellular organisms, and populations of organisms. Biochemistry, molecular and cellular biology are usually at the more basic level, but since structure, function and behaviour are inseparable the boundaries are not clean and often overlap into the higher levels of biology; even population behaviour often has a biochemical basis (e.g. pheromone communication); another example is the interface of molecular and evolutionary biology, where evolutionary processes, the functional organisation of the cell, comparative genomics and population behaviour come together.

There is no Specialist Committee for biotechnology, a field in which there is a wide overlap between the fields of biochemistry, microbiology, plant sciences, and chemical or bio-engineering; in cases of uncertainty applicants have the opportunity of nominating an alternate Specialist Committee in addition to the Committee for Biochemistry, Molecular and Cell Biology.

Since the NRF Specialist Committees are constituted more along the traditional demarcation between disciplines there are varying degrees of overlap between the areas covered by the Specialist Committee for Biochemistry, Molecular and Cell Biology and these Committees; the following lists the most important of these overlaps (with examples of the overlapping area in brackets):

- Animal and Veterinary Sciences (e.g. biochemical aspects of food and nutrition, physiology, veterinary medicine, animal virology, immunology)
- Chemistry (e.g. analytical biochemistry and spectroscopy, organic chemistry of biomolecules)
- Health Sciences (e.g. human and medical biochemistry and physiology, gene therapy, genetic basis of disease, metabolic diseases, molecular pharmacology, neurobiochemistry)
- Engineering (e.g. bio-engineering, biotechnology)
- Mathematical Sciences (e.g. biomathematics, mathematical biology, bioinformatics, computer simulation)
- Basic and Applied Microbiology (e.g. molecular microbiology, bacterial genetics, molecular mechanisms of plant resistance, plant virology, biotechnology)
- Physics (e.g. biophysics)
- Plant Sciences (e.g. plant biochemistry and cell biology, molecular phylogeny)

In practice, applications will have to be assessed individually in terms of which Specialist Committees are most appropriate to handle the application; as a rule of thumb, however, applications that are primarily considered by the Specialist Committee for Biochemistry, Molecular and Cell Biology should be based on research that makes a contribution to our understanding of life on a molecular and cellular level or applies such knowledge; applications where research outputs are based on biochemical and molecular biological techniques but are posing questions at a higher hierarchical level may be more suitable for consideration by another Specialist Committee.

Types of research outputs

The following classification of research outputs gives an indication of the weight each carries:

Primary outputs
- Publications of original research in peer-reviewed journals and peer reviewed electronic publications
- Reviews in recognised scientific journals
- Peer-reviewed conference proceedings (excluding abstracts)
- Scientific monographs
- Computational research tools
- Public biological databases

Secondary outputs
- Peer-reviewed chapters in books
- Keynote or plenary lectures at conferences
- Patents
- Biological database submissions

Tertiary outputs
- Other conference proceedings (including abstracts)

Other
- Technical reports (these can be classified as primary, secondary or tertiary depending on their scope and accessibility)

Chemistry

Key research areas

The Specialist Committee covers the areas of analytical chemistry, inorganic chemistry, organic chemistry, physical chemistry, electrochemistry, chemometrics, environmental chemistry, catalysis, theoretical/ computational chemistry, solid state chemistry, organometallic chemistry, biological/medicinal chemistry, condensed matter and materials chemistry, polymers, applied chemistry, green chemistry and applied areas which lie within or between these bounds.

Boundaries and overlaps

Chemistry is known as the central science and therefore overlaps with many of the other natural and applied sciences e.g. biochemistry, physics, material science, molecular biology, metallurgy, engineering, computer science, earth sciences etc.; If applicants are unsure as to whether their field lies within the ambit of the Chemistry Specialist Committee, they can nominate an alternate Committee. Research into chemistry education would fall under the Specialist Committee for Education.

Types of research outputs

Primary outputs
- Academic publications of original research in peer-reviewed printed or electronic journals, including invited articles and review articles
- Peer-reviewed conference proceedings (excluding abstracts)
- Scientific monographs, books on specialist topics and chapters in books (but only if these are directed at the research community; it does not include undergraduate text-books)
- Patents
- Innovations and novel technologies (including computational research tools)

Secondary outputs
- Plenary or keynote lectures at conferences
- Artefacts and technology disclosures
- Creation and development of intellectual infrastructure for chemistry (e.g. databases)

Tertiary outputs
- Other conference proceedings (including ordinary oral and poster presentations, abstracts, session chairs)
- Other proof of national and international peer recognition (e.g. conference and workshop organisation, membership of editorial and scientific advisory boards, refereeing of journal articles, reviewing of proposals, examining of theses and dissertations, as well as other relevant research activities)
- Industrial collaboration and networking, but only if the outputs have been peer-reviewed and are in the public domain and readily accessible.

Other (may be classified as primary, secondary or tertiary depending on scope and accessibility)
- Technical reports.

Communication, Media Studies, Library and Information Sciences

Key research areas

The field of communications research covers the following nodes and the interconnections between them:

- Communications – is the generic study of the exchange of symbols or symbolic products among individuals, communities, and societies, in terms of the skills, talents, technologies, and relations via which symbols are exchanged or transmitted as messages.

- Communication studies – is the study of the individual, community and social conversion of semiotic resources into semiotic products distributed through channels or media of communication, and the modes of reception these channels or media make possible in terms of promoting, reproducing, or restricting the formation of this reception into further semiotic communications resources. This entails the study of the formats and genres through which these products occur, e.g. cinema, broadcasting and video, advertising and public relations, print, electronic, etc. Speech communication and visual communication are components of this overall category.

  Within the study of institutions is 'organisational, management and corporate communication', while more broadly in the wider society, the areas of 'group', 'intergroup' and 'interpersonal' communication are found

- Media studies – accounts for research into the institutions which organise the technologies through which communications take place, whether by accident or design. This may include the analysis and study of relations with other institutions in society, including political economy and regulation on the one hand, through media-society relations, to the social and corporate organisation of communication on the other. The form of inquiry both entails and presupposes knowledge and skill with the production of semiotic products (e.g. film, video, television, hypermedia), as do familiarity with institutional practices like digital encryption techniques.

- Marketing communication – research investigates the field of integrated communication while focusing on the analysis of the development and implementation of strategic brand messages.

- Journalism research – studies how news and popular writing is manufactured, the organisational conditions and institutional structures under which this is done, how news and other genres come to mean, how they influence public debate and how journalists make sense of these processes.

- Visual culture/visual critique – includes the study of media products (texts) via semiotic, ethnographic, sociological, literary, post-disciplinary, technical, social and psychological, and other forms of textual analysis.

- Cultural studies – examines the sociological, economic, political and historical contexts within which people, groups, and classes come to find their places and identities in the social and political relations that arise from the ways media institutions operate, communications are developed and managed, and from the activity of which messages and texts come to be produced.

- Information and library science – deals with the collection, organisation and re-packaging, storage, archiving, retrieval, networking and dissemination of information via communications and other technologies.

- Development communication – paradigms cross and include all of the above, from social interaction to communication about, for, and by participants in, and recipients of, development projects.

- International communication – deals with process, spatial relations and structure, that is, information flows and comparative analysis of media structures, regulation and organisation. Falling within this field is the role of communication in international relations, international development, international political economy, with reference to the role of telecommunications and information and communication technology.

Boundaries and overlaps

- Communication studies primarily emerged from the disciplines of behavioural psychology, sociology, rhetoric and speech communication, and so could overlap with the Committees dealing with these disciplines. Communication studies include sub-fields such as organisational, business, marketing, group, intercultural and intergroup communication. Communication Studies could also overlap with Literary Studies, Languages and Linguistics.
- Media studies are directly linked to, and potentially overlap with, sociology, political economy, and increasingly, anthropology.
- Visual culture is primarily a literary or linguistic (semiological) derivative, drawing on theories of the text, and could overlap with Literary Studies, Languages and Linguistics.
- Cultural studies draw in history, sociology, politics, anthropology, literature and could have overlap with these fields.
- Development communication arises out of development studies
- Information science is an outgrowth of librarianship, now could overlap with computer sciences.

Types of research outputs

The following classification of research outputs ranks the weight that each carries:

Primary outputs (Peer-reviewed) (weighted according to standard of publication)

- Full articles in journals (print and electronic). Due weight will be given to journals of international standing, and national journals which have an international profile in authorship, editorial board and readership and/or
- Books and chapters in books contributing new knowledge or expanding the borders of knowledge. These contributions must have been peer-reviewed and rigorously edited
- Editorial activity which shapes a discipline, such as found in edited journal theme issues, book anthologies, comprehensive introduction to theme issues, and in complex debates in review essays. In such cases, it must be clear that the editor is not just administratively involved, but is the creative mind (with co-editors if also involved) in conceiving, planning and editing the book or journal theme issue, and if the book or journal has contributed to the expansion of knowledge

Secondary outputs

- Keynote or plenary addresses at international conferences
- Editing of peer-reviewed book series.
- Video and other productions which evidence a theoretical framework, and which are made in the pursuance of written research. Videos and other forms of electronic or performative presentation on their own will not constitute research in and of itself

Tertiary outputs

- Editorial activity on peer-reviewed journals (editing, refereeing, etc.)
- Refereed conference proceedings (excluding abstracts)
- Publication in professional (non-refereed) journals

Other

- Technical reports
- Articles and conference proceedings without a system of refereeing

Earth Sciences
[updated March 2019]

Key research areas

The Specialist Committee covers the areas of archaeology, climatology/meteorology, mineralogy, physical geography, environmental analysis/management, hydrology, geomorphology, geology, geophysics/geodesy, marine geology, natural hazard analysis, oceanography, palaeontology and soil science. . The field of archaeology is part of the Earth Sciences field in as far as it deals with palaeoanthropology, dating studies, material artefacts and the natural environment; in as far as archaeology deals with the development of ideas, culture and identity, this is considered to belong to the field of anthropology.

Boundaries and overlaps

There are a number of overlaps with other Specialist Committees notably Chemistry (e.g. environmental chemistry/isotopes, atmospheric chemistry and geochronology), Physics (e.g. atmospheric physics, acoustics and physical oceanography), Animal and Veterinary Sciences (e.g. archaeozoology, some environmental studies), Engineering (environmental engineering, engineering geology), Mathematical Sciences (e.g. climate modelling, geostatistics and image processing), Plant Sciences (e.g. palaeobotany, palynology, some environmental studies).

Types of research outputs

It is immaterial whether the research is basic or applied; it is the quality of the research, and the route through which it is placed in the public domain, that are important.

<u>Peer-reviewed research outputs</u>

- The most significant output is papers published in peer-reviewed journals; high-impact journals are weighed higher than second tier journals. The originality of the output in terms of the contribution to knowledge and understanding of the subject will be an important component in the assessment of quality
- Peer-reviewed research-based books, or chapters in books, and review articles in good quality journals carry considerable weight
- Published conference proceedings: in assessing the quality of published conference proceedings the applicant's referees will consider the status of the conference and publisher. (It must be noted that neither abstracts nor conference proceedings that are not peer-reviewed are included here.)

<u>Conference/workshop proceedings</u>

- Invited keynote talks at international scientific conferences.
- Technical and research reports to industry; the applicant should make sufficient information available on the research content of these reports and they should ideally be in the public domain so that they can be assessed by peers.
- Other forms of output and recognition are judged on their scientific merit.

Economics, Management, Administration and Accounting

Key research areas

The Specialist Committee covers the areas of agricultural economics; development economics and economic growth; economic history; environmental economics and accounting; financial economics; health, education and welfare economics; international economics and trade; institutional economics and industrial organisation; labour and demographic economics; market structure; micro, macro and monetary economics; public economics; spatial and transport economics, business management, marketing, financial management; public management and administration; strategic management; human resource management, accounting; development management; international management; management education; industrial relations; entrepreneurship; and tourism management.

Boundaries and overlaps

Key research areas relevant to this Specialist Committee may overlap with those from agricultural, ecological and forestry sciences; anthropology, geography, sociology, social work and development studies; communication and information sciences; education and historical studies; health sciences; law; mathematical and statistical sciences; political studies; philosophy and psychology; however, for researchers to be assessed by this Specialist Committee, the core of their work must relate to the development or application of theory in its own key research areas.

Types of research outputs

In general, the Specialist Committee for Economics, Management, Administration and Accounting will consider as research outputs materials that are of a scientific/scholarly nature and have been peer-reviewed. Contributions that add substantive new knowledge or insights to an existing body of knowledge will have a high weighting.

Scholarly outputs that satisfy these requirements may appear in a variety of forms, including peer-reviewed journal articles, research-based books, monographs, research reports (excluding consultancy-based reports), electronic publications (excluding web-based publishing) and computer software.

<u>The importance of peer-reviewed research outputs</u>

- The most significant outputs are published in peer-reviewed scientific journals, both those with a wide international readership, as well as those catering specifically for local conditions.
- In assessing the quality of published conference proceedings the applicant's reviewers will consider the status of the conference and publisher. (It must be noted that neither abstracts nor conference proceedings that are not peer-reviewed are included here).

<u>Other guidelines and exclusions</u>

- Consultancy-based outputs will not be considered unless they are research-based, peer-reviewed and in the public domain.
- Due to longevity concerns web-based publishing of outputs will not be considered.
- Books written for the professions and student textbooks, collections of previously published work, case studies, the editing of books or other pre-existing materials, edited versions of pre-existing books or other materials, translations, case notes, book reviews, new editions of existing outputs and similar outputs will generally not be considered.

Education
[updated Aug 2016]

Key research areas

The Specialist Committee deals with research in all areas of education, including studies in curriculum, teaching, learning and assessment, and educational policy, administration and planning in all subject areas at all levels of the formal education system (early learning, primary, secondary and tertiary). Subject areas include mathematics, natural, life and health sciences, the social sciences and languages; the study of language within education includes applied language studies and applied linguistics, second language teaching and learning, and language education and literacy studies. Education also includes research in informal situations, such as home, work and leisure. It includes study within subspecialisms within education, including the sociology, philosophy, history of education, as well as educational policy and psychology.

Boundaries and overlaps

There may be overlaps between education and a broad range of sectors in which educational research is conducted, such as accounting, business administration and management sciences; anthropology, geography, sociology; sexuality and gender studies ; social work; communication, media studies, library and information sciences; economics, agricultural economics and development studies; health sciences; historical studies; languages and linguistics; law; literary studies; performing and creative arts and design; political science, policy studies and philosophy; psychology; and religious studies and theology. Decisions about which Specialist Committee should deal with the applications in such cases could be based on whether or not the research relates to education (teaching and learning) in those sectors; in such cases it should be considered to be educational research; two specific Specialist Committees where overlap is likely to occur, and which could be exceptions to the rule, are Psychology, and Political Sciences, Policy Studies and Philosophy (in the field of policy); where expertise from these two areas is important in judging the quality of the research, education-related research might need to be considered by one of these panels.

Types of research outputs

In general, credit is given to those outputs that contribute to the advancement of knowledge and show coherency, originality, methodological strength, scholarly rigour, and relevance for other researchers, policy makers and practitioners.

All work that is eligible for submission must be publicly available, so reviewers can access it.

Eligible materials include written outputs that report on the results of research (qualitative or quantitative) or scholarly works dealing with research-methodological issues; this includes papers in peer-reviewed research journals, research in peer-reviewed published conference proceedings, and books or chapters in books that include research-related aspects.

Artefacts and products such as curriculum materials (including course materials and textbooks) will be considered only where these are based on, or developed through, research and have been published. The inclusion of such items should be justified explicitly in submissions in relation to their contributions to new knowledge production with an underlying research base. It is the quality of the research alone that will be assessed: textbooks, technical reports, curriculum materials, and descriptions of new teaching and learning approaches will not be considered as research outputs unless they have been based on a firm theoretical foundation, have been accompanied by research and specifically report on these issues.

Reviewing and editing of books and journals will not normally be considered as research activities, unless the author has made a research-related input.

Engineering 1
[updated August 2016]

This Specialist Committee considers applications in engineering science – i.e. engineering research oriented at the development of new/improved analysis and/or synthesis techniques, products, manufacturing processes etc. This includes both the invention or generation of ideas embodying new or substantially developed insights and the use of existing knowledge to produce new or substantially improved materials, devices etc.; the latter is often especially relevant in engineering.

Key research areas

- Architecture and the built environment**
- Chemical and process engineering
- Bio-engineering
- Civil engineering
- Metallurgical engineering

[**The "built environment" would typically include: quantity surveying; construction management; construction economics; project management; sustainable construction and sustainability; construction industry development; human development and wellness in construction; construction procurement; infrastructure delivery; property studies (e.g., property development, property and urban land economics, property management, property finance, property markets and valuations, and facilities management).

In identifying the most appropriate specialist sub-committee for your application, consider the nature of your **research focus** rather than simply your disciplinary field. For example,

- Researchers working in thermodynamics/thermal sciences may come from either/or the mechanical or chemical engineering fields;
- Researchers working on structures may come from either/or the civil or mechanical engineering fields;
- Researchers working on nuclear problems may (also) come from civil, mechanical or control of nuclear systems in electronic engineering.

There are thus several disciplines which could be placed in any of the two panels depending on the specific research focus of the researcher applying. Applicants can select up to three specialist committees/ sub-committees if they are unsure of the most appropriate one for them and also can to indicate if they work in an interdisciplinary way].

Boundaries and overlaps

- See comments above.
- In addition:
    - Research on the environmental impact of engineering may overlap with that covered by the Specialist Committees for Earth Sciences or Political Sciences and Philosophy.
    - Research primarily orientated at the societal impact of engineering may better be addressed to the Specialist Committees for Political Science and Philosophy or Anthropology, Development Studies, Geography, Sociology and Social Work.
    - Research orientated at engineering education should be considered by the Specialist Committee for Education.
    - Considerable overlaps with / between the Specialist Committee for Engineering are to be expected; in particular, computer engineering belongs primarily in engineering (Computer engineering addresses both hardware design aspects of computer systems and aspects of the design of software systems); topics such as operating systems, new languages, formal methods, new algorithms etc. will usually belong in the Specialist Committee for Information Technology; software engineering is problematic, and may have to be evaluated on a case-by-case basis with regard to the correct Specialist Committee to handle the application.
    - Some overlaps with both applied mathematics and physics are also to be expected.
    - Research in architecture may overlap with that covered the Specialist Committee for Performing and Creative Arts, and Design.

Types of research outputs

- Assessments in the field of engineering can sometimes be problematic due to the nature of the field. Activities in engineering at tertiary institutions - in common with other professional disciplines, such as

medical faculties and law - include both practitioners as well as researchers; this assessment process evaluates research outputs, with an emphasis (albeit far from exclusive) on scholarly engineering science research reported in recognised peer-reviewed journals, conferences, research monographs, and patents; these research outputs may be either Mode 1 or Mode 2, in the nomenclature of the Royal Academy, although the process concentrates more on the former; this should not be seen as implying a lack of recognition of the importance of other types of engineering outputs, such as high-level consultancy, it is simply not what this process sets out to evaluate.

- Assessment of the quality of outputs is based on judgements of their originality; innovation; contribution to advancing knowledge and understanding; contribution to the field, impact on the theory and practice of the discipline; or of analytical techniques, products and processes, including planning, design, construction and management where there is significant research involved; it is important to note that it is very largely the reviewers who make these judgement calls.
- The following research outputs are anticipated in engineering: journal articles, full length refereed conference papers, authored books and chapters in books that are research-based, awarded patents, software, design artefacts, materials, devices, and multimedia and video research outputs; outputs may be published either electronically or in paper form. The Specialist Committee anticipates that most of the best research outputs that will be cited by applicants will be in journal papers, and also in peer-reviewed conference proceedings, research books and patents; material that is not peer-reviewed is not accepted as a research output.
- Outputs other than recognised publications, including confidential reports of applied research for industry, can be included and the significance of the research component should where possible be highlighted in the application for evaluation. Routine consulting work for industry that does not embody research is not included.
- In assessing the quality of academic or professional journal papers the peers use their expertise to judge the editorial and refereeing standards of the journal in which the article appears. Generally those that have undergone a rigorous refereeing and editorial process will be regarded as being of high quality; similar criteria will be used to judge conference papers; the impact factors of journals will also be taken into account, although engineering journals generally have lower impact factors than in other fields.
- In assessing the quality of authored books and chapters in books, the novel research component of the author in the cited work or chapter will be evaluated by peers.
- In assessing awarded patents and other forms of research outputs listed above the research contribution of these outputs will be evaluated by peers and assessed by Specialist Committees.

Engineering 2
[updated August 2016]

This Specialist Committee considers applications in engineering science – i.e. engineering research oriented at the development of new/improved analysis and/or synthesis techniques, products, manufacturing processes etc. This includes both the invention or generation of ideas embodying new or substantially developed insights and the use of existing knowledge to produce new or substantially improved materials, devices etc.; the latter is often especially relevant in engineering.

Key research areas

- Aeronautical engineering
- Electrical and electronic engineering (including computer and information engineering but not computer science)
- Mining engineering
- Mechanical Engineering
- Nuclear engineering
- Production and industrial engineering

In identifying the most appropriate specialist sub-committee for your application, consider the nature of your **research focus** rather than simply your disciplinary field. For example,

- Researchers working in thermodynamics/thermal sciences may come from either/or the mechanical or chemical engineering fields;
- Researchers working on structures may come from either/or the civil or mechanical engineering fields;
- Researchers working on nuclear problems may (also) come from civil, mechanical or control of nuclear systems in electronic engineering.

There are thus several disciplines which could be placed in any of the two panels depending on the specific research focus of the researcher applying. Applicants can select up to three specialist committees/ sub-committees if they are unsure of the most appropriate one for them and also can to indicate if they work in an interdisciplinary way].

Boundaries and overlaps

- See comments above.
- In addition:
    - Research on the environmental impact of engineering may overlap with that covered by the Specialist Committees for Earth Sciences or Political Sciences and Philosophy.
    - Research primarily orientated at the societal impact of engineering may better be addressed to the Specialist Committees for Political Science and Philosophy or Anthropology, Development Studies, Geography, Sociology and Social Work.
    - Research orientated at engineering education should be considered by the Specialist Committee for Education.
    - Considerable overlaps with / between the Specialist Committee for Engineering are to be expected; in particular, computer engineering belongs primarily in engineering (Computer engineering addresses both hardware design aspects of computer systems and aspects of the design of software systems); topics such as operating systems, new languages, formal methods, new algorithms etc. will usually belong in the Specialist Committee for Information Technology; software engineering is problematic, and may have to be evaluated on a case-by-case basis with regard to the correct Specialist Committee to handle the application.
    - Some overlaps with both applied mathematics and physics are also to be expected.
    - Research in architecture may overlap with that covered the Specialist Committee for Performing and Creative Arts, and Design.

Types of research outputs

- Assessments in the field of engineering can sometimes be problematic due to the nature of the field. Activities in engineering at tertiary institutions - in common with other professional disciplines, such as medical faculties and law - include both practitioners as well as researchers; this assessment process evaluates research outputs, with an emphasis (albeit far from exclusive) on scholarly engineering science research reported in recognised peer-reviewed journals, conferences, research monographs, and

patents; these research outputs may be either Mode 1 or Mode 2, in the nomenclature of the Royal Academy, although the process concentrates more on the former; this should not be seen as implying a lack of recognition of the importance of other types of engineering outputs, such as high-level consultancy, it is simply not what this process sets out to evaluate.

- Assessment of the quality of outputs is based on judgements of their originality; innovation; contribution to advancing knowledge and understanding; contribution to the field, impact on the theory and practice of the discipline; or of analytical techniques, products and processes, including planning, design, construction and management where there is significant research involved; it is important to note that it is very largely the reviewers who make these judgement calls.
- The following research outputs are anticipated in engineering: journal articles, full length refereed conference papers, authored books and chapters in books that are research-based, awarded patents, software, design artefacts, materials, devices, and multimedia and video research outputs; outputs may be published either electronically or in paper form. The Specialist Committee anticipates that most of the best research outputs that will be cited by applicants will be in journal papers, and also in peer-reviewed conference proceedings, research books and patents; material that is not peer-reviewed is not accepted as a research output.
- Outputs other than recognised publications, including confidential reports of applied research for industry, can be included and the significance of the research component should where possible be highlighted in the application for evaluation. Routine consulting work for industry that does not embody research is not included.
- In assessing the quality of academic or professional journal papers the peers use their expertise to judge the editorial and refereeing standards of the journal in which the article appears. Generally those that have undergone a rigorous refereeing and editorial process will be regarded as being of high quality; similar criteria will be used to judge conference papers; the impact factors of journals will also be taken into account, although engineering journals generally have lower impact factors than in other fields.
- In assessing the quality of authored books and chapters in books, the novel research component of the author in the cited work or chapter will be evaluated by peers.
- In assessing awarded patents and other forms of research outputs listed above the research contribution of these outputs will be evaluated by peers and assessed by Specialist Committees.

Health Sciences:
Public Health Sciences
Clinical Health Sciences
Basic Health Sciences
[updated August 2017]

There are three sub-committees within the Health Sciences Specialist Committee which together focus on research involving all aspects of human health and disease. This includes a variety of disciplines in the natural, medical and social sciences which include *inter alia*: anatomy, andrology, anaesthesiology, audiology, biochemistry, bioethics, biophotonics, cardiology, cell biology, clinical chemistry, dentistry, dermatology, developmental biology (embryology), endocrinology, epidemiology, environmental health, family medicine, gastroenterology, genetics, geriatrics, haematology, health economics, health policy, health systems, hepatology, histology, immunology, infectious diseases, internal medicine, lasers, microbiology, nephrology, molecular medicine (including molecular cardiology, genetics etc.), neurosciences, neurology, non-communicable diseases, nuclear medicine, nursing, nutrition, obstetrics and gynaecology, occupational health, occupational therapy, oncology, ophthalmology, optometry, orthopaedics, otolaryngology, palliative care, pathology, paediatrics, pharmacy and pharmacology, physiology, physiotherapy, preventive medicine, public health, psychology, psychiatry, pulmonology, radiology, rehabilitation, rheumatology, rural health, sleep medicine, speech and hearing therapy, speech pathology, sports science, surgery, toxicology, trauma, tropical medicine, urology, vascular disease and virology.

The three sub-committees focus either on a) public health; b) clinical sciences; or c) basic health sciences research. In identifying the most appropriate specialist committee for your application, consider the nature of your **research focus** rather than simply your disciplinary field. For example, although occupational health is generally regarded as a 'public health discipline', an applicant's specific research focus may be on the diagnosis and treatment of individual patients with certain occupational diseases, and may be better suited to the clinical than the public health specialist committee. There are several disciplines which could be placed in any of the three panels depending on the specific research focus of the researcher applying. For example, a sports scientist undertaking biochemistry-related research may be best placed in the basic health science committee, whereas one undertaking research on the impact of physical activity on non-communicable diseases may be best placed in the public health committee and yet another researching treatment interventions for sports injuries may elect to apply to the clinical committee. These comments also apply to other disciplines such as pharmaceutical sciences, nursing and allied health professions. [Applicants can select up to three specialist committees/ sub-committees if they are unsure of the most appropriate one for them and also have to indicate if they work in an interdisciplinary way].

Key research areas

- **Sub-Committee 1: Public health**
  In general, public health research relates to protecting and improving the health of entire populations or communities rather than individual patients. It includes the interdisciplinary approaches of: epidemiology; biostatistics; occupational health; environmental health; health management and leadership; health economics, health policy and other health systems; and social and behavioural aspects of health. These approaches may be applied across different categories of health problems (e.g. infectious diseases, non-communicable diseases, sports injuries) or services (e.g. reproductive and sexual health services; mental health services; preventive and promotive services; rehabilitative services; palliative care).

- **Sub-Committee 2: Clinical sciences**
  In general, clinical science relates primarily to the presentation, pathogenesis, diagnosis and treatment of diseases, thus the majority of research in the various clinical disciplines falls into the ambit of this panel. Clinical pharmacology, microbiology and research in the allied medical disciplines and nursing which cover the areas listed above fit into this sub-committee.

- **Sub-Committee 3: Basic health sciences**
  This sub-committee focuses primarily on research in the areas of anatomy (including developmental biology, histology), biochemistry, physical anthropology, forensic science, molecular biology, microbiology, neurosciences, pharmacology, immunology and genetics among other areas as they relate to human physiology and diseases.

Boundaries and overlaps

In general, if the research is focused on animal or plant conditions or basic non-human cell function/physiology, the application is likely to be better covered by other panels such as Biochemistry, Molecular and Cell Biology; Basic and Applied Microbiology; Animal and Veterinary Sciences and Plant Sciences.

The key research areas in the three sub-committees for Health Sciences Panel overlap with each other, as well as many of the research areas in the other Specialist Committees. For Health Sciences 3 (Basic), this includes, inter alia, Biochemistry, Molecular and Cell Biology and Basic and Applied Microbiology. The overlap is relevant to research areas such as the study of micro-organisms involved in human diseases, as well as in research on the biochemical, physiological and molecular nature of health and diseases. There is also potential overlap in pharmaceutical sciences with the Plant Sciences, particularly aspects related to medicinal plants. There is also bound to be overlap with Animal and Veterinary sciences. For Health Sciences 1 (Public health), there is overlap with the Social Sciences such as Psychology, aspects of Social Work, Education and perhaps Political Studies and Philosophy as far as they are concerned with health-related aspects. The emphasis on deciding whether research belongs in one of the sub-Specialist Committees for Health Sciences or in another Specialist Committee lies very much on the strength of the human health related component.

Types of research outputs

<u>Primary outputs</u>

- Research publications and review articles in peer-reviewed journals
- Peer-reviewed conference proceedings published as papers (excluding abstracts)
- Peer-reviewed electronic papers
- Scientific monographs
- Reviews in recognised scientific journals

<u>Secondary outputs</u>

- Keynote or plenary lectures at conferences; these give an indication of the peer recognition
- Involvement in research assessment (editor of journals, reviewer for international journals, postgraduate external examiner appointments)

<u>Tertiary output</u> (can be considered on an individual basis depending on their status and impact)

- Conference proceedings without a system of refereeing
- Technical reports

Historical Studies

Key research areas

History is the study of the past. In its reconstitution, facts and events are subjected to selection and interpretation that will vary according to the time in which history is written and the ideas and values that influence its writing.

In the last three decades, South African historiography has been dominated by the perspective of "social history". More recently, historians have paid more attention to culture and to patterns of behaviour that have, at best, an indirect relationship with the social consciousness of class relations. Attitudes to authority, nationalism, family structure, and competing kinds of knowledge and beliefs have all received new interpretation as a consequence of this intellectual shift.

Specialised sub-fields that are especially well developed in the South African context include military history (though most modern military studies tend to stress social experience), biography (of both well-known personalities and emblematic 'ordinary people'), environmental history, especially with reference to the countryside, and local studies, particularly with respect to towns. Comparative history, that is, studies of particular themes across place and time, are relatively undeveloped locally. A fairly new concern is with the official or commercial representation of history, "public history"; here the concern is with how the past is more or less self-consciously remembered or re-constituted by different groups. This sphere has obvious affinities with "heritage studies", a new field in South Africa, often taught within geography or art history departments.

Boundaries and overlaps

The discipline of history, as it is pursued in South Africa and elsewhere embraces a number of fields that are currently not always taught within history departments. For example, (Christian) church history is often taught in conjunction with religious studies and theology; similarly, economic history tends to be incorporated into economics. These organisational divisions have also restricted intellectual interaction between art history and the umbrella discipline. Classical history, too, is mainly studied in conjunction with classical language and literary studies. Even so, despite these internal divisions, the comparative assessment of historical research should embrace all these fields.

During the 1980s, history was the most strongly developed discipline within the social sciences at South African universities and several other disciplines, notably sociology and politics were taught with a strong historical emphasis. Much of the scholarship to do with post second world war "high politics" – that is, electoral politics, nationalist struggle, and state policy, has in South Africa been the preoccupation of political scientists, drawing upon the methods, sources and interpretive frameworks intrinsic to their discipline. Historians working on pre-colonial African state formation and relying on the interpretation of oral traditions have depended heavily on anthropological approaches and anthropologists themselves have made and continue to make decisive contributions to South African historiography.

For the work of the Specialist Committee the most frequent disciplinary overlaps with Historical Studies are those that occur with Political Studies, Religious Studies and Performing and Creative Arts, and Design, because of the ambiguous status of research in classics, church history and art history.

Types of research outputs

Research outputs should include the following:

- Articles in rigorously refereed journals
- Books that constitutes original research based on primary sources, or works of synthesis that propose original arguments
- Chapters in books (with the same caveats)
- Review articles in journals - again when an overview of a body of scholarship provides the basis for a fresh perspective – the (US) African Studies Association overview articles in the African Studies Review would constitute cases in point
- Published and refereed conference proceedings

- Editorships - these represent research if they involve textual commentary or scholarly investigations to establish the meaning and authenticity of published primary sources; editorships of journals or of multi-authored books do not in themselves count as research – though an introduction to a multi-authored collection of essays just might on grounds (if any) of intellectual originality

The following would not normally be considered as research outputs that would count towards the award of a rating:

- General writing directed at non-specialists containing few or no new insights
- Syntheses of research undertaken by others which do not include research or advance critical debate (for example general surveys, book review articles)
- Textbooks, handbooks, guides, etc.
- Contributions to encyclopaedias and other works of reference
- Articles in non-refereed journals
- Unpublished conference papers, even when they are invited contributions (if they make a significant impact on the field they will be published subsequently; that is when they should count)
- Book reviews
- Journalism
- Unpublished research reports including any consultancy work

Information Technology
[updated August 2016]

Key research areas

This Specialist Committee considers applications from all areas of information technology and information science, including computer science, informatics (information systems) and information science.

Boundaries and overlaps

- Considerable overlap with various disciplines is to be expected. In cases of overlap this Specialist Committee considers applications that focus on aspects of information technology or information science, rather than cases where information technology is merely used as a tool in the pursuit of knowledge.
- In many cases information technology researchers consider the use of information technology in a specific environment (such as the use of information technology for education) or the application of some discipline in the information technology context (such as management of information technology). If, in such cases, the primary contributions are made to information technology, the applications should be considered by this Specialist Committee. If the primary contributions are made to the other discipline, the application has to be considered by the Specialist Committee for that discipline. A useful guideline is to consider whether the journals and proceedings where outputs have been published are in the information technology domain (such as those published by the AAAI, ACM, AIS, IEEE Computer Society, SAICSIT and similar bodies), or in the domain of the other discipline.
- Considerable overlap between information technology, mathematics, applied mathematics, and engineering is to be expected; in many cases it is hard, if not impossible, to provide exact prescriptions; computer engineering, including hardware design and aspects of computer systems, normally fall under engineering; computer vision, speech, pattern recognition (including neural networks and fuzzy logic), etc., fit equally naturally into either engineering or this Specialist Committee; some subject areas such as computability or (algorithmic) aspects of graph theory, in a similar manner, fit equally naturally in information technology or mathematics; in these cases the researcher should probably be guided by his or her working environment; someone working in an engineering department should probably be assessed by the Specialist Committee for Engineering while someone working in a computer science department should apply to this Specialist Committee.

Types of research outputs

Primary outputs (reviewed publication of original research)
- Publications of original research in peer-reviewed journals
- Books and chapters in scholarly books
- Full length peer-reviewed papers in published conference proceedings

Secondary outputs (reviewed publication of derivative works)
- Keynote or plenary lectures at conferences
- Reviews/Surveys in recognised scientific journals
- Patents

Tertiary Outputs
- Tools (preferably open source)
- Tutorials
- Video (Lectures)
- Technical Reports

Note

- The emphasis throughout is on the quality of the research contributions rather than exclusively on quantity. Researchers are encouraged to submit their work to journals and proceedings, and contribute at conferences, etc., which have the reputation of maintaining the highest possible standards.
- During their self-assessment, it is important that researchers should give details of the significance of their contributions; placing their work in the context of a subject area, or explaining why an inter-disciplinary piece of research is of interest, will assist in assessing output.

- National and international collaboration is encouraged particularly where different co-authors are involved. Research independence and leadership is important in this context.

Law

Key research areas and boundaries

Law interfaces with all disciplines because legal regulation occurs in every field of endeavour; it is inevitable that law will impact on other disciplines. The Specialist Committee for Law, however, can consider applications for evaluation of research outputs in the following key research areas. Specialised sub-areas are included in brackets. Interfaces and overlaps, where other panels may be more appropriate (or assistance from other panels may have to be called for) are italicised.

- Private law, including law of persons (children, legal persons and associations), family law (marriage, divorce, marital property), succession (estates, trusts), property (deeds registration, intellectual property, sectional titles and time-share property, mining and minerals, water law, constitutional property law, expropriation, land reform), contract (cession, mortgage and pledge), delict (damages), enrichment, estoppel, private international law, civil procedure and evidence;

- Public law, including administrative law, constitutional law, human rights law (including race and gender studies), social security law, public international law, international human rights law, military law;

- Commercial law, including mercantile law, company law, corporate law, law of partnership, joint ventures, share blocks, indigenous forms of business enterprise such as stokvels and mashonisas, banking law, negotiable instruments, insolvency, insurance, tax law, competition law, shipping and maritime law, international trade law, trademarks and patents, unlawful competition and copyright, financial services and planning law, financial instruments, securities law, labour law, commercial agency;

- Criminal law, including international criminal law, criminal procedure and evidence, police law, penology;

- Legal training, street law, access to justice, arbitration, appropriate dispute resolution;

- Medical law;

- Planning law, building law;

- Environmental law;

- Information technology and computer law:

- Jurisprudence, comparative law, legal theory, legal methodology, interpretation of statutes and hermeneutics, legal philosophy, legal history, legal sociology and anthropology;

- Legal pluralism, indigenous law.

- Medical law, planning law, building law, environmental law, information technology and computer law;

Types of research outputs

In general, the Specialist Committee for Law can consider research outputs in the following forms:

- In general research outputs are recognised when they embody and exhibit the product or result of substantive research and add substantive new knowledge or insights to the public domain.

- Scholarly outputs that satisfy these requirements may appear in a variety of forms, including journal articles, notes, books, contributions in books, monographs, loose-leaf works, research reports, peer-reviewed full length published conference proceedings, electronic publications and computer software; outputs in any of these forms are recognised, provided they are in the public domain (readily available for evaluation purposes), have been peer-reviewed as part of the publication process, and in so far as they embody and exhibit the product or result of substantive research and add substantive new knowledge and insights to the public domain.

- Books written for the professions and student textbooks, collections of legislation, cases or other pre-existing materials, edited versions of pre-existing books or other materials, translations, case notes, book reviews and similar outputs will only be recognised as scholarly outputs for purposes of evaluation if and in so far as they embody and exhibit the product or result of research and add substantive new knowledge and insights to the public domain.

- Editing of a book or a scholarly journal will only be recognised if and in so far as it makes an identifiable scholarly contribution that satisfies the requirements above.

- Assessment of new editions of existing outputs will be based on the extent to which the previous edition was revised, and in so far as the revision satisfies the requirements above; applicants must clearly state and identify the revised portion of the output.

- Completed confidential research (e.g. sensitive reports produced for government - see Note 10.)

Literary Studies, Languages and Linguistics

Key research areas

This Specialist Committee's ambit includes the following:

- All language literatures and/or national/continental literatures currently taught and/or researched in South African tertiary institutions as well as continental literatures or transnational literatures in world languages; questions of comparisons and translation in and between these literatures;
- Across these various domains, all authors/performers, periods and genres of the language literature concerned;
- Questions of narrative and representation across all media - language (spoken, sign and written); performing arts; mass media (printed, broadcast and electronic); music;
- Publishing studies and histories of the book;
- Questions of literary theory;
- Questions of discourse and rhetorical analysis across all forms of language and utterance;
- Creative writing which is informed by substantial research;
- Bibliographic, translation and editorial work;
- All areas of theoretical linguistics e.g. syntax, semantics, philosophy of language, etc.;
- All areas of interdisciplinary and cross-disciplinary investigation, such as sociolinguistics, psycholinguistics, historical linguistics etc.;
- All areas of applied linguistics e.g. language teaching and learning, translation and interpreting, language planning etc.;
- Language-specific studies pertaining to linguistic documentation and description etc.

Boundaries and overlaps

The key research areas in Literary Studies overlap with a number of other Specialist Committees notably those responsible for areas such as anthropology, critical theory, gender studies, history, information and communication studies, journalism, music, philosophy, particularly aesthetics and ethics, politics, psychology, social studies, sociology, and translation and editing studies.

Because of the central position of languages as a human characteristic and activity, areas of overlap may occur over a wide spectrum, such as acoustic engineering, communication science, and media studies, computer science, the performing and creative arts, cultural studies, hermeneutics and religious studies, education, anthropology, sociology, history, psychology, philosophy, law, etc.; where expertise in more than one area is important in judging the quality of research, language-related research might need to be considered by Committees concerned with these specialist areas.

Types of research outputs

In general, credit is given to those outputs that contribute to the advancement of knowledge and show originality, methodological strength, scholarly rigour, and relevance for other researchers, policymakers and practitioners; all work that is eligible must be publicly accessible, so that reviewers may access it; supervision and guidance of postgraduate research students from master's level upwards, while recognised as a quality-assuring research activity, is not regarded as research output, per se.

Eligible materials include written outputs that report on the result of research (qualitative or quantitative) or scholarly works dealing with research–methodological issues. These include:

- Papers in peer-reviewed international and national research journals
- Peer-reviewed monographs and books
- Peer-reviewed chapters (in books) that include research-related topics
- Research published as full-length papers in peer-reviewed published conference proceedings
- The compilation of new databases and corpora which form the foundation of new research
- New software or tools used to explore such databases
- Dictionaries and grammars of formerly neglected languages, which are more than purely descriptive, or which offer a new or innovative approach
- Reference works and critical bibliographies

- Computer programmes arising from research but only if they are peer-reviewed and in the public domain
- Creative writing which show evidence of substantial research
- Translations of literary or scholarly works
- Research work that sustains intellectual infrastructure like critical editions

Outputs of lesser significance

- General research-based publications in collaboration with industry, government or non-governmental organisations (NGOs) and foundations, unless they are peer reviewed
- Chapters or papers in non-reviewed outputs, including in-house journals or non-reviewed edited scholarly books
- Updated editions of books, unless there is evidence of substantial new research-based inputs

Outputs which are normally <u>not</u> eligible

- Textbooks, curriculum materials and description of new teaching and learning approaches. Curriculum materials (including course materials and textbooks) which are published, and based on or developed through research properly fall within the ambit of the Specialist Committee for Education.
- Reviews of books, which have no research-related aspects
- Editing of books and journals, unless the author has made a research-related input, which must be clearly evident

Mathematical Sciences

Key research areas

This Specialist Committee considers applications from all areas of mathematics and applied mathematics, including theoretical physics, statistics and operations research. This Committee also considers research in graph theory, discrete mathematics, numerical mathematics, financial mathematics, industrial mathematics, mathematical biology, etc.

Boundaries and overlaps

- Considerable overlap with various disciplines is to be expected. In cases of overlap this Specialist Committee as a general but flexible rule, considers applications of a more theoretical, mathematical and modelling nature.
- Applied mathematics may overlap with theoretical physics or engineering as for example with fluid mechanics; as a general guideline, research with a strong emphasis on mathematical models, or the analysis of the governing differential equations would normally fall within this Specialist Committee.
- Some overlap with biology and economics is also to be expected. Research concentrating on the mathematical modelling aspects clearly belongs to this Specialist Committee.
- Potential overlap with geostatistics in the Assessment Panel for Earth Sciences.

Types of research outputs

Primary outputs
- Publications of original research in peer-reviewed journals
- Peer-reviewed conference proceedings (excluding abstracts)
- Scientific monographs
- Computational research tools, including software
- Peer-reviewed electronic publications
- Patents

Secondary outputs
- Chapters in books
- Keynote or plenary lectures at conferences
- Reviews in recognised scientific journals

Tertiary outputs
- Other full length conference proceedings (excluding abstracts)

Other
- Technical reports (these can be classified as primary, secondary, or tertiary, depending on their scope and accessibility)

Note

- The emphasis throughout is on the quality of the research contributions rather than exclusively on quantity. Researchers are encouraged to submit their work to journals and proceedings, and contribute at conferences, etc., which have the reputation of maintaining the highest possible standards.
- During their self-assessment, it is important that researchers should give details of the significance of their contributions; placing their work in the context of a subject area, or explaining why an inter-disciplinary piece of research is of interest, will assist in assessing output.
- National and international collaboration is encouraged particularly where different co-authors are involved. Research independence and leadership is important in this context.

Performing and Creative Arts, and Design

Key research areas

Research in the performing and creative arts straddles a number of disciplines, forms of artistic endeavour and approaches to such fields and forms.

Methodologically speaking the field comprises two complimentary research and research related activities, namely:

- formal academic research in the traditional sense (i.e. the study of the work - performance, artefact, etc. - and its context from a specific theoretical perspective); this includes the history, theory and analysis of art, music, dance, theatre and performance in all their forms;
- research in a more arts-specific sense, where the process of creation constitutes a research process per se and the outcomes are items such as artefacts and performances. (See below under Research Outputs).

This Specialist Committee covers research in the fine and applied arts, drama, music, theatre and performance; these are traditionally clearly distinctive fields of study and practice within the academic structures in South Africa; while much cross-pollination is occurring today, the fundamental structures are mostly in place; approaches, theories and outputs will therefore differ from field to field; however, in the lists below the term “arts” is used inclusively, to indicate most or all of the different forms.

Specific fields included are drama, theatre, dance and performance studies, including aspects such as drama and theatre in education, community theatre, theatre for development, street theatre, industrial theatre, etc., aspects of film and media studies, aspects of cultural studies, notably the role of the arts in the broader cultural system, fine and applied arts, including photography and new media, music and music studies of any idiom, period and provenance, arts management studies, technological studies in the arts, and theory and methodology of arts research.

Boundaries and overlaps

There may be strong overlaps with communication studies, historical studies, journalism, film and media studies, cultural studies, language and literature (in all languages), as well as with some cultural aspects of educational studies, development studies, psychology, sociology, anthropology, business and management studies; in cases of interdisciplinary work, there will be close consultation between Specialist Committees.

Types of research outputs

The Specialist Committee recognises the importance of both formal academic research and creative outputs for the research cultures in many departments, as well as for individual researchers; it thus aims to give equal value to theoretical/empirical research (i.e. historical, theoretical, analytic, sociological, economic, etc. studies from an arts perspective) and creative work (i.e. in cases where the output is the result of a demonstrable process of investigation through the processes of making art.); the latter category of outputs is treated as fully equivalent to other types of research output, but in all cases credit is only given to those outputs which demonstrate quality and have a potential for impact and longevity.

Outputs thus include:

<u>Formal academic research:</u>

- Articles in peer reviewed journals and conference proceedings, peer reviewed books and chapters in books, on any aspect of the performing and creative arts
- Editorships and curatorships (where editorial work or curation is taken to imply substantive research, explicitly bringing new knowledge or insights to the public domain)

<u>Practice, as research outcomes and recognised research outputs, could include any of the following as long as the work in each case is taken to imply substantive research, explicitly bringing new knowledge or insights to the public domain:</u>

- Non-conventional academic activities related to creative work and performance: Catalogues, programmes, and other supporting documentation describing the results of arts research in combination with the works themselves;
- In the Creative Arts and Design: art/artefacts, exhibited or otherwise presented within the public domain; design of exhibitions or events; public commissions; media presentations including performance, installations and catwalk presentations; mass production; patents and registered designs; new processes and materials; new devices including software; reports; other non-contextual research output;
- In Dance: Performance in, and choreography and design for dance and movement performances;
- In Drama and theatre: scripts or other texts for performances and the direction of and design (lighting, sound, sets, costumes, properties, etc.) for live presentations as well as for films, videos and other types of media presentation; this also applies to any other non-textual public output (e.g. puppetry, animated films, etc.), provided they can be shown to have entered the public domain;
- In Music: live performance by musicians, broadcasts, recordings, films, videos, and computer media as well as conventional published musical materials; where appropriate, as in the case of live performances, evidence may be sought that the output entered the public domain and was in fact accessible to the public.

Physics

Key research areas

The Physics and Astronomy Classification Scheme (PACS) of the American Institute of Physics (AIP) is generally accepted as the international standard for the classification of subjects in physics. The main categories are:

- Category 00: General
- Category 10: The physics of elementary particles and fields
- Category 20: Nuclear physics
- Category 30: Atomic and molecular physics
- Category 40: Electromagnetism, optics, acoustics, heat transfer, classical mechanics, and fluid dynamics
- Category 60: Condensed matter: structure, mechanical and thermal properties
- Category 70: Condensed matter: electronic structure, electrical, magnetic, and optical properties
- Category 80: Interdisciplinary physics and related areas of science and technology
- Category 90: Geophysics, astronomy, and astrophysics

Boundaries and overlaps

The PACS classification scheme reflects the status of physics as *the* fundamental physical science which overlaps with mathematical, information, biological and chemical sciences, and increasingly so with areas which deal with complex systems as diverse as financial markets, traffic flow and brain function; consultation with other Specialist Committees on an *ad hoc* basis may therefore be required to determine the one most relevant to deal with evaluations in such cases, taking the PACS scheme as a point of departure.

Types of research outputs

<u>Primary outputs</u>

- Publications of original research in peer-reviewed journals
- Peer-reviewed conference proceedings (excluding abstracts)
- Scientific monographs
- Computational research tools
- Patents

<u>Secondary outputs</u>

- Chapters in books (peer-reviewed)
- Keynote or plenary talks at conferences
- Reviews in recognised scientific journals

<u>Tertiary outputs</u>

- Other full-length conference proceedings

<u>Other</u>

- Technical reports, with status depending on the scope and impact

The quality of research as an indicator is emphasised rather than quantity alone; this implies that the choice of journals for publication plays an important role; the status of a journal may, for example, be judged according to its impact factor as published from time to time by *Science Citation Index (SCI)*, although the relative size of the research community in a given field or sub-field also has to be considered.

Plant Sciences

Key research areas

Studies in plant sciences range across several of the levels of a hierarchy of organisation, from molecular biology to global climate change, and also frequently contribute to interdisciplinary studies. For an application to be included in submissions to the Specialist Committee for Plant Sciences it should cover research into understanding plants, their relationships and functioning. Phycological and sometimes mycological studies also fall within the mandate of this Specialist Committee for Plant Sciences. The field is extremely broad and so the following list is illustrative and certainly not exclusive.

- Applied Plant Sciences – horticulture and agronomic disciplines and forestry;
- Ecology - this is a very broad discipline and includes, *inter alia* systems ecology, community ecology, vegetation science, biodiversity studies, plant-herbivore interactions, plant population biology, pollination biology, ecological economics, conservation biology and restoration ecology;
- Systematics - includes taxonomy, plant evolution and biodiversity using both classical and molecular techniques;
- Ethnobotany - includes indigenous plant use, sustainable utilisation, ethnopharmacology, regeneration biology of ethnobotanically important species, etc.;
- Physiology - includes studies ranging from cellular/biochemical (e.g. plant growth regulators, signalling, process control) to whole organism-environment interactions (e.g. ecophysiology and response to global climate change);
- Plant biochemistry and molecular biology – includes studies on the mechanisms underlying physiological responses and developmental processes, and genetic modification.

Boundaries and overlaps

As the study of plants covers such a wide range of hierarchical levels there is considerable potential for overlap with other Specialist Committees. The following is a list of potential overlaps:

Animal and Veterinary Sciences - there is considerable potential for overlap in particular in some ecological studies. The application should be directed to the Specialist Committee covering the major thrust of the work.

Biochemistry, Molecular and Cell Biology - if the research, although biochemical or molecular in nature, is aimed specifically at understanding the performance and functioning of plants, then it falls within the Specialist Committee for Plant Sciences; the biochemistry and molecular biology of processes specific to plants, and of plant stress, would fall into this category.

Chemistry - there is potential for overlap in the studies on ethnobotany and ethno-pharmacology; once a study gets to the stage of identifying and elucidating the structure of a compound of interest, it overlaps with natural products chemistry, and may be better suited to the Specialist Committee for Chemistry.

Earth Sciences – there could be overlap with environmental management, and physical geography (environmental effects on plants and plant response to climate change.

Health Sciences - potential overlap with ethnopharmacology; once the study gets to the stage of full scale drug tests it is probably more suitable for the Specialist Committee for Health Sciences.

Basic and Applied Microbiology - the potential for overlap here lies particularly with the study of micorrhizal associations and of nitrogen fixation (although there are probably others); if the study is aimed specifically at the effect of these processes on plants, plant performance and ecosystem processes, then it falls under the Specialist Committee for Plant Sciences.

In practice some applications will have to be assessed on an individual basis in terms of which Specialist Committee is most appropriate; however, as a guiding principle, work assessed by the Specialist Committee for Plant Sciences would be studies aimed at increasing understanding of plants as such, rather than studies in which the interest in plants is peripheral.

Types of research outputs

An important criterion in assessing outputs is whether they are peer-reviewed; although publication in 'high impact' journals is noted, sometimes publication in a specialist journal with a lower impact factor may be more suitable; the following classification gives an indication of the weight different outputs carry:

Primary outputs
- Publications of original research in peer-reviewed journals
- Review articles (subjected to peer-review) in scientific journals
- Chapters in books that have been subjected to peer-review
- *Refereed conference proceedings (excluding abstracts)
- Scientific monographs

Secondary outputs
- Keynote or plenary lectures at conferences
- Patents
- Public biological databases

Tertiary outputs
- Other full-length conference proceedings (excluding abstracts).

Other
- Technical reports (these may be classified as primary, secondary or tertiary, depending on their nature and accessibility)

*It should be noted that in the field of Horticulture the International Society for Horticultural Sciences (ISHS) and the Proceedings of the International Society of Citriculture (published by the International Society of Citriculture) conferences are peer-reviewed.

Political Sciences and Philosophy

Key research areas

- There are two main sub-fields of the political sciences; the first is political science, including South African politics, political behaviour and comparative political behaviour, comparative politics, conflict studies, gender politics, African politics, political economy, public policy, political research methodology, political risk analysis, state and economy studies and political theory. The second is international relations, including foreign policy studies, strategic studies, peace studies and international political economy;

- The field of philosophy includes epistemology, metaphysics (including philosophical cosmology), ethics (including meta-ethics, normative ethical theory and all branches of applied ethics), aesthetics (including philosophy of art, music and literature), social and political philosophy, philosophical anthropology (including the philosophy of culture), logic (including formal, theoretical, philosophical and applied logic), philosophy of mind, philosophy of action, theory of practical reasoning, history of philosophy (including critical and scholarly work on particular philosophers, groups of philosophers and movements in philosophy), systematic investigations within any broadly recognised approach to philosophy (including African philosophy, Eastern philosophies, analytical philosophy, phenomenology and hermeneutics), philosophy of science, philosophy of social science, philosophy of law, philosophy of religion, philosophy of education, and philosophy of particular disciplines (including mathematics, physics, biology, economics, history, linguistics and psychology).

Boundaries and overlaps

Political sciences overlap with certain aspects of development studies, social policy and administration, political economy, political sociology and political psychology, and policy analysis; there are potential overlaps between philosophy and all other disciplines since the philosophy of a discipline and the most highly theoretical aspect of that discipline frequently deal with closely related issues; there are also significant areas of overlap between, e.g. philosophical cosmology and physics, aesthetics and the theory of art and literature, social and political philosophy and social, political and economic theory, philosophy of mind and psychology, philosophical anthropology and theoretical anthropology, formal logic and mathematics, philosophy of law and jurisprudence, philosophy of education and educational theory and history of philosophy and intellectual history.

Types of research outputs

The primary research outputs are articles in established peer-reviewed journals, research based books (not textbooks) issued by reputable publishers, contributions to books edited by appropriate experts, and the peer-reviewed proceedings of significant conferences.

Psychology
[updated August 2016]

Key research areas

This Specialist Committee deals with research focused on human (and in some instances animal) behaviour, experiences and mental processes (cognition, emotion, motivation, etc.) on individual, interpersonal, group, community, and broad societal levels.
All forms and varieties of research in all sub-disciplines of psychology are included, for example:

- Basic fields (such as physiological, social, personality, developmental, and cognitive psychology, etc.);
- Professional fields (such as clinical, counselling, educational, and organisational psychology with all related sub-areas, for example psychopathology, psychotherapy, psychometrics, organisational change and development, etc.);
- Other applied fields (such as health psychology, neuropsychology, sport psychology, community psychology, environmental psychology, forensic psychology, pastoral psychology, etc.);
- Newer fields and approaches such as critical and post-colonial psychology, evolutionary psychology, positive psychology, etc.;
- It will include research on, and from, various paradigmatic and theoretical perspectives, and the whole variety of quantitative and qualitative methodological approaches used in psychology.

Boundaries and overlaps

Psychology potentially overlaps and interfaces (in disciplinary and inter-disciplinary research) with a very wide range of other disciplines ranging from the biological and health sciences to anthropology, sociology, social work, communication studies, political sciences and philosophy, education (e.g. gender, race, culture and identity studies), management sciences, law, as well as mathematical (statistical) sciences, and religious studies.

Psychology may also, in respect of certain methodologies, interface with disciplines such as language and literature using qualitative methods such as discourse, narrative, rhetorical and hermeneutical analyses; methods such as participant observation, ethnography and field studies, may also be used by other disciplines such as cultural anthropology, just as quantitative methods of data-gathering are used by many other disciplines in the natural sciences.

In all of the above potential overlaps, the Specialist Committee for Psychology may need to cooperate with other Specialist Committees; the key criteria for consideration by the Specialist Committee for Psychology would seem to turn on the training of the applicant, the literature drawn upon, and/or the form of research methods which justify this work.

Types of research outputs

An important criterion in assessing outputs is whether they are peer-reviewed and peer-recognised.

<u>Primary outputs</u>

- Publications in peer-reviewed scientific journals
- Publications in peer-reviewed conference proceedings (not abstracts)
- Books and chapters in books (based on own original research) that have been subjected to peer-review
- Keynote or plenary lectures at high standing conferences

<u>Other</u>

- Other full-length conference publications
- Artefacts such as psychological tests, forms of therapy, and computer programmes, CD-ROMS – as long as there is sufficient evidence of peer, rather than layperson, recognition and acclaim and that such artefacts are clearly based on research
- Involvement in research assessment (e.g. editor of journal)
- Leadership in research programmes

Religious Studies and Theology

Key research areas

The Specialist Committee will consider applications in the academic study of religion and religions, with respect to all religious traditions, including African Traditional Religion, Buddhism, Islam, Judaism, Hinduism, and Christianity; comparative religion; the scientific study of religion; the philosophy / sociology / psychology of religion; religion education; religion and science; religion in literature, feminist theology/religious studies or gender and religion and other emerging disciplines in which religion is the dominant interest. Also included are Biblical studies (First or Old) Testament/Hebrew Bible and (Second) New Testament), with related disciplines such as Greek, Hebrew, Aramaic; methodological approaches to ancient texts (derived from social sciences, historical research, textual criticism, grammatical research, etc.); theology in all its forms, for instance systematic theology / dogmatics / philosophical theology, the history of Christianity, church law, practical / pastoral theology, theology and development, contextual theologies, theological ethics; hermeneutics (in its biblical and theological forms); missiology, ecumenical theology.

Boundaries and overlaps

There may be overlaps due to interdisciplinary work on a methodological level, for instance with various aspects of philosophy and sociology, other social sciences, historical studies (Ancient Near Eastern studies, Greek-Roman background); approaches to therapy, communication theories or development theories. If the main focus is theological or religious in nature, application should be made with the Specialist Committee for Religious Studies and Theology.

Hermeneutical interests, including text theory, theory of understanding and applying texts, which a focus on religious texts or have clear theological/religious interests, should be referred to the Specialist Committee for Religious Studies and Theology.

Church history, as one of the four traditional theological sub-disciplines, should fall under the Specialist Committee for Religious Studies and Theology.

Types of research outputs

<u>Primary outputs</u>

- Refereed scholarly articles in eminent academic journals (with rigorous editorial and refereeing policies) that are appropriate to the particular subject matter - which might include South African based journals with international standing);
- Scholarly monographs contributing new knowledge or expanding the frontiers of knowledge and understanding in the relevant fields of studies – the status of the publisher (typically with rigorous peer review policies) would often serve as indication of the quality of the book;
- Chapters in co-authored scholarly books or essays in scholarly edited volumes (under the same conditions as monographs);

<u>Secondary outputs</u>

- Editing a book is also acknowledged according to the measure in which the applicant is creatively involved and offering academic leadership in the conceptualisation and planning process. If the applicant is just administratively involved, less recognition will be given.

<u>Other</u>

In addition to published outputs, other evidence of the standing of a researcher is considered to be important, but not on the same level as his/her publications. This includes invited keynote / plenary addresses at major international conferences (inside or outside South Africa), membership of editorial boards, leadership in international societies, guest lectureships, membership on academic boards, prestige acknowledgements and awards by various research-related institutions. These will only be important to the measure in which the referee is able to establish the qualitative value of such recognition. For instance, foundations with a very rigorous peer-reviewing system like the Alexander von Humboldt (to mention only one obvious example) will carry considerable weight, while an unpublished conference contribution could not carry weight since the quality cannot be assessed. However, if the applicant is invited to a prominent international university to read

that paper, it again carries some weight since it serves as acknowledgement of the status of the applicant.). Another indication of academic standing beside citation is the recognition of the specific contribution made by a scholar through a Festschrift, honorary doctorates, review symposiums on a person's monograph (at conferences or in academic journals), postgraduate theses focusing on the scholar's contribution, invitations to serve as external examiner or to write recommendations of various kinds. Each of these would need to be judged in terms of the particular context.

Veterinary and Animal Production Sciences
[Previously Animal and Veterinary Sciences 2 - updated Aug 2016]

Key research areas

This Specialist Committee deals with applications that encompass the health of all wild and domestic species and the production of species farmed for human consumption or other products. Research covering the epidemiology, prevention, diagnosis and treatment of diseases is included. Also covered is animal nutrition where the study is focussed on the animal rather than on the nutrient itself.

Boundaries and overlaps

The boundaries of these Specialist Committees will sometimes overlap with each other and those of other Specialist Committees, in particular Plant Sciences, Health Sciences; Chemistry; Mathematical Sciences and Biochemistry, Molecular and Cell Biology.

The following is a list of potential overlaps with other Specialist Committees:

- Plant Sciences - there is considerable potential for overlap, particularly in aspects of ecology; the application should be directed to the Specialist Committee covering the main thrust of the work;

- Health Sciences – where an animal model is used to study diseases that are both of animal and human significance (i.e. zoonotic) or where an animal model is used or proposed as a model of a human disease.

- Biochemistry, Molecular and Cell Biology - if the research is biochemical or molecular in nature, but is aimed specifically at understanding the biology of animals, then it falls in the Specialist Committee for Zoological Sciences); the biochemistry and molecular processes specific to animals would fall into this category, as would the genetics of animals;

- Chemistry - there is potential for overlap in the study of ecotoxicology and chemical ecology; if the work addresses identifying the structure of compounds, it is better suited to the Specialist Committee for Chemistry;

- Mathematical Sciences - studies that make use of advanced statistical techniques, including the derivation of new approaches, would be considered by these if the main aim of the work is to advance the understanding of animal biology.

Types of research outputs

The most significant outputs will be refereed papers in scientific journals that have rigorous editorial and refereeing policies. However, it is recognised that museum journals, although not always ISI-accredited, are often the most appropriate outlet for classical systematic studies. Other research outputs, such as registered patents and refereed conference proceedings will be treated on their merits.

Publications such as a review in a high-profile journal, or a book or chapter in a book aimed at the research community, indicate a researcher's standing in the field are also important.

Other forms of output, such as technical reports, are judged on their scientific merit, and the submission should always include information on the research content of such outputs.

In addition to published outputs, other evidence of the standing of a researcher is considered to be important; this includes invited talks at conferences, membership of editorial boards, etc.

Zoological Sciences
[Previously Animal and Veterinary Sciences 2 - updated Aug 2016]

Key research areas

South Africa has a rich fauna occurring in a wide variety of habitats and biomes. This Specialist Committee covers all levels of zoological research including evolution, molecular ecology (including population genetics, genetic aspects of invasions, landscape genetics, phylogeography etc.), systematics and phylogeny, functional morphology, physiology, ethology, ecology (both marine and terrestrial); biodiversity and conservation research (including invasion biology)

Applied aspects such as agricultural entomology and nematology, fisheries biology, aquaculture, integrated pest management and biological control are also included.

Key research areas

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