

PORTFOLIO OF RESEARCH DIMENSIONS

1. Background

The Research Department has developed suggested areas of research achievements to help in the description, planning and evaluation of research. In this document, the complex research system has been divided up into a number of dimensions from which the researchers and research groups can select when defining their goals and aspirations. They are fully in line with the principles for the evaluation of research¹. Items are suggested below for each of the dimensions and researchers can pick from among them to describe and demonstrate what they aim to achieve or have achieved in the dimension in question. These suggestions are not exhaustive or mandatory: each item need not be demonstrated and there may also be other items that are not listed but that would strengthen the dossier. The portfolio solely serves as inspiration and may not be regarded as a checklist of items that all need to be completed.

This portfolio of research dimensions was developed chiefly for the purposes of retrospective evaluations at the individual level (What have the person's research accomplishments been in recent years? How can this be documented or illustrated?). They could also be helpful at the group level (group of individuals whose respective strengths work in a complementary manner) and for prospective purposes or planning (definition of personal research goals and/or implementation of the group's research strategy).

2. Aim of the portfolio of research dimensions

2.1. General

This portfolio of research dimensions is designed to provide the faculties and academic staff with concrete guidance for their research and career strategy. They focus on the development of talents and qualities and give full value to the differentiation between research fields and the individual realisation of research goals.

The vision of the staff member (and/or group) can be translated into the relevant dimensions of this portfolio of research dimensions. A number of possible activities and milestones can then be associated with these dimensions as descriptors and clearly measurable indicators where relevant². The use of indicators and descriptors is intended as a support to – and not a replacement for – a quality-based holistic evaluation. They can serve to confirm a specific goal described within the overarching predominantly narrative framework.

¹ <https://www.ugent.be/en/research/research-evaluation.htm>

² Ghent University guidelines for appropriate use of indicators in the context of the evaluation of research (webpage is under development).

2.2. Use as part of the career and evaluation model for professorial staff

This portfolio of research dimensions can be used in the context of the procedures described in the Ghent University regulations for the appointment, promotion, evaluation and job of members of professorial staff (ZAP for *Zelfstandig Academisch Personeel* in Dutch) (the “Regulations for Professorial Staff”)³. The Regulations for Professorial Staff contain job descriptions for the 3 professorial staff job levels, which are non-exhaustive lists of qualitative objectives, responsibilities and roles: The research goals form a trilogy together with the educational goals and the institutional and social commitment.

This portfolio of research dimensions can serve as an aid when completing and evaluating the “integration text”, “reflection report”, and “evaluation report” templates.

3. Portfolio of research dimensions

Research involves a wide range of activities. This document has separated the highly diverse roles and goals into two main sections: (1) design and development of research and (2) impact of research (scientific, societal and/or economic).

Again, the suggestions listed under the two main sections are neither of a cumulative or limitative nature. Not all elements have to be addressed. Other relevant elements not mentioned in this portfolio can be cited to strengthen one's dossier.

A high degree of “transparency” has been woven into each of the sections: the priorities of Open Science and Responsible Research and Innovation have been taken into account. The portfolio of research dimensions is also in line with the 2017-2021 Research Policy Plan (Ghent University), the vision statement on leadership (Ghent University), the charter for doctoral students and their supervisor (Ghent University) and the researcher profiles as described in the European Commission document (2011): “Towards a European Framework for Research Careers”⁴.

3.1. Integrity and ethics

Ghent University has endorsed the [European Code for Research Integrity of ALLEA-code \(2017\)](#). It therefore expects every researcher to comply with the principles of integrity in research and ensure the compliance of those around him/her. The general principles of scientific integrity apply to all fields of research. In practice, this means among other things that there shall be no tolerance for the fabrication

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https://www.ugent.be/intranet/nl/reglementen/werken/personeel/ap/zap/zap_reglement_20151204.pdf .

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https://cdn5.euraxess.org/sites/default/files/policy_library/towards_a_european_framework_for_research_careers_final.pdf

or falsification of research data or plagiarism. Furthermore, in the goal of increasing the quality of scientific research, “questionable research practices” such as sloppy analysis of data, issues concerned with co-authorship, etc. are to be combated.

In addition to integrity, many ethical principles also apply to research. Special attention is paid to general ethics topics (and related guidelines in certain cases) such as proper use of informed consent, work with paediatric/minor respondents, etc. Application of these principles is complemented in a number of fields, methodologies or contexts by specific legislation such as privacy laws on research in humans, animal research policy, dual use policy for research with possible military applications, etc.

3.2. Design and development of research

VITALITY – reinforcement of research quality and (further) development of a(n) (individual) research entity

Here, the focus is on growth and development. The transformation of a researcher is characterised within the European context for research careers, from “Recognised Researcher” (R2) – researchers with a few years of post-doctoral experience – to “Established Researcher” (R3) – the phase during which the researcher functions autonomously, and then to “Leading Researcher” (R4) – the phase during which the researcher functions internally as a group leader, a role model for other researchers, has a good reputation internationally and when the intrinsic quality of the research increases through experience and insight. There are many challenges to good leadership in research, both within an individual entity (as a group leader) and outside of the university (as a coordinator of international projects).

- Favourable evaluation of applications for research funds from external funding agencies (FWO (Research Foundation Flanders), Europe, foundations, industry)
- International awards and recognitions based on intrinsic research quality, such as ERC Advanced Grant, Francqui Chair, etc. and general or field-specific special recognitions
- Reviews of papers as a peer review expert
- Leading role as an evaluator or expert in the researcher’s field (e.g. panel chair, member of a “high level group”)
- Sustained, outstanding track record in (social) entrepreneurship
- Pioneering role in a spin-off process
- Pioneering role in a scientific organisation
- Publications with an important personal contribution (in peer-reviewed journals, a book publication, peer-reviewed conference proceedings, ...)
- Keynote speeches (by invitation) at prestigious conferences
- Growth of the research group (in FTE, for example)
- Successful doctoral defences as supervisor
- Review articles by invitation in renowned specialist journals

ORIGINALITY

Innovation is a crucial part of research. This component is connected with vitality, but the focus here is more on “innovation” than on “expansion”, such as through the application of new methodologies or the discovery of little known research material. High-risk research is a specific form of originality: a new and often unpredictable research line is developed, in keeping with the aspirations of the research group.

- Development of a new research line within the group
- Recognition within the international research community, such as with an ERC grant or other general or field-specific special recognitions
- International, top-level awards, both general and field-specific
- Appreciation from evaluators/excellent score for originality in applications for research funds from external funding agencies (FWO (Research Foundation Flanders), Europe, foundations, industry)
- Development and testing of new methodologies
- Negative review in a leading journal due to an approach that is too radical or innovative
- Normalised citation impact of SSCI and SCIE publications during the reference period
- Publications in top 5% or 10% journals
- Book publication by an internationally-renowned publisher
- Published negative results
- Successful doctoral defences as supervisor

LEADERSHIP IN RESEARCH

Leadership increases as a researcher builds up more experience and takes on more responsibilities, but the seeds are already planted and developed in the supervision of students, the collegial support of colleagues and design of a research line. Good leadership is recognised within the individual research group and also generates increased visibility outside of the groups.

- Role as a people manager in the design of a research group or research consortium,
- Supervision of employees
- Appropriate management and/or restructuring of the research group
- High-quality supervision of doctoral researchers
- Growth of the research group (in FTE, for example)
- Leading role as an evaluator or expert in the researcher’s field (e.g. panel chair, member of a “high level group”)
- Reviews of papers as a peer review expert

- Pioneering role in a spin-off process
- Pioneering role in a scientific organisation
- International awards and recognitions for high-level research, such as ERC advanced grant, Francqui Chair, etc. and general or field-specific recognitions
- Keynote speeches (by invitation) at prestigious conferences
- Successful doctoral defences as supervisor
- Research budget obtained in the previous 5 years

INTERDISCIPLINARITY

“Interdisciplinarity” is understood as: the various degrees and types of collaboration within the individual field⁵. This includes cross-, multi-, inter- and transdisciplinarity. Many studies build on the definition of Giddens (1991): “Interdisciplinary research is a mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or field of research practice.”

The degree of integration between different fields may vary. In the most limited form, one field or one colleague can “lend” specific expertise to another field/colleague; in the most integrated form, the researchers and field have a “double spine” and the exchange of expertise is equally high in both directions. When this integrated form becomes assimilated over time, a new, independent field sometimes develops (e.g. biochemistry, political history) with a corresponding self-evident specific methodology, and is thus no longer considered as an integrated interdisciplinary field but as a new, recognisable field with its own identity.

“Opening up” the research process to other fields requires that the researchers be open to and curious about the expertise of others and seek out innovation through this confrontation.

- Sharing of research infrastructure
- Management of and involvement in an interdisciplinary research group
- Detailed strategy for the interdisciplinary approach in the researcher’s own research environment
- Implementation within the researcher’s own research group of an “Open Science” culture towards other fields
- Contribution to interdisciplinary journals or specialist journals
- Joint publications with colleagues in other fields

⁵ <https://www.ugent.be/intranet/nl/op-het-werk/onderzoek-onderwijs/onderzoek/beleid/interdisciplinair.htm>

- Joint doctoral projects with colleagues in other fields (including Ghent University interdisciplinary doctorates)
- Joint applications for research funding with colleagues in other fields

INTERNATIONAL COLLABORATION

Researchers function in an international scientific context: they keep up-to-date on international developments via the literature and conferences in their field and share their own research results internationally through those same channels. International collaboration goes one step further than international communication.

Effective international collaboration leads to joint projects and publications and is therefore a means to contribute to increased scientific quality and a larger impact. Collaboration can also take place at the policy level, through the management of international scientific organisations, for example.

Doing this well requires a high level of investment in terms of preparation, management and follow-up. This includes in particular new collaborations or the growth and reinforcement of existing collaborations. This can be done through existing or new opportunities and funding channels (e.g. VLIR-UOS (Flemish Inter-University Council-University Development Cooperation), European framework programmes, CERN, etc.)

- Leading role in international scientific organisations, such as member of the organising committee of an internationally-renowned conference
- Management of an international research project (e.g. VLIR-UOS, EU,...) or research applications as a member of international consortia
- Research funding obtained from international sources
- New bilateral collaboration projects
- Development, continuation and reinforcement of an international network for high-quality collaboration and exchange
- Publications in the context of international collaborations
- Joint doctorates
- Supervision of international exchange doctoral students
- Patents with international co-applicants

ACADEMIC COMMITMENT

External academic commitments in the form of value-building activities are already summarised in the “social and economic impact” section. There are also other types of commitments that have little or no relation to the researcher’s own specific research expertise or possible applications of his/her research, but that are an extension of the role of a researcher in general. Academic commitments can include activities which contribute to the efficient operation of the university in the area of research (e.g. membership on the Research Council of the researcher’s university) or activities that contribute to policy-making in the area of research or innovation in Flanders, Belgium or Europe or to the regional, national or international management of leading organisations in the researcher’s own field. These activities require a substantial time investment but improve the profile of Ghent University. In this type of role, membership or function, institutional affiliation with Ghent University is generally either a necessity (as a representative of the university) or added value (when affiliation with the university increases the credibility and authority of the external mission). In some cases, there is not a clear distinction between forms of academic commitment relying on general expertise on the one hand and the social valorisation of research on the other.

- Membership in an FWO (Research Foundation Flanders) selection committee
- Participation in research-related policy committees outside of Ghent University – at the inter-university, Flemish, national or international level (e.g. VLIR (Flemish Inter-University Council), KVAB (Royal Flemish Academy of Belgium for Science and the Arts), the National Young Academy, VARIO, European Commission,...)
- Leading role as an evaluator or expert in the researcher’s field (e.g. panel chair, member of a “high level group”)
- (Co-)authorship of reports or opinions on research or innovation policy
- Leading or strategic role based on the researcher’s own general research expertise, for example in Data Protection Authority, the Belgian Federal Agency for Medicines and Health Products, an international scientific association, ...
- Membership in external assessment committees

3.3. Scientific, societal and/or economic impact

This section mainly concerns the achievements of innovative research, such as the influence on other researchers, the discovery of a new research field, recognition by the international research community (= scientific impact), etc. on the one hand, and the demonstrable contribution that this excellent research makes to the society and the economy on the other.

SCIENTIFIC IMPACT

The scientific impact of research is closely tied to but synonymous with the intrinsic quality of the research. Scientific impact refers to the demonstrable contribution of high-quality research to the work of fellow scientists: a contribution to conceptual changes within the researcher's own field or to the advancement of scientific, methodological and theoretical ideas within the researcher's own field and other fields. Therefore, the intrinsic quality of some excellent research is high, but the research nevertheless has little effect on the work of colleagues.

In biomedicine and the natural sciences today, citations in scientific journals are the most easily demonstrable form of scientific impact; citations in turn generate a wide range of possible bibliometric indicators that further clarify the various aspects of the impact. There are also a host of other at least as important forms of scientific impact that can be more difficult to illustrate.

Making science "open" to fellow scientists via open access to publications and open and data and data management according to the principles of FAIR (findable, accessible, interoperable, reproducible) increases the scientific impact of researchers. In an open environment, results are more easily accessible to fellow scientists, research is can be reproduced by other fellow scientists and the research process more closely follows the principles of scientific integrity and ethics.

- Keynote speaker at the most renowned conferences in the field
- Edition/circulation of a book publication by a renowned academic publisher
- Editor (by invitation) of a special issue of a journal or scientific book series
- Member in or chair of assessment or evaluation committees outside of Ghent University
- Scientific recognition or award for making a paradigm shift in the field
- Number of downloads of (open access) papers
- Number of users/downloads of (open) datasets
- Normalised citation impact of SSCI and SCIE publications during the reference period
- Highly cited papers
- Recognition as a Highly Cited Researcher

SOCIETAL AND/OR ECONOMIC IMPACT

Societal and/or economic impact is the demonstrable contribution made by excellent research to society and the economy. This is a demonstrable effect or a demonstrable change or benefit:

with respect to the activities, conduct, awareness, clout, opportunities, policy, uses and processes and/or understanding of;

of a wide range of stakeholders – from a community to organisations and individuals;

at every geographical level (local, regional, national, international).

Societal impact is based on sustainable partnerships and the exchange of knowledge in both directions. It is the result of an incremental process of [\(various\) value creation activities](#) (ranging from co-creation to scientific communication, etc.) that can be built into the various phases of the research life cycle.

Economic impact is aimed at the valorisation of knowledge and technology for an economic purpose, ranging from cooperation contracts with partners from industry to the marketing of intellectual property via patents, licenses and spin-offs, and stimulating entrepreneurship within the research team⁶.

A societal or economic impact also includes “services” in the (narrow) sense of: “making the research expertise or research infrastructure available upon request by external parties and for the benefit of external parties”, as described in the Higher Education Codex, Article IV, 71 - the legal reference framework.⁷

Making science “open” to fellow scientists and to non-academic society is an important part of a focus on social impact. After all, science is in large part funded with public funds. It is therefore logical that society be allowed to be involved in the research process as much as possible (opening up the research to users, patients and the public) and have access to the research data and results (opening up the results to fellow scientists and the general public). Private-funded research, on the other hand, often requires secrecy, although cooperation with industry is increasingly being conducted in a context of open innovation. These principles of openness and confidentiality do not contradict each other: depending on the context, quality research is “open where possible and secret where necessary”.

- Development of a valorisation strategy for research results
- Preparation/creation of spin-offs

⁶ cf. Strategic plan for IOF (Industrial Research Fund) and Interface activities

⁷ “all services for third parties provided for a fee by the departments of a university or a college or individuals associated therewith in the exercise of their mission at the university or college and arising from knowledge, scientific results or [practice-oriented scientific research] or technology present at the university or college”.

- Creation of an endowed chair
- Being part of an IOF (Industrial Research Fund) business development centre as a steering committee member with a contribution to valorisation work
- Research projects in collaboration with non-academic partners (industry, government, private non-profit, etc.), strategic basic research projects, policy-related research projects, etc.
- Setting up interdisciplinary innovation platforms or clusters that jointly federate different research groups
- International public profile in terms of influencing professional practice and policy
- Circulation/distribution of a book publication with a general publisher (other than compulsory course material)
- Research projects in collaboration with partners in developing countries
- Development of a training package or awareness campaign (within or outside Ghent University, or for example in the context of research collaborations and/or development projects with academic partners in the South)
- Structural cooperation with Ghent University public platforms (GUM, Krook, etc.)
- Structural involvement of research stakeholders (living labs, co-creation processes, citizen science, etc.)
- Strategic approach for communication via public media (e.g. opinion pieces, blog posts, contributions to Wikipedia, ikhebeenvraag.be, etc.)
- Participation in Open Innovation projects
- Patent applications submitted and patents granted
- Clinical studies
- Participation (organisation, keynotes, etc.) in relevant public events, stakeholder events, Science Communication, Science Shop activities, etc.
- Manuals for schools and other education providers
- Organisation of an exhibition/show
- Number of policy reports and opinions
- Altmetrics