This document contains instructions for completing the Research Unit specific RAE2020 self-evaluation + scientific action plan form. Please submit the form and appendices as one aggregated document (Name of research unit.PDF) to the Registry Office of the University of Oulu (kirjaamo@oulu.fi) by 15.05.2020.

RAE2020 (Research Assessment Exercise 2020) at the University of Oulu supports Research Units (RUs) in identifying their research strengths, weaknesses and development potential and in defining the most urgent and relevant measures needed for improvements in the working environment and to reach their full potential in scientific research. The RAE also provides the University with an overview of its research activities and the results will be used to develop these activities further.

The starting point for RAE2020 is the preparation of a critical Self-Evaluation and a Scientific Action Plan (hereafter jointly Self-Evaluation Report) by each RU. RUs are encouraged to engage academic staff from all research career stages in the process to ensure multi-voiced views on research development. Please note that preparing the Self-Evaluation Report is a demanding process – sufficient time must therefore be set aside for it by the RU.

Three international evaluation panels are invited to evaluate and give feedback to the RUs on their Self-Evaluation Report. Please note that the external expert panels will use the Self-Evaluation Report, bibliometric analyses and the face-to-face meeting with the RU as information sources when evaluating the state of the research and research environment and the proposed development actions. When writing your Self-Evaluation Report, keep in mind that the expertise areas of the multi-disciplinary panel members may not correspond precisely to the disciplines of the University.

When considering the topics of the Self-Evaluation Report, please do not only focus on the outcomes of the RU but also describe relevant actions, e.g. researcher recruitment. The evaluation period of the Self-Evaluation Report is from 2013 onwards.

Support your conclusions by referring to the results from the bibliometric analyses, other aggregated statistical data for the RU, and any other information source that you find relevant. Please focus on the level of the RU. The maximum length of text per topic is specified as either 0.5, 1.0 or 3 pages. This document contains instructions for filling in the RU-specific form. The latter RU-specific form contains pre-filled parts and fields to be filled in by the RU. The required font is Calibri body, font size 12 pt and line spacing 1.15. All bibliographic references in the Scientific Action Plan part must be added directly to the text in the format: Author(s) Year (not as footnotes). The maximum length of the whole Self-Evaluation Report is 15 pages.


FOLLOW-UP of the RAE2020 Self-Evaluation: Follow-up of realization of the feedback from the evaluation panels and the research development plans will be conducted 1–2 years after the RAE2020.
SELF-EVALUATION AND SCIENTIFIC ACTION PLAN TEMPLATE FOR RESEARCH UNITS

Name of RU: [Pre-filled]
Director of RU: [Pre-filled]
University focus area: [Pre-filled]
Profiling area (if applicable): [Pre-filled]
Web page(s) representing the RU: [Write here]

GENERAL PUBLIC DESCRIPTION OF THE UNIT
Describe the topics and the significance of the research from the perspective of science and society and the site(s) of the research (max. 1000 characters excluding spaces).

[Write here]

1. BASIC INFORMATION
1.1. Profile and organization (max. 1 page)
Describe in brief the RU's current profile and organization:

A. Outline the scientific profile.

[Write here]

B. Provide a concise description of the RU's organization and composition (leadership and management practices, research groups, disciplines, sub disciplines, joint positions with other organizations).

[Write here]

C. Specify possible national and international tasks, roles and responsibilities of the RU that have an effect, e.g., on its priorities for research targets or resource allocation.

[Write here]

D. Provide a short summary of the RU's organizational history, including the main changes since 2013 and in the near future.

[Write here]
1.2. Key figures
Key indicator information on personnel, funding, publications and other academic achievements

A. Pre-filled table: Key indicator information on personnel, funding and publications (provided by the administration)

<table>
<thead>
<tr>
<th>Academic Staff in 2019</th>
<th>XX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professors</td>
<td>X</td>
</tr>
<tr>
<td>Senior Researchers</td>
<td>X</td>
</tr>
<tr>
<td>Post docs</td>
<td>X</td>
</tr>
<tr>
<td>Doctoral Students</td>
<td>X</td>
</tr>
<tr>
<td>On personal grant</td>
<td>X</td>
</tr>
<tr>
<td>In teaching only</td>
<td>X</td>
</tr>
</tbody>
</table>

Of these:
- Principal Investigators | X
- Title of Docent | X

<table>
<thead>
<tr>
<th>Competed Research Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>National, €/year</td>
</tr>
<tr>
<td>International, €/year</td>
</tr>
</tbody>
</table>

**Total Funding, €/year**: XX

**Scientific Publications**: XX

Staff, head count 2019

Funding and publications, 2016 - 2018 mean

Total funding: basic funding from Ministry of Education and Culture, competed research funding and other supplementary funding

Scientific publications: peer-reviewed scientific articles & scientific books

B. Information on other academic achievements (max. 0.5 page)

List the RU’s other major academic achievements (e.g. Academy of Finland Flagship and Centres of Excellence, and Academy professors, ERC- and other major EU-funded projects, patents, major awards, open access data, reagents, software, intellectual property and datasets, tasks in national and international academic boards).

[Write here]

1.3. Scientific and societal impact

A. Scientific impact (max. 0.5 pages)

Describe the main scientific achievements of the RU since 2013, e.g. breakthroughs, paradigm shifts, new theories and new methods.

[Write here]

B. Societal impact (max. 0.5 pages)

Describe the societal impact of the RU. Societal impact may constitute various contributions, e.g., as described in the Academy of Finland’s STATE OF SCIENTIFIC RESEARCH IN FINLAND 2016 (see pages 5 – 10...
2. REFLECTIVE ANALYSES

Section 2 identifies structures and processes that characterize the RU and facilitate high quality research. When applicable, please refer to data aggregated for the RU, bibliometric data, and any other evidence. You may consider the following questions in relation to each factor:

- How is the RU currently working to achieve high-quality research and renewal?
- What strengths and weaknesses do you see in the RU’s current performance and approaches?

In what ways could the RU’s current approach be further improved? Are there any ongoing or planned new initiatives?

Does the RU need further support (administrative support, removal of administrative barriers, etc.)?

**Focus primarily on what is within the RU's immediate reach and control, i.e., on what can be done – and improved – by the RU itself.** In addition, the RU may suggest changes that have to be decided upon – or made – at other levels within the University (e.g. Faculty or University level), and/or by external bodies (e.g. changes in government regulations and research council procedures).

2.1. Assessment of the RU’s current output, collaborations and environment

Describe in 2.1. the strategies for publication, competitive funding, collaborations and infrastructures.

2.1.1. Publications – refer to the RAE2020 bibliometric analyses (max. 1 page)

**A. Description of publication strategy.** Selection of publishing venues. National and international publishing. Open access publishing. Follow-up of the development of RU’s publication patterns. How does the RU encourage and facilitate researchers in applying open science principles and practices such as open publishing and making data, material, metadata and methods widely available for reuse?

[Write here]

**B. Analysis of bibliometric data.** Comment on the RU’s research output based on bibliometric data with regard to productivity, citations, and publication channels. Noticeable changes over time? Potential for improvement?

[Write here]

2.1.2. Competitive funding (max. 0.5 page)
Describe the RU’s current strategy for obtaining external research funding and the current overall funding situation. What are the RU’s plans to secure a sufficient level of external funding in the future?

[Write here]

2.1.3. Collaborations (max. 1 page)

A. Collaboration and networks with other universities and research institutes. Which are the RU’s and its groups’ most important national and international collaboration partners, and how are they maintained?

[Write here]

B. Internal collaborations within the University of Oulu. What collaborations are ongoing between the RU and its research groups and other RUs at the University of Oulu? Describe also internal collaborations within the RU. How will the RU develop these activities further?

[Write here]

C. Non-academic collaboration and public outreach activities (See 1.3.). What are the RU’s most important collaboration partners outside academia (e.g. companies, municipalities, hospitals)? How is the RU currently working to establish and maintain such collaboration and networks? How does the RU realize wider dissemination of research results to the rest of society? What are the RU’s current approaches to stimulate public outreach activities/knowledge utilization/innovation? How will the RU develop these activities further?

[Write here]

2.1.4. Research infrastructures (max. 0.5 page)

How is the RU currently working to maintain and develop the research infrastructures it needs (e.g., instruments, tools and supplies, support staff)? Does the RU use or contribute to university-level, national or international research infrastructures? How does the RU and its research groups manage research data? Suggestions for improvements?

[Write here]

2.2. The RU’s academic culture, structures and processes

In section 2.2., consider how the RU is currently working to nurture a culture that is conducive to high quality research and renewal, e.g., regarding intellectual interaction, collegiality, equal opportunity, creativity, ambition, scientific conduct, research integrity? How do you ensure that all researchers in the RU, including early stage researchers (doctoral students and postdocs), are well familiarized with and follow the principles of responsible conduct of research, ethical principles, and legislation relating to their research? Suggestions for improvement?

2.2.1. Research leadership (max. 0.5 page)
A. **Research Unit level.** Describe how research leadership and communication is organized in the RU, including the roles of individual research group leaders, etc. Suggestions for strengthening research leadership?

[Write here]

B. **Faculty/Focus Institute/University level.** How do you perceive that the leadership at the Faculty/Focus Institute/University level works to support high-quality research and renewal? Strengths and weakness of approaches? Suggestions for improvement?

[Write here]

### 2.2.2. Recruitment (max. 0.5 page)

How do the current recruitment processes aim to ensure high-quality research, renewal and maintaining a critical mass at all stages of the research career in the RU (e.g., attracting top-level researchers and teachers, opening new fields of research and balanced recruitment also from outside the University of Oulu)? Are internal career opportunities aimed at attracting and retaining talented researchers being offered? How are equal opportunities of potential applicants ensured? Suggestions for improvement?

[Write here]

### 2.2.3. Career and mobility (max. 0.5 page)

How is the RU currently working to support researchers to sustain their active career paths, to promote career development and to stimulate mobility (researchers in all career stages)? What support does the RU offer for international collaboration that might boost career development? How are equal opportunities ensured for all researchers of the RU? Suggestions for improvement?

[Write here]

### 2.2.4. Doctoral education (max. 0.5 page)

A. How are doctoral students recruited and selected in the RU? Describe the practices of agreeing on research topics and questions for doctoral thesis work.

[Write here]

B. What is the role of doctoral students in the research of the RU? How do you integrate the doctoral students into the community and research activities? How do doctoral students receive feedback about their progress?

[Write here]

### 2.2.5. Research-teaching linkages (max. 0.5 page)

How is the RU currently working to create links between research and teaching in order to improve student learning and research quality? Suggestions for improvement?
2.2.6. Feedback and evaluation in the RU (max. 0.5 page)

How is the RU currently carrying out follow-up and evaluation of the research environment and research outcomes? Are individual researchers given formal or informal feedback on their performance? Suggestions for improvement?

2.3. Other information (max 0.5 page)

Please state below if there are matters of relevance to research quality and renewal that have not been covered above, i.e. themes at the RU level that are important aspects of the preconditions and processes for high-quality research that are central to the RU.

3. SCIENTIFIC ACTION PLAN: Future research strategy and impact of the RU for 2020 – 2025 (max. 3 pages)

Describe the research strategy and evaluate the future research potential of the RU. Based on your answers to the guiding questions, list a maximum of five of the most important development targets in the research activity of the RU. If the RU has taken measures or is planning measures for realizing these targets, please give a short description of them.

Take into consideration the University of Oulu and Faculty strategies, focus areas, and scientific profiling areas in the future goal description. Consider also which of the United Nation’s Sustainable Development Goals (https://www.un.org/sustainabledevelopment/sustainable-development-goals/) the RU’s research can meet.

Guiding questions:

- What are the future research goals of the RU, including current plans for new research initiatives (major new projects, etc.)?
- Where do you aspire to be in 6 years’ time with your research? What are your goals for publishing (and other research outputs) and how will these goals be achieved?
- Which aspects of the RU’s research environment are assets that should be further strengthened, and what should be changed?
- What is the expected societal impact of the RU?
- Assess the possible risks associated with implementing the RU’s research strategy.
4. ORGANIZATION OF WORK INVOLVED IN COMPLETING THE SELF-EVALUATION (max. 0.5 page)

Describe briefly how the RU has organized the work involved in completing the Self-Evaluation and Scientific Action Plan.

[Write here]

APPENDICES: RESEARCH GROUP LEADERS’ AND/OR PRINCIPAL INVESTIGATORS’ CVs AND A SELECTED LIST OF UP TO 20 PUBLICATIONS FOR THE ENTIRE RU

The CVs and publication list should be compiled according to the instructions of the Academy of Finland.

The CV should be no more than three pages.

The publication list should represent the RUs activities from 2013 onwards and the maximum number of publications to be included is 20. A similar list was submitted at the pre-registration stage. Please revise the list if needed and submit it as an appendix to the Self-Evaluation Report.