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The Norwegian approach

NOR-CAM - A framework for assessment of academic careers in the Open Science Era

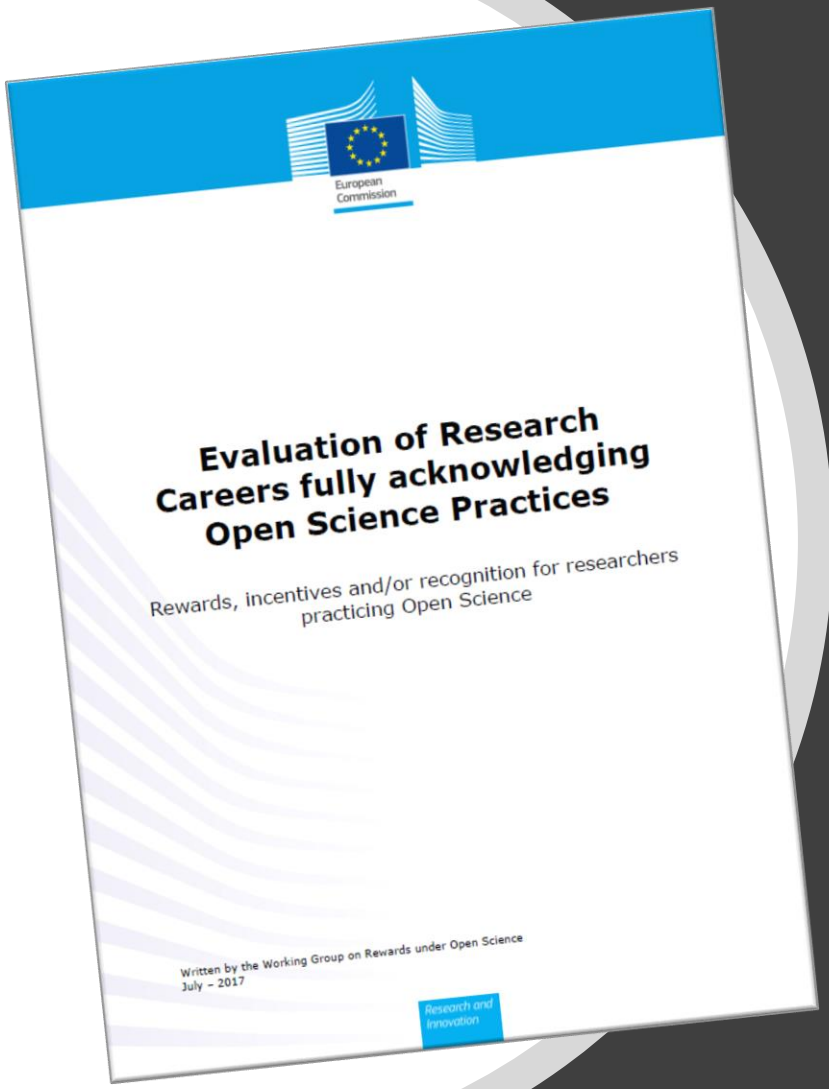
A need for change in how we assess researchers because:

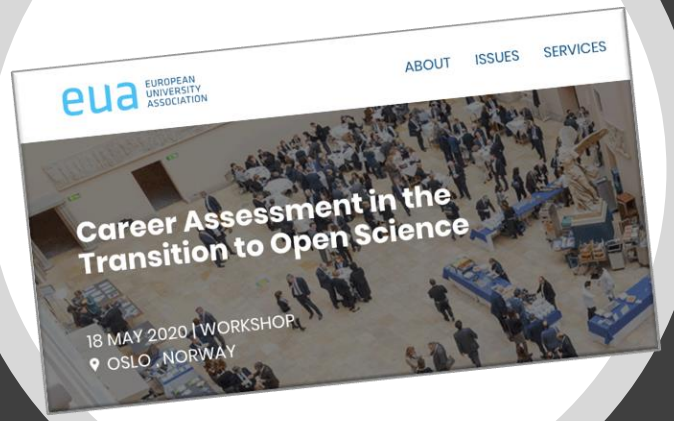
- Open Science
- Assessing and recognising a greater breadth of competencies
- The need to reduce and modify the reliance on quantitative publication metrics (DORA)
- Make it clear what gives merit (particularly for younger researchers)

Members of the Working Group

- Finn-Eirik Johansen, UiO (chair)
- Kikki Flesche Kleiven, UiB
- Tor Grande, NTNU
- Alexander Refsum Jensenius, EUAs expert committee for Science 2.0/Open Science
- Katerini Storeng, Academy for Young Researchers (Norway)
- Rune Rambæk Schjølberg, Research Council of Norway
- Gunnar Sivertsen, R-Quest, NIFU

Secretariat: Herman Strøm og Ragnar Lie, UHR





International inspiration

A new research assessment framework should:

Six principles

1. Measure quality and excellence through a better balance between quantitative and qualitative assessments
2. Recognise several competencies as merits, but not expect fulfilment in all areas by each employee
3. Assess all results, activities and competencies in the light of Open Science principles. Quality in all areas!
4. Practice transparency in the assessment and visibility of what should be recognised as merit
5. Promote gender balance and diversity
6. Assist in the concrete practice of job vacancy announcements and assessment processes locally

NOR-CAM - Norwegian Career Assessment Matrix

Column 1:
Six competence areas to be assessed

Column 2:
Examples of results and competences

Column 3:
Documentation

Column 4:
Reflection

1. Area of competence	2. Results and competencies (examples)	3. Documentation	4. Reflection
A. Research output	-Published works -Datasets -Software -Methodologies -Artistic results -Research reports	CRIS systems (e.g. Cristin) and other databases	Reflection on the relevance and quality of the results. Emphasis is placed on open access to published works and other results, as well as whether the data adhere to the FAIR principles.
B. Research process	- Leadership and participation in research groups -Working across disciplines - Research integrity/RRI - Editorial activity - Peer reviews - Building consortia - External funding - Development of research infrastructure -Leadership and participation in clinical trials	CRIS systems and other databases. Narrative CV system with links to source data.	Reflection on roles and relevance. How and why various actors within and outside academia have been involved in the research process. Emphasis is placed on transparency in the research process.
C. Pedagogical competence	- Planning, execution, evaluation and development of lectures and supervision of students - Participation in the development of educational standards in academic communities - Mentoring - Devising and sharing learning materials	CV system with links to source data. Institutional registration of lecturing activity. Pedagogical portfolio.	Reflection on formal and informal competence and experience. Emphasis is placed on open education and the sharing of educational resources.

1. Area of competence	2. Results and competencies (examples)	3. Documentation	4. Reflection
D. Impact and innovation	-Innovation -Entrepreneurship and commercialisation -Social innovation -Innovation in the public sector -Citizen science -Textbooks -Publishing activity -Research reports and studies -Application of research in public administration and industry	CRIS systems and other databases. Altmetrics. Narratives and impact stories. Patents and licences.	Reflection on the relevance and effects of activities for society, as well as external contributions to research. Sharing of research and educational results with the general public and others.
E. Leadership	-Institutional and departmental leadership -Leadership in academic networks and projects -Leadership outside academia -Leadership in panels and other committee work	CV system with links to source data, CRIS systems and other databases, narratives.	Formal and informal leadership, reflection on roles, processes and effects. Contribution to strategies and policy development in relation to open science.
F. Other experience	-Experience and competence from sectors outside academia. -Courses and discipline-related development work.	CV system with links to source data.	Reflection on how these experiences contribute to the competence in general.

1. Area of competence	2. Results and competencies (examples)
A. Research output	-Published works -Datasets -Software -Methodologies -Artistic results -Research reports

The four columns of NOR-CAM

1. Six areas of competence to be assessed

A. **Research output**
B. **Research process**
C. **Pedagogical competence**
D. **Impact and innovation**
E. **Leadership**
F. **Other experience**

“Automagic CV”

- A CV-system that retrieves data from different national (and international) sources would reduce workload both for institutions and individuals

Who does what?

- **Universities and research institutions:**
  - ✓NOR-CAM and the principles behind it should be supported by the institution's management and be incorporated into the institution's career and HR policy.
- **Funders:**
  - ✓Use NOR-CAM as a basis for assessing applicants and project participants' competencies when assessing research projects.
- **Academic staff:**
  - ✓Use NOR-CAM to document achievements and competencies with components from the entire range of academic activities.

Not going it alone

- Research and academic activity are international by their very nature
- Changes in the assessment criteria cannot be made by one country alone