Seven good reasons for RAI 2018:

Identify and assess Aalto’s
• Quality and potential
• Multidisciplinary collaboration
• Impact and innovative capacity
• Spearheads and emerging strengths

... and to provide
• National and international positioning
• Aalto brand strengthening
• Cases and evidence
RAI 2018: Nine Assessment Fields, Thirty Units of Assessment:

Five disciplinary fields (departments)
1: Arts, design and architecture
2: Business and economics
3a: Chemical engineering and physics
3b: Engineering
4: ICT and mathematics

Four multidisciplinary “ecosystems”
5: Energy
6: Health and wellbeing
7: Living environment
8: Innovation ecosystem
RAI 2018:

Who?

Panelist countries of origin

Nine Assessment Fields chaired by:

1: Arts, design and architecture
   - Paul Seawright
     University of Ulster
     UK

2: Business and economics
   - Marno Verbeek
     Rotterdam School of Management
     Netherlands

3a: Chemical engineering and physics
   - Heiner Linke
     Lund University
     Sweden

3b: Engineering
   - Kamal Sarabandi
     University of Michigan
     USA

4: ICT and mathematics
   - John Lafferty
     Yale University
     USA

5: Energy
   - Paulien Herder
     TUDelft
     Netherlands

6: Health and wellbeing
   - Arno Villringer
     Max Planck Institute
     Germany

7: Living environment
   - Peggy Deamer
     Yale School of Architecture
     USA

8: Innovation ecosystem
   - Susan Marlow
     Nottingham University Business School
     UK
**Why now?**

**Four good reasons for RAI 2018:**

- Assessment of Aalto first decade
- Input for next Aalto strategy (previous strategy period ends 2020)
- Input for Ministry of Education and Culture negotiations for next period 2020-2023
- Strong development of campus and innovation ecosystem
Assessment Field Chairs and Panelists
Field 1: Arts, design and architecture

Paul Seawright (Chair) University of Ulster UK Web page

Peggy Deamer Yale School of Architecture USA
Web page

Paul Gough RMIT University Australia
Web page

Kees Dorst University of Technology Sydney Australia Web page

Manuel Damásio University of Lusófona Portugal
Web page

Susan Kozel Malmö University Sweden
Web page
Field 2: Business and economics
Field 3a: Chemical engineering and physics

Heiner Linke (Chair)
Lund University
Sweden
Web page

Emiel Hensen
TU Eindhoven
Netherlands
Web page

Arno Villringer
Max Planck Institute
Germany
Web page

Daniel Loss
University of Basel
Switzerland
Web page

Pär Jönsson
KTH
Sweden
Web page

Jan Lagerwall
University of Luxembourg
Luxembourg
Web page

Robert Pelton
McMaster University
Canada
Web page

Lisbeth Olsson
Chalmers University of Technology
Sweden
Web page

Erling Halfdan Stenby
DTU
Denmark
Web page

Aalto University
Field 3b: Engineering

- Kamal Sarabandi (Chair)
  - University of Michigan
  - USA
  - Web page

- Carlos Guedes Soares
  - IST Lissabon
  - Portugal
  - Web page

- Rachelle Alterman
  - Israel Institute of Technology
  - Israel
  - Web page

- Daniel Loucks
  - Cornell University
  - USA
  - Web page

- Marcian Cirstea
  - Anglia Ruskin University
  - UK
  - Web page

- Phill Dickens
  - University of Nottingham
  - UK
  - Web page

- Ragnar Larsson
  - Chalmers University of Technology
  - Sweden
  - Web page

- Paulien Herder
  - TUDelft
  - Netherlands
  - Web page

- Oliver Brand
  - Georgia Tech
  - USA
  - Web page

- Jan Wikander
  - KTH
  - Sweden
  - Web page

- Choongsik Bae
  - KAIST
  - South Korea
  - Web page

Aalto University
Field 4: ICT and mathematics

John Lafferty (Chair)
Yale University
USA
Web page

Mutry Calder
University of Glasgow
UK
Web page

Marta Kwiatkowska
University of Oxford
UK
Web page

Maria Sabrina Greco
University of Pisa
Italy
Web page

Thushara Abhayapala
Australian National University
Australia
Web page

Susanne Boll
University of Oldenburg
Germany
Web page

Sjaak Brinkkemper
Utrecht University
Netherlands
Web page

Marta Sanz-Sole
University of Barcelona
Spain
Web page

Andrew Odlyzko
University of Minnesota
USA
Web page
Feedback
FIELD 1: Arts Design & Architecture

Paul Seawright (Chair), Paul Gough, Susan Kozel, Kees Dorst, Manuel Damasio, Peggy Deamer
Arts Design & Architecture

Excellent International Level of research and artistic work

Has all the characteristics of a world leading unit – exemplary infrastructure, research outputs, impact, faculty, institutional support, international partnerships, global brand, artistic leadership nationally in Art, Film, Design and Architecture.
“Our disciplines are facing an unprecedented tidal wave of change and transdisciplinary opportunity. Aalto will lose its global position if it doesn’t develop a focused and integrated strategy for the full range of creative disciplines – targeting the highest level collaborative research partners and projects both within and beyond the University”
Feedback

General Feedback to Aalto University Leadership

- Develop the Vice President of Art and Creative Practices role to lead strategic development of multidisciplinarity, sector/government engagement and leadership in the creative industries.

- We were not convinced that the current management of research and department heads is sufficiently strategic, particularly horizontal engagement across Schools – revised approach to bottom up and top down strategic planning and implementation.

- Expand the joint professorships initiative. Speed up appointment process to remain competitive.

- Establish a stable situation for UWAS integrating it fully across Aalto (and other JSIs).

- Develop a mentorship and research induction programme to support international staff on appointment.
Feedback

General Feedback to Aalto University Leadership

- Develop a clear research strategy for Aalto Studio.
- The panel recognises that the University is pioneering the situation of art and creativity at the centre of the institution strategy. Gives Aalto a competitive edge and is a key factor in attracting new international staff and international research collaborations.
- Platform support: Consider how best to support transdisciplinary projects in the transition from a seed funded initiative to an established project, centre or programme – who owns the initiative?
- Develop (or adopt existing) subject level benchmarks for research funding and evaluate performance against subject norms. Develop mechanism to capture soft funding for artistic research.
FIELD 2: Business & Economics
Panel members

Marno Verbeek (chair)
Peter Norman Sørensen
Jonathan Wareham
Thorsten Hennig-Thurau
Salvador Carmona

Randi Lunnan
Susan Marlow
Steve Brown
Feedback

Field 2: General observations

- Aalto brand is very strong. Impressive developments over past years.
- Large degree of internationalization, mostly at junior levels. Quality attracts quality. Faculty turnover.
- Attractive working environment, healthy work-life balance, good internal culture, low degree of hierarchy.
- Attractive teaching packages.
- Good students, makes teaching very rewarding.
- Access to high-profile empirical data.
- Opportunities for interdisciplinary work on societal challenges. New campus.
Feedback

General Feedback to Aalto University Leadership

- Appreciate uniqueness of Business and Economics and international environment business school operates in.
- Appreciate and support infrastructure demands from B&E.
- Tenure track system generally applauded.
- Allocation of slots, and procedure of tenure/promotion decisions.
- Creation of slots could be less stringent and a bit more entrepreneurial/dynamic.
- Scientific integrity, professionalism, data management: awareness and procedures.
- Balancing of multidisciplinary focus against disciplinary work.
FIELD 3a: Chemical engineering and physics
Feedback Observations

Field 3a

- High level of excellence in many areas.
- Tenure-track system is used in a very positive way for renewal and internationalisation
- Very good infrastructure
- High level of enthusiasm among PhD students and younger faculty
- Very positive atmosphere with respect to collaboration, open exchange of ideas, and sharing of equipment.
- Excellent interaction with industry; strongly engaged stake holders
Feedback

Recommendations 1

Field 3a

- All departments should develop and articulate a longer term strategy, as well as define measures of performance with annual review.
- Across the field, more attention needs to be paid to gender balance and equality.
- Enhanced interaction between CMET with CMAT could help reach critical mass targets and with the potential to excel in both excellence and impact.
Field 3a

Recommendations 2

• Regarding PhD students: introduce ombudsman; increase PhD course offerings; remove bottlenecks in pedagogical training.

• Seed funding: make more broadly available

• Consider balance between lecturers and tenure-track positions

• Establish platforms for sharing of best practices between departments (mentoring, industry collaboration, culture to attract ERC grants, equipment sharing, …)

• Recognition and incentives. Consider awards (teaching, support, method development, research…. ). Seed funding could be one element (“new ideas award”).
Feedback
Panel 3a

General Feedback to Aalto University Leadership

- Very positive sense of desire to develop Aalto to its best potential, at all levels.
- Who has the mandate to develop research strategy above the individual faculty level?
- Need for a comprehensive strategy with regards to infrastructure and equipment of all sizes.
- Strengthen platforms (or a more focused version of them). Consider identifying university wide grand challenges that Aalto can uniquely address. Is the school structure needed?
- Gender balance and equality
- Ensure implementation of international best practices in tenure track system
- Business school is not visible in multidisciplinary effort
- Recognition and incentives
FIELD 3b: Engineering

Panel Members:

Rachelle Alterman  
Choongsik Bae  
Oliver Brand  
Marcian Cirstea  
Phill Dickens  
Carlos Guedes Soares  
Paulien Herder  
Ragnar Larsson  
Pete Loucks  
Kamal Sarabandi  
Jan Wikander
Observations:

• In general, the departments in Field 3b are in good shape and their progress has a positive trend.

• Throughout our discussions and interviews with senior and junior faculty, lecturers, postdocs, and graduate students, the panel found the research staff in Field 3b at Aalto University are happy about their environment, highly motivated, and enthusiastic about the future of their respective departments and Aalto University.

• This is commendable and is a reflection of proper policies at all levels of management in Engineering and Aalto University.
Feedback

Field 3b Engineering

Recommendations:

1. **Research Strategy:** Develop departmental strategies for research through annual departmental retreats to create a roadmap for departments. This will help identify the focus areas in sub-fields in which the departments can attain international prominence.

2. **External Advisory Board:** Departments should be encouraged to establish external advisory boards that assist the departmental leadership in developing a focused research strategy. Such panel can also help with lobbying, industry collaboration, and alumni fund-raising. Advise of industry brings in a different perspective and is needed in undergraduate and graduate education and ultimately provide a link to industry.

3. **Research Staff Workload:** Make use of an academic work balancing model to achieve an appropriate balance between contributions to teaching and research. Many postdocs who should be focusing mostly on research have significant teaching duties; some lecturers – as teaching staff – are also expected to contribute to research.
Recommendations:

4. **PhD Student Progress Reporting:** Consider introducing a system for regular (annual) evaluation/monitoring of Ph.D. students progress by evaluators external to the supervisory team. This can be done at the departmental level by asking the Ph.D. student and advisor to fill a short and high-level progress report that is signed by both the student and faculty and reported to the Department Chair or Associate Chair for review. This would ensure better (faster) progress of research students research projects and should lead to earlier completion of their PhDs, thus also saving costs.

5. **Integrated Projects:** Projects that integrate BS, MS and PhD students across disciplines, such as the Aalto1 Satellite project should be considered across departments and schools as a way to excite students and involve them in research early, as well as to highlight/market university research.
Recommendations:

1. **Faculty Hiring**: The panel has some concerns with respect to transparency and efficiency of the faculty hiring process at Aalto. In certain cases it appears that the information about approved faculty slots does not reach faculty to provide feedback and assist in the search process.

2. **Formal Mentoring Program and Mid-term Evaluation for Untenured Tenure-track Faculty**: The University should establish a formal mentorship program for the assistant professors to ensure their success.

   - Assign a senior faculty within the department that can regularly meet with assistant professors to provide them with guidance for their workload balance, Ph.D. student recruitment, establishing successful research portfolio, informing them of tenure process and expectations, etc.

   - Also establish a third-year review process for evaluating the progress and trajectory of scholarly activities of assistant professors. Through this process meaningful feedback can be provided to assistant professors in a timely manner to correct for any deficiencies and enhancing their areas of strength.
Recommendations:

3. **Patents, Technology Licensing and Resulting Impact:** In many RAI 2018 assessment reports, the number of invention disclosures were reported as a measure of societal impact. Thus, Aalto should consider monitoring patent applications and patents granted from the invention disclosures, as well as licensing agreements with industry.

   • Mechanisms for monitoring and more quantitative measurement of impact/use of Aalto’s research results in the real world through ‘products’ commercialized by partner companies should be identified.

4. **Impact of Aalto Alumni:** Given that the PhD and Master graduates are considered an important contribution to societal impact the post-graduate occupation of these alumni should be monitored and further used to demonstrate impact.

5. **Emphasis on Publication:** Reduce the strong focus on publications as a performance metric. The overall university CWTS metrics show that while the publication volume has increased over time, the impact (MNCS and MNJS) first increased, but is going down again in later years.
Recommendations:

6. **Science vs Engineering Citations**: A balanced approach should be adopted in terms of recognizing the real impact of high citation number of science papers versus the lower citation number of classical engineering fields.

7. **Multidisciplinary Research**: The university effort in promoting and recognizing the importance of multidisciplinary research is applauded, as is highlighted by the multidisciplinary focus areas (Health & Wellbeing; Living Environment; Advanced Energy Concepts).

   • To lower the barriers and incentivize this type of research, funding multidisciplinary activities from the university level seems important.
   • Cross-cutting themes should be evaluated regularly and adjusted or even bring to closure if needed.
   • Activities of faculty in cross-cutting themes should be balanced against their fundamental research and disciplinary scholarly activities.
FIELD 4: ICT and Mathematics

Committee members:

Thushara Abhayapala
Susanne Boll
Sjaak Brinkkemper
Muffy Calder
Maria Greco
Marta Kwiatkowska
John Lafferty
Andrew Odlyzko
Marta Sanz-Solé
Recommendations in four categories:

Organization, Hiring/Retainment, Diversity, and Multidisciplinary Fields

Many of the recommendations apply at both the Field and University levels.
Feedback

Organization

• Provide better management of departmental records
• Organize departments to better leverage shared research strengths

Field 4 Recommendations
Field 4 Recommendations

Feedback

Hiring and Retainment

- Introduce more streamlined and efficient hiring procedures
- Improve mentoring of junior faculty and post-docs
Field 4 Recommendations

Diversity

- Develop an active recruiting policy
- Practice greater awareness of diversity issues
- Improve mentoring of women in technical fields
- Improve monitoring of activities related to diversity
Feedback General Comments

- Unique history, strengths and profile of Aalto
- Excellent potential for achieving broad and ambitious goals for both research excellence and societal impact
- Overall strength in Field 4
- Enhances international visibility of the University
- Increasingly important at national level, e.g., through Finnish AI initiative
Feedback to Aalto University Leadership

Hiring and Retainment

- Continue and enhance the current tenure system and offer structure
- Study hiring of fixed term staff and instructors
- Introduce more streamlined and efficient hiring procedures
- Provide better support for dual careers (2-body problems)
- Strengthen interface between the departments and administration with respect to hiring
Feedback to Aalto University Leadership

Diversity
(same as for Departments)

- Support an active recruiting policy
- Practice a greater awareness of diversity issues
- Improve mentoring and support of women in technical fields
- Improve monitoring of activities related to diversity
General Feedback to Aalto University Leadership

Multidisciplinary fields

- Provide increased incentives for contributing to multidisciplinary initiatives within academic departments
- Secure increased University-level funding for cross-cutting themes
It has been a true pleasure and privilege for us to learn from you about this remarkable and unique university!
FIELD 5: Energy
Feedback

Field 5
Observations

- A good energy platform with great campus activities, good impact on society and good industrial connections.

- Good examples of multidisciplinary research, evidenced by such papers
- Excellent pockets of research
- National energy research leader with potential for international impact as Platform
- Excellent case studies and interactions with stakeholders in policy and industrial arena’s.
- Creation of an MSc programme delivering multidisciplinary graduates.
- Long standing relationships with industry by Aalto researchers.
Field 5
Recommendations

- The platform has achieved a lot under organizational and budgetary constraints and needs strategy and budget to move forward

- It would benefit from clearer strategy on mission and targets
- Future potential fields are relevant and need further specification and focus.
- Install instruments to support strategy:  
  - Doctoral education  
  - Industrial advisory board  
  - Communication strategy + materials
- Time, choices, endurance, budget and clear commitment of leadership towards an outward-looking and proactive platform.
Feedback to Aalto University Leadership

• The Energy platform is a courageous and important endeavor that should be supported in the future.

• Stimulate the platform to create a strategy and provide clear targets, increase the operating budget.

• Improve embedding by means of commitment/ownership of deans.

• Ensure stronger interaction of departments and platform, e.g. through coordination of TT slots.
FIELD 6: Health & Wellbeing
Feedback

Field 6
General Comments

- Health and well-being is an important and highly competitive topic world-wide and work at Aalto on medical devices & imaging, biomaterials, and digital health builds on some of Aalto’s unique strengths.

- There are many interesting - but still fragmented - activities in this field, with clear pockets of excellence.

- The panel appreciates the formation of the Aalto Health Platform in 2016 with the goals of internal and external “matchmaking” and research coordination; it is premature, to judge synergistic effects at this point.

- While there are some very promising activities e.g., Biodesign, the panel was missing a clear overall enabling structure, personal identification with the field and strategic initiatives.
Feedback

Field 6

Recommendations

The field needs clearer definitions of synergistic research goals which may guide e.g., seeding opportunities, hiring recommendations, equipment acquisition.

As enabling mechanisms one may consider:
- (more) seed funding for joint projects of Aalto with HUH or within Aalto
- joint acquisition of equipment with HUH
- joint professorships (or even joint research units) of Aalto with the University hospital and/or University of Helsinki
- Joint doctoral programs (e.g., a joint MDPhD program) between Aalto and HUH

Adequate funding and management structures are necessary for these mechanisms and to meet the overall goals of the health platform.

We recommend proactive mechanisms to achieve gender balance.
FIELD 7: Living Environments
Field 7
Recommendations

Too young/too early
It is unfair to evaluate this Platform after only 2 years. Living + needs time to develop, especially for social vs scientific impact.

Remarkable potential
This platform is truly social, offering a window on the world for the departments.

Enormous enthusiasm
The enthusiasm makes Living + a vibrant, attractive platform that facilitates faculty and student recruitment.

Exemplary collaboration
With a strong research network, Living + exemplifies Aalto’s multi-disciplinary aspirations.

Strategies needed
The unit needs to formulate strategic goals, sub-goals and sub platforms. Where does it want to be in 5/10 years?
Criteria of success needed
And are they scientific or social?

Coherent vision needed
There is excellent but disparate research outcomes from various departments, but not from the platform itself, which lacks a coherent strategy.

Technological warning
Both the “human” element of “Living” (gendered, racially and economically diverse) and the artistic element of research need to balance the technological.

The Hub
The fact that the university has designated a specific space for Living + is significant and a potential game changer.
Feedback to Aalto University Leadership

Structural/Administrative clarity needed
Organizational ambiguity hampers the research and artistic environment. There should be more clarity regarding the administrative hierarchies linking the platform, the department, and the university. And what is a “platform”? It needs to be more than a club for like-minded collaborators.

University Support/Access
There is not enough research support from the university to ensure success. Do the platforms sit on university committees with access to president?

Greater institutional clarity needed
Who brings faculty in? Who gets the money that research brings in? Who gets credit? Who pays for research expenses and how are salaries for cross-disciplinary, platform-related researchers paid?

Ethics
Ongoing discussions as to what constitutes research ethics in relation to the design of human centred living environments should be institutionally supported.
Field 8 Recommendations

- Vibrant and diverse entrepreneurial ecosystem
- Excellent infrastructure
- Multiplicity of initiatives and programmes to support enterprise
- Multi-disciplinary; Multiple partners
- Student led initiatives
- Output evidence - patents, start-ups
- Sustainable and scalable case study evidence
- Creative industry hub
- Drives pedagogical content of education
General Feedback to Aalto University Leadership

Positive
1. Scope and scale
2. Commitment from central university management
3. Excellent facilities; diversity of activities;
4. Student led activities (Slush, …)
5. Multidisciplinarity input
6. Patents, new venture creation record
7. Creative industries/design impact
8. Embedded entrepreneurship education

Recommendations
1. Confusing offering; eliminate duplication and repetition
2. Provide better navigation through the initiatives
3. Collect more data on the sustainability and added value of venture creation
4. Strategic overview and policy; establish KPI’s,
5. Organise support for copyright and design-right in the areas where patents are not possible
6. Reflect on the balance of initiatives aimed at student-driven entrepreneurship versus science-based entrepreneurship by professors, phds and post-docs
Shaping the future

aalto.fi