



**AALBORG UNIVERSITY**  
DENMARK

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## **AAU interdisciplinary research projects 2017**

In support of AAU's aim to foster innovative interdisciplinary collaboration, AAU researchers are invited to submit Expressions of Interest for participation in AAU interdisciplinary research projects within five theme areas inspired by Horizon 2020 and FORSK2025. This call provides details on the themes, selection criteria, financing, and the project proposal process and its deadlines.

### **1. Aim and background**

Throughout Europe, research and innovation programmes focus on addressing major societal concerns. Both Danish and European research policies and programmes support and highlight an interdisciplinary approach as a prerequisite for addressing the significant societal challenges. In an effort to boost Aalborg University's scientific impact in terms of new partnerships and new approaches to societal challenges and to foster and stimulate ground-breaking excellent research and innovative interdisciplinary collaboration within the University, AAU researchers are invited to submit project proposals for AAU interdisciplinary research projects. The supported projects are expected to enable new international collaborations aiming for e.g. Horizon 2020 funding.

The AAU call for interdisciplinary research projects will be assessed in a two-stage process. During the first stage, AAU researchers are invited to submit max 3-pages Expression of Interest; and if selected in the first-stage evaluation, proposers will subsequently be invited to submit a full project proposal for the second stage.

The projects are seen as an intermediate step to international funding and success from which interdisciplinary projects, activities and funding applications will emerge at AAU with the aim of ensuring a strong impact on the societal challenges and building a stronger institutional interdisciplinary tradition at Aalborg University.

The Strategic Council for Research and Innovation (SRFI) at Aalborg University has selected five themes within the project proposals for interdisciplinary projects must be submitted. The five selected themes all build on both nationally (FORSK2025) and internationally (H2020) recognised topics of key importance to society.

**The five themes are:**

- 1. ICT as enabler of connected societies**
- 2. Intelligent, sustainable and integrated energy development and consumption**
- 3. Community based care and technology-supported health**
- 4. Children, young people and the education of the future**
- 5. Denmark and the global trends of the future**



See appendix 1 for a short description of the 5 themes.

In order to inspire and enable matchmaking for potential proposers, open workshops on each of the five themes will be organised. The workshops facilitate cooperation between faculties which may lead to the preparation of Expressions of Interests and subsequently, the submission of full project proposals. Hence, these workshops will both provide overall information about the five themes, and they will present an opportunity for participants to strengthen and expand already established collaborations and become inspired to initiate new partnerships and activities at Aalborg University. Further information and invitations to the workshops will be announced soon.

## 2. Who can apply?

The main proposer (Principal Investigator) must hold a position at AAU (associate professor level or above) and must be employed at AAU during the grant period. In case the grant holder leaves AAU, the grant will not follow the grant holder but may instead be transferred to a new AAU Principal Investigator.

## 3. Project proposal process

The project proposal process is a two-stage process. During the first stage, the proposers for AAU interdisciplinary research projects 2017 must submit an Expression of Interest (see appendix 2) which briefly outlines the project idea. Up to 10 expressions of interest will subsequently be invited to submit a full project proposal (see appendix 3). The call for project proposals is divided into six phases:

Phase	Content	Deadline
1	Publication of the call and the five AAU research themes	March 23, 2017
2	Workshops. Five workshops (one for each theme) will be held to discuss possible project ideas and to encourage and enable matchmaking across research groups and faculties.  Workshop dates: <ul style="list-style-type: none"><li>- ICT as enabler of connected societies - April 19</li><li>- Denmark and the global trends of the future - April 21</li><li>- Intelligent, sustainable and integrated energy development and consumption - April 24</li><li>- Children, young people and the education of the future - May 2</li><li>- Community based care and technology-supported health - <del>May 3</del> NB new date May 1</li></ul>	April/May 2017
3	Deadline for Expression of Interest.  When submitting the Expression of Interest, proposers must use the template provided in appendix 2.	June 2, 2017  Submission of Expression of Interest to: <a href="mailto:cp@adm.aau.dk">cp@adm.aau.dk</a>
4	Evaluation and selection of Expression of Interest. Reply regarding acceptance/rejection including a motivated decision for the	June 20, 2017



	<p>conclusion.</p> <p>The AAU Strategic Council for Research and Innovation (SRFI) will select up to 10 Expressions of interest.</p> <p>All submitted Expressions of Interest will receive an argued decision of the acceptance or rejection.</p>	
5	<p>Deadline for full project proposal.</p> <p>The proposers of the up to 10 selected Expressions of Interests are invited to prepare a full project proposal for an interdisciplinary research project (maximum 15 pages). Proposers must use the project proposal template provided in appendix 3.</p>	<p>September 15, 2017, h12:00</p> <p>Submission of full project proposals to: <a href="mailto:lpp@adm.aau.dk">lpp@adm.aau.dk</a></p>
6	<p>Evaluation and selection of full project proposals (stage 2).</p> <p>All submitted project proposals will receive an argued decision of either acceptance or rejection.</p>	<p>November 1, 2017</p>

#### 4. AAU interdisciplinary projects and parties

The interdisciplinary research projects must be based on interdisciplinary cooperation across at least three faculties. For each of the interdisciplinary research projects, at least one of the three (or more) involved faculties must belong to the SSH areas (Humanities and Social sciences) and one faculty must belong to the STEM areas (Engineering, Medicine, and TECH). Each consortium should be led by a Principal Investigator. External, unfunded partners (academic and non-academic) may form part of the consortium, but is not an assessment criterion.

#### 5. Selection procedure and criteria

##### Evaluation in stage 1:

Based on the received Expressions of Interest, the Strategic Council for Research and Innovation (SRFI) selects up to ten Expressions of Interest. The selection is based on the assessment criteria described below (items 1-3). The proposers of the 10 Expressions of Interests will be invited to submit full project proposals. SRFI may invite individual proposers to attend a meeting to clarify any questions related to the Expressions of Interest. All proposers will receive a motivated decision for the conclusion taken by the SRFI.

##### Evaluation in stage 2:

In the second stage, project proposals will be submitted for scientific review and assessment of a cross-faculty Assessment Committee consist of five professors appointed by the five AAU faculties.

The tasks of the Assessment Committee are:

- To qualify feedback for the proposers selected to submit a full project proposal.
- To conduct a review of the consortiums project proposals in order to ensure that the projects meet the selection criteria
- To rank the project proposals and select the top five project proposals to be submitted for the approval of the AAU Executive Board.



All proposers receive a motivation for the final conclusion drawn by the Assessment Committee and the AAU Executive Board.

### **Assessment criteria**

Expressions of Interest are assessed on the basis of the (main) criteria 1-3 with a specific focus on interdisciplinary and ground-breaking research ideas.

Project proposals are assessed on the basis of the 5 (main) criteria listed below:

#### **The five main assessment criteria:**

##### **1. Addressing the major societal challenges with reference to the specific theme**

- A clear reference to which of the five research themes the project addresses
- A description of the scientific challenge
- The project delimitation in relation to the societal challenge
- How the project is linked to national and international strategies/agendas

##### **2. Excellence**

- Clearly identified research questions in relation to the project as a whole
- Clear cohesion and synergy between the components of the project which are provided by various researchers and/or research groups
- Coherence in the use of methods, theories and notions throughout the project
- State-of-the-art and beyond

##### **3. Interdisciplinarity**

- Involvement of researchers from three or more faculties of which at least one faculty belongs to the SSH areas (Humanities and Social Science) and one to the STEM areas (ENGINEERING, MEDICINE and TECH)
- A description of the interdisciplinary cooperation
- A description of the skills of the project participants and their contribution to the project

##### **4. The expected impact of the project**

- Clear and measurable success criteria for the project (qualitative and quantitative)
- Dissemination of the project research results including:
  - Publications, patents, conferences, workshops, etc.
  - External partners (academic and non-academic)
- Description of the project's expected contribution to address the societal challenges and the effect hereof
- Description of how the project will add to the development of interdisciplinary research at AAU
- Presentation of the project's strategy for external funding during and after the project

##### **5. Organisation**

- An overview of the management structure of the project
- An overview of the project participants, their degree of connection to the project and their place of employment



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## **6. Financial profile and General Terms and Conditions for Grants**

Each of the five interdisciplinary research projects will receive up to DKK 1.5 million annually for three years allocated from AAU's strategic funding initiatives. The faculties invest a similar amount in co-funding, i.e. each project has a total budget of up to DKK 9 million (2 x DKK 1.5 m x 3 years).

Neither the strategic funding nor the co-funding may be used to release researchers from their teaching obligations.

For further information regarding funding og finances in the interdisciplinary projects see Appendix 4.



### Important dates for the project proposal process

March 23 2017:	Publication of call
June 2 2017:	Deadline for Expressions of Interest (stage 1)
June 20 2017:	Selected proposers will be invited to submit a full interdisciplinary project proposal (stage 2). Other proposers will receive rejections of their Expressions of Interest
September 15, 12:00, 2017:	Deadline for full project proposal (stage 2)
November 1, 2017:	Final commitments to fund or rejections are sent to the Principal Investigators of the projects.

### Contact Persons

For general questions regarding the initiative and call please contact Lasse Panny Pedersen, Academic Officer and Project Secretary for the actions concerning research in AAU Strategy 2016-201 - E-mail: [lpp@adm.aau.dk](mailto:lpp@adm.aau.dk); Phone: 9940 3503

For questions regarding the research themes please contact the Vice Dean responsible:

- ICT as enabler of connected societies  
Torben Larsen, E-mail: [prodekan-tech-forsk@aau.dk](mailto:prodekan-tech-forsk@aau.dk); Phone: 2020 6856
- Intelligent, sustainable and integrated energy development and consumption  
Thorkild Ærø, E-mail: [tka@sbi.aau.dk](mailto:tka@sbi.aau.dk); Phone 9940 2261
- Community based care and technology-supported health  
Ole Kæseler Andersen, E-mail: [oka@hst.aau.dk](mailto:oka@hst.aau.dk); Phone: 9940 8816
- Children, young people and the education of the future  
Anette Therkelsen; E-mail: [hum-prodekan-forsk@aau.dk](mailto:hum-prodekan-forsk@aau.dk); Phone: 9940 9139
- Denmark and the global trends of the future:  
Søren Kristiansen, E-mail: [samf-prodekan-forsk@aau.dk](mailto:samf-prodekan-forsk@aau.dk); Phone: 9940 9606

For questions regarding the funding or finances in the projects please contact Gitte Hartung, Head of Planning & Budgets - E-mail: [gha@adm.aau.dk](mailto:gha@adm.aau.dk); Phone: 9940 7370



## Appendix 1: Research themes

The five themes are:

- ICT as enabler of connected societies
- Intelligent, sustainable and integrated energy development and consumption
- Community based care and technology supported health
- Children, young people and the education of the future
- Denmark and the global trends of the future

### ICT as an enabler of connected societies

Information and Communication Technology (ICT) is at the core of the on-going, rapid digitization of numerous aspects of society, including social lives, transportation, energy, production, health, financial transactions, consumption, and interactions with the public sector. ICT enables the deployment of technologies capable of “sensing,” transmitting, and analyzing data, thus enabling actors to take action. This also demands a tight integration of cyber and physical components. Data has been termed the new oil, the vision being that societal processes will increasingly be driven by decisions based on data. Thus, data is a fundamental resource. Data must be harvested; communication technologies are needed for transmitting data for processing and for transmitting analysis results to actors such as smartphone users or systems with no human in the loop. The digitization is slated to have profound effects on society. For example, one report finds that some 50% of all jobs will disappear within a number of years due to the deployment of ICT. Thus, this development raises numerous questions related to the welfare state, ethics, privacy, security, etc. This map into diverse areas such as energy; transport; retail; service; industry; agriculture; health and caring; security and ethics.

### Intelligent, sustainable and integrated energy development and consumption

Strategic investments in research must contribute to the development of competitive, energy-efficient and renewable energy technologies and systems that can help to meet increasing global energy needs, contribute to security of supply and reduce the negative environmental impacts associated with the production and consumption of energy. Well-functioning integrated energy systems are fundamental to modern society. At the same time, the global societal challenge in achieving the UNFCCC 2-degree target has been further cemented with the Paris agreement of 2015 that forms the basis for a significant step towards a transition to a global society with substantially reduced CO2 emissions.

### Close-to-home and technology-supported healthcare

Changes conditioned by factors such as demographic, structural and technological development challenge the healthcare system. There appears to be increasing attention to prevention, rehabilitation and general health promotion. Specifically, there is a lack of knowledge about the elderly, the chronically and mentally ill and the prevention of disability, impairment of cognitive functions and how the joy of life, quality of life and vitality is maintained through old age. Therefore, interdisciplinary cooperation between the professions providing care and the healthcare system is necessary. Trends entail a need for new knowledge, new approaches and resource-optimized solutions if society and the healthcare system are to meet the goals of better health and quality of life for all, within the resources available. Research on welfare and health assistive technologies with a focus on prevention, rehabilitation and general health promotion that supports the individual citizen, reduces the burden on caregiving staff and that can reduce public spending requires an interdisciplinary effort. This involves technical knowledge, for example, on automation and robots combined with insight into the use of large amounts of data, design and user involvement.

### Children, young people and the future of education



In an increasingly complex world, the acquisition of new knowledge, skills and competences throughout life is increasingly important for the individual and for society as a whole. Although Denmark is among the countries that invest the most resources in education, the Danish educational system is challenged in some areas in terms of quality and relevance. Research on learning and education can not only help to create even better daycare, elementary education, secondary education, higher education and continuing education, developing skills, knowledge and competencies for the individual, but also contributes to the development of creativity, accountability and citizenship for the benefit of public and private organizations and the wider society. The use of digital tools can be central in relation to differentiated and motivational teaching for different target groups.

### **Denmark and the global trends of the future**

The future is marked by people in motion and increased cultural interaction. Global challenges in relation to factors such as climate, inequality and armed conflict lead to many people wanting to seek better living conditions in new countries, and such movement means challenges – locally, nationally and globally. Digital developments lead to changes in labor markets and trade relations, with new opportunities and challenges for businesses and society. It also appears that significant movement flows in the future will take place within states, from rural to urban areas. This is also the case in Denmark where population movements toward the larger cities create challenges that require new responses. Research can help to understand the scope and nature of both national and global mobility illuminate the challenges and opportunities as well as help to create long-term and sustainable solutions, both in Denmark and globally.



**Appendix 2: Template - Expressions of Interest (Stage 1) (max 3 pages in total incl. references)**

The project description must not exceed 3 pages incl. references and must be set in Times New Roman, 12-point with single spacing. The Expression of Interest must be written in a language that does not require expert knowledge to be understood, but it shouldn't be oversimplified.

Stage 1 Expressions of Interest are assessed on the basis of the main assessment criteria 1-3 with a specific focus on interdisciplinary and ground-breaking research ideas.

The description should contain the following sections and the template for the Expression of Interest should be used.

<b>Proposer/Principal investigator</b>	
Proposer name	
Position	
Faculty/Department/Research Group	
Address	
Email	
Telephone	
Mobile	

<b>List of project participants/faculties</b>	
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<b>Project Duration in months*:</b>	
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\* The project is expected to start early 2018. Project must not exceed 36 months.

	<b>Item</b>	<b>Details</b>
1.	Project title and acronym	<i>(Specify the title of the project and its acronym)</i>
2.	Research theme and links to other themes	<i>(Specify the AAU research theme that the project will be part of and any links to other themes)</i>
3.	Executive summary (max 15 lines)	<i>(Provide a succinct description (laymen English) of the project covering the addressed scientific challenge, its relevance to AAU's strategy and the interdisciplinary aspect)</i>
4.	Principal investigator	<i>(Specify the profile (including the competences within the research area) of the person nominated as Principal investigator) (max 3 lines)</i>
5.	Period of project Planned start and end	<i>(Specify the proposed timeframe of the project – start date; duration [years/months] and anticipated completion date)</i>
6.	Project participants/ interdisciplinary aspects (including expected contribution of the participants)	<i>(Profile of the researchers/research groups involved The interdisciplinary basis and its effect and why is the proposed team the best for the specific project.</i>
7.	Project objectives and	<i>Broadly specify:</i>



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	content	<ul style="list-style-type: none"><li>• <i>Vision, scientific scope/aim of the project, brief description of problem (scientific challenge), how the project fits with the overall theme and AAU's strategy, national and international strategies</i></li><li>• <i>Novelty of the research idea, description of approach and activities, state-of-the-art and beyond</i></li></ul>
8.	Expected scientific outcome/ results	<i>(Specify expected scientific outcome/results)</i>
9.	Impact and beyond	<i>(Suggestions for future applications and activities, obvious research and innovation potential)</i>

Submission of Expressions of Interests to: [cp@adm.aau.dk](mailto:cp@adm.aau.dk) no later than June 2 2017.



**Appendix 3: Template – Full project proposal (Stage 2) (max 13 pages in total excl. CV and the references)**

**1. Project proposal form (max 1 page)**

Please fill out the form below.

Project title and acronym:	<i>(Specify the title of the project and its acronym)</i>
Research theme and links to other themes	<i>(Specify the AAU research theme that the project will be part of and any links to other themes)</i>

Scientific keywords (max 5):	
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<b>Proposer/Principal investigator</b>	
Proposer name	
Position	
Department/Centre	
Address	
Email	
Telephone	
Mobile	

<b>List of project participants/faculties</b>	
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Project duration in months*:	
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\* The project is expected to start early 2018. Project must not exceed 36 months.



## 2. Project description (max 10 pages)

The project description must not exceed 10 pages excl. references and must be set in Times New Roman, 12-point with single spacing. The project proposal must be written in a language that does not need expert knowledge to be understood, but it shouldn't be oversimplified.

Stage 2 project proposals are assessed on the basis of the 5 main assessment criteria.

The description should contain the following sections.

1. Short description of the core idea (a maximum of 15 lines) (also covering the addressed problem (scientific challenge), its relevance to AAU's strategy and the interdisciplinary part)
2. Project objective
  - 2.1 Vision, scientific scope/aim of the project and success criteria within the funding period and beyond
3. Project content
  - 3.1 Indicate the AAU research theme to which your project relates, and explain how your project proposal addresses the scientific challenges, the interdisciplinary basis and its effect
  - 3.2 Content (the main ground-breaking research idea/s; proposed activities - including a timeline; reference to AAU's strategy; the positioning nationally and internationally)
  - 3.3 State-of-the-art of the theoretical and practical field at a national and international level and how the project goes beyond, describe and explain the overall approach and methodology
  - 3.4 Expected results, dissemination of results and impact
  - 3.5 Suggestions for future applications and activities (obvious research and innovation potential)
4. Implementation
  - 4.1 Work package structure and content
  - 4.2 Management structure
  - 4.3 If relevant, ethical and data management procedures
  - 4.4 The profile of the proposer (Principal investigator) and the interdisciplinary researchers/research groups involved



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### **3. Budget (max 2 pages)**

See appendix 4 for information regarding the funding and finances of the interdisciplinary research projects.



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- 4. CV of the principal investigator and key researchers involved** including a link to an up-to-date Google scholar publication list.  
Moreover, list 3-4 key publications with relevance for the proposed area.  
**(Max 1 page each)**

Submission of full project proposals to: [lpp@adm.aau.dk](mailto:lpp@adm.aau.dk) no later than September 15 2017 h12.00.



#### Appendix 4: Funding of interdisciplinary research projects

Initiative 2.1 of AAU's strategy "Knowledge for the World" involves interdisciplinary research projects. AAU will enhance its holistic research and develop new positions of strength within areas with an untapped potential of collaboration among our mono-disciplinary research environments. This is done by launching five interdisciplinary research projects with participants from research environments from across the main areas of the University. Applications may fall within the following themes:

1. ICT as enabler of connected societies
2. Intelligent, sustainable and integrated energy development and consumption
3. Community based care and technology-supported health
4. Children, young people and the education of the future
5. Denmark and the global trends of the future

In total, the financial framework of the interdisciplinary research projects amounts to approximately DKK 45 million during the strategy period. Each of the interdisciplinary projects may receive a total of up to DKK 3 million annually during a three-year period.

The funding model established for these projects will ensure that funding received from the strategic funding pool and funding received from the main areas are secured from the beginning of the project period. For the applicant this means that the above financial framework is guaranteed throughout the maximum three year duration of the project (three year period). All main areas must invest an equal amount of funding in the project. The table below provides an example of how a specific interdisciplinary research project may be funded.

<b>Funding of one of the interdisciplinary research projects - example</b>				
in 1,000 DKK				
	<b>Funding year 1</b>	<b>Funding year 2</b>	<b>Funding year 3</b>	<b>Total</b>
Strategic funding pool	1,500	1,500	1,500	4,500
Faculty of Engineering and Science	300	300	300	900
Faculty of Humanities	300	300	300	900
Faculty of Social Sciences	300	300	300	900
Faculty of Medicine	300	300	300	900
Technical Faculty of IT and Design	300	300	300	900
	3,000	3,000	3,000	9,000

In the established model, the applicants will not negotiate funding across main areas, and the faculties are guaranteed a financial share in the projects.



### **Costs of interdisciplinary research projects**

The applicant is responsible for clarifying the estimated costs of the research project for the full project duration in the application. All costs must be assigned directly to project activities.

In the event that professors and associate professors are involved in the research project, they may not be released from their teaching obligations to take part in project activities. A proportion of the costs of the interdisciplinary research projects may be spent on including administrative staff members in the project management. Time spent on the project by both administrative and academic staff members must be registered through AAU's time recording system and attached to the associated project number. When releasing both academic and administrative staff members of their duties to work on the project, the cost price of the hours spent working on the project must be applied.

Similarly, all other direct costs of project activities must be charged to the project number.

### **Continuous reporting**

All costs associated with the interdisciplinary research projects must be registered to the organisational unit of the Principal Investigator. The local economic unit must be prepared to provide continuous support to the financial management of the projects. Project costs are continuously registered when individual costs are incurred. In providing a continuous overview of the project finances, project income and costs are registered according to the project numbers specified in the account plan.

Every four months, status reports of the strategic initiatives must be submitted to the Executive Management. The responsible executive manager will be responsible for overseeing that the funding is spent in accordance with the budget. Therefore, the responsible executive manager, in this case Dean of the Faculty of Medicine, Lars Hvilsted Rasmussen, must receive continuous reports on the academic activities and financial status of the project. These reports must be prepared by the Principal Investigator and submitted to the responsible executive manager.

The responsible executive manager is responsible for submitting the reports to the Executive Management. The Rector's Office has designed a template to be used for the preparation of status reports; this template includes a guide and a list of requirements. This reporting forms part of the Executive Management's monitoring of the implementation of AAU strategy initiatives. The status report must include a status of the project's academic activities and a specification of whether the budgeted funding of the period has been spent. This means that the report should not include an overview of defrayed expenditure; instead the status report should merely indicate whether funding is spent according to the budget.

### **Focused funding**

In its discussions on strategic funding pools, the Rector's Office has emphasised the need for the submission of academic and financial status reports of the activity.

In the event that the Executive Management considers that the strategy activities lack progress, or if the prerequisites of the implementation of strategy activities are altered substantially, the Executive



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Management may revoke the funding. However, costs already incurred as part of an interdisciplinary research project will be covered even if the funding is revoked.

Funding cannot be transferred from one financial year to the next; this means that any unspent funds must be incorporated as increased expenditure in the budget of the following financial year under the responsible units. According to the general procedure of all strategy initiatives, the third instalment is adjusted in accordance with the expectations for the year.



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## Appendix 5: Inspiration

(Example of an interdisciplinary project from Copenhagen University:  
<http://www.math.ku.dk/english/about/news/susanne2016/>)