UNIVERSITETET I AGDER

Plan for
Research and
Academic and Artistic Development
2017-2027

Contents

Introduction

Background

In UIA's Strategy 2016-2020, our vision is *co-creation of knowledge*, with the priority areas *Learning and Education for the Future*, *Global Mindset*, and *Community Involvement and Innovation.* The Board has determined that a *development plan for research and academic and artistic development work* shall also be developed (the R&D/FoU plan). This is to last throughout the strategy period duration, until 2027, and is closely connected to UIA's strategy. The R&D plan is to function as a long-term tool in the development of research, and academic and artistic development work. Study-related development work is not covered by this plan, but is part of the priority area *Learning and education for the future.*

Vision for 2027

What kind of university do we want to be in 10 years' time? In the following chapters, a plan is presented for how the structures surrounding research, academic, and artistic development can be built in order to equip the university and our employees to provide research with the best possible conditions for growth. If we manage this, we will be able to achieve our vision, which is an UIA in 2027 that looks like this:

- UIA has developed research of high, international quality in several areas.
- UIA has further developed solid and wide-ranging research expertise which forms the basis of all of our educational pathways
- UIA is an inspiring workplace and career development arena for researchers. UIA offers working conditions which facilitate research, academic, and artistic development work.
- UIA is still closely connected to regional industry and commerce and economic life, whilst simultaneously several environments are well-known or internationally leading.
- Several research environments have achieved the status of national centres under The Research Council of Norway.
- Several research environments are partners in large, European projects, and a number of these are coordinated by UIA.
- The research and study portfolios are closely connected, and bachelor's and master's students are an important resource in the research activities of most research groups.
- We have both a working culture and an organisation that promotes collaboration across different academic disciplines, internally and externally.
- We are known for a strong research environment within learning-related research.

In order to achieve this vision, the R&D work at UIA for the next ten years will be characterised by the following:

UIA must have a culture in which researchers and research groups can develop in the best possible fashion. Our culture must be characterised by openness and sharing – it should be natural to make use of the knowledge of others, and across subject divisions or roles in the organisation. The research groups will be the core unit where research development takes place. We collaborate effectively across department and Faculty lines, and with our regional, national and international collaborative partners. UIA shall be known to provide good development opportunities for young, ambitious researchers in the early stages of their careers. This will be achieved through affiliation with a well-run research group, positive support from the administration and management, and satisfactory access to relevant research infrastructure. The administrative support should be professional and

organised as a value chain with an efficient division of labour between the Faculty administration and the central administration.

The plan shall provide a basis for the formulation of concrete, annual action plans at Faculty/unit level in the years to come. The plan will be revised after four years.

The R&D plan's structure

The R&D plan is built up around six thematic chapters or action areas structured around three questions: Where are we today? Where do we want to be? What must be done to get us there? Research groups are the first action area. The university management see strong, resilient research groups as a foundation for the career development of the researchers and research activity at the institution. Belonging, collaboration and networks are important. Facilitating for this will benefit all research groups, regardless of size or level of ambition.

In UIA's future development, recruitment and the opportunity for career development are highly important themes. A large proportion of our staff will retire during the course of the next ten years. Who we recruit, which criteria we base recruitment upon, and how we facilitate good career development at UIA, will have a great deal of influence on our ability to succeed with the positive development of the research activity. These themes will therefore be dealt with in the next chapter.

In the third chapter, the theme of education and research will be addressed in context. As a university, the connection between research and education is essential, and this, to a great extent, demonstrates our quality as an institution. This is of particular significance for our largest educational programmes, such as vocational and teacher training.

One element that characterises some of best research environments in 2017 is a significant degree of interdisciplinary work. New collaborative constellations can be advantageous for innovation and development. It is desirable to build this up and to reduce impediments as far as it is possible. Interdisciplinary cooperation is therefore the fourth action area to be addressed in the plan.

The last two chapters are about administrative support for research and research infrastructure. A professional support network, both in the form of personnel and equipment, will affect our chances of obtaining funds for research projects and collaboration internally and with others.

In the development of the plan, we have also taken a look back on how UIA has developed over the last ten years, and how we predict that the world around us will change. These two chapters are included in the attachment.

Research groups towards 2027

Where are we today? – The current situation

Research groups shall contribute to creating good, resilient research environments clustered around various thematic areas. They shall stimulate increased internal collaboration and academic activity, and render visible UIA's research through thematic foci and targeted external communication. They shall also integrate master's students and PhD candidates into the academic environments. In 2012, the University Board decided that the usual organisational form of the research at UIA should be in research groups. In the subsequent year, the criteria for research groups were adopted. Today, research groups have been established at all of the Faculties. At UIA in 2017, there are around 75 named and profiled research groups. The groups' size, composition and access to resources varies from Faculty to Faculty. The research groups also have very distinct levels of activity and ambition.

Some of the more ambitious research groups have established themselves in the form of centres, whilst others wish to function as academic groups in which keeping abreast of the latest academic developments, as well as cooperation with respect to education, are central. Whilst bearing this diversity in mind, the discussion is now about the further development of the research groups. It is desirable to come up with a clearer definition of what research groups are, and how they distinguish themselves from academic groups and centres. The academic environments call for defined stages of development, a clarification of expectations tied to the various groups, and clarity regarding the administrative support that the research groups can and should receive from the institution.

Where do we want to be? – Vision for 2027

Strong research groups will be central if UIA is to achieve its aims within research, development, and artistic development work. The organisation shall facilitate for researchers achieving their potential through membership of, and with productive contributions to, research groups both from within and across disciplines, without this disturbing our formal organisation into departments and Faculties.

UIA has succeeded in developing a positive cycle for quality development, and access to resources (Figure 1). Through coordinated recruitment and building infrastructure, strategically leading research groups, and effective dissemination of research results in the most relevant publication channels, we have achieved a positive spiral of development.
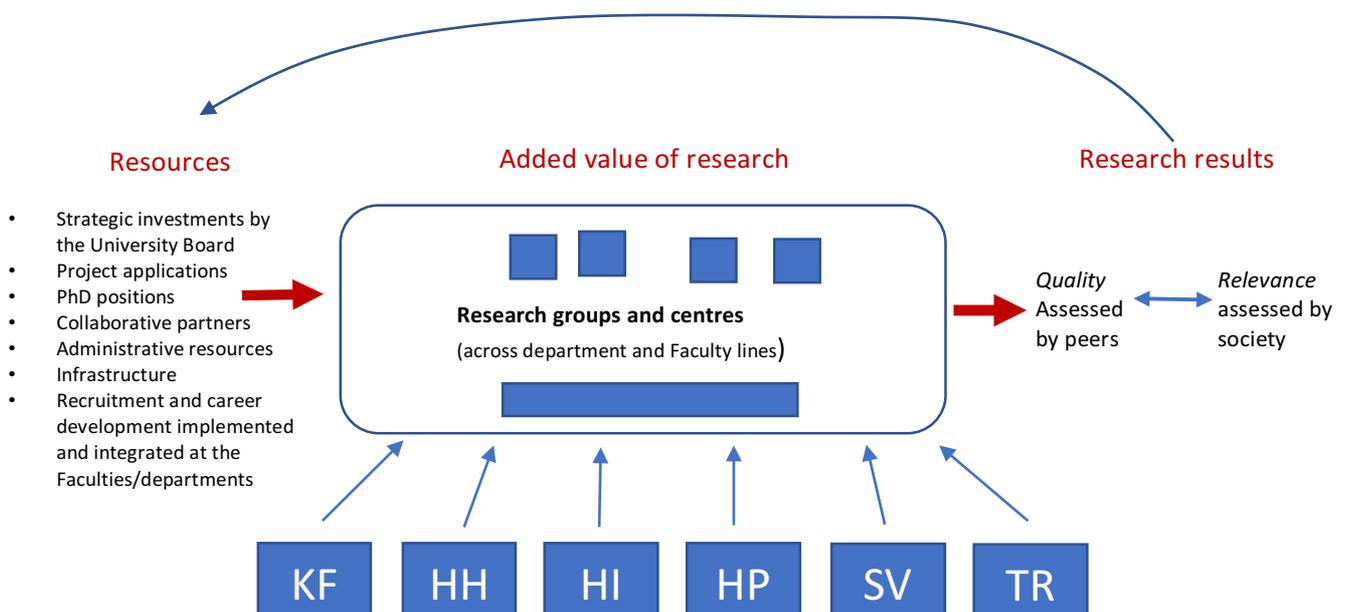
Figure 1. Cycle of resource access and quality development

With positive development within and for the research groups towards 2027, UIA has many more active research staff, publications of high academic quality and social relevance, and externally financed research activities. The research groups provide individuals with a stimulating academic environment in which good results are achieved and appreciated. Heads of Research are incentivised via opportunities provided for skills development and the access the research groups are given to good support functions and resources. Strong research groups will give UIA a wider international contact base and will be important in the work with recruitment, both nationally and internationally.

During the first part of the plan period, UIA has set clearer criteria for research groups. It is evident how research groups distinguish themselves from the groups that focus primarily on being academically up to date (focused on education) and research centres. Groups focused on education, research groups, and research centres are all necessary and important parts of the academic activity at UIA, and are to work together.

Separate stages of development can be imagined within the research groups in which a group plan for development is shaped according to the requisite level of ambition and production. Each group is to set goals for its development in consultation with academic and research management, with its own specific standpoint and field serving as point of departure. The groups will also decide by which indicators they should be assessed within a framework in which quality and relevance can be measured in different ways. In this way, the research groups gain ownership of their own development, and are assessed in accordance with that which gives them the best possible development potential. Support given to the research groups – economic and administrative – is differentiated in line with their various levels of ambition, and their objectives and results.

The research centres established by the University Board distinguish themselves clearly from research groups and centres established at Faculty level in terms of their assumptions and ambition levels. The Board's established research centres shall function as a realisation of UIA's priorities, with the objective to develop research areas in which UIA can become a national and international leader. The research environments out of which these centres are formed should have achieved strong research results, have good connections to organised research training, and a distinguished project portfolio at national and international levels before their nomination by the University Board as an institutional focus.

In 2027, UIA will have several research centres that have achieved status as national or internationally leading centres. In addition, UIA will have efficient research groups covering the entire range of development stages. The groups will find that the support on offer from the organisation is in keeping with their level of ambition.

What must be done to arrive at this stage? – Measures for the years to come

- Clarification concerning expectations and support/incentives
  - The terms "*group focused on education"* (faggruppe), *research group* and *research centre*, which have been established by the University Board, are differentiated through an obvious set of criteria which are common for UIA.
  - Within the research group term, a development ladder is being developed in line with the groups' ambitions and production levels.
  - The groups develop clear goals and choose their own indicators on which basis they are to be assessed.

- Administrative and economic support is given in line with the group's level of ambition.
- All PhD candidates are affiliated with a research group.
- The research groups endeavour to achieve a satisfactory gender balance, cf. the objectives of UIA's gender equality plan.
- The research group leader has a clear mandate and the possibility of further development.
- An assessment as to whether the research centres should be placed on a separate organisational level, independent of Faculty groupings, shall be made.

- Strategic management at all levels
  - Resources are prioritised clearly at all levels – centrally, at the Faculties, departments, and in the research groups.
  - UIA prioritises support to environments which can become international leaders, including through the research centres established by the Board.
  - A constructive culture for sharing results and success stories is to be developed.

- Research administrative support and project development
  - Local research administrative support is to be given within the group's field. The support is to be adjusted according to the research group's level of ambition, objectives and goal attainment.
  - Administrative staff with support functions have high levels of expertise and contribute to the development of projects and applications.
  - The research groups' members participate to an increasing extent on committees and panels of the Research Council of Norway and EU.

Recruitment and career development towards 2027

Where are we today?

UIA's employees are the most important success factor needed in the development of good academic environments. Consequently, the recruitment and career development of skilled colleagues is the key to developing UIA's research activity. We need academic staff with ambitions for their own research, and who contribute to their research group and to the development of research projects.

In the years to come, many of UIA's academic staff will approach retirement. UIA must recruit a sufficient number of new, highly qualified academic employees who can replace these. The situation is illustrated in tables 1 and 2.

Table 1. Age composition of permanent staff in academic positions at the Faculties.

Age	HP	HI	KU	SV	HH	TR	Total
Under 40	10	9	2	4	1	25	51
40-49	29	23	16	18	19	35	140
50-54	21	17	8	7	6	16	75
55-59	15	15	7	12	9	23	81
60-65	33	30	14	10	9	20	116
Over 65	8	3	7	7	5	11	41

Table 2. Percentage of staff over 60 years of age per Faculty.

Faculty of Humanities and Education	35.3
Faculty of Health and Sport Sciences	34
Faculty of Fine Arts	38.9
Faculty of Social Sciences	29.3
School of Business and Law at UIA	28.6
Faculty of Engineering and Science	23.8
University total	**31.2**

Source: UIA's Division of Human Resources, March 2017

There will be an equivalent need for recruitment at other higher education institutions, both nationally and internationally, and the competition to attract highly qualified colleagues will be tough. It is therefore necessary to develop a recruitment policy and processes which are flexible, which make use of the institution's various advantages, and which – to a greater extent than is the case today – clarifies the available career development opportunities.

Career development is closely linked to the individual researcher's integration within the research group, so in this respect the group will also become a significant tool in the recruitment work. For younger researchers who are at the point of establishing themselves, it will not only be the considerations of an academic, subject-specific nature that will be of concern, but also career opportunities for their partner, and favourable conditions for their family. It will therefore also be important for UIA to develop a family perspective within recruitment drives in order to occupy as strong a position as possible in the competition for the talents we want the most.

Challenges in 2017

- Individual processes take an unnecessarily long time, which applies in particular in the case of appointment to positions of a limited duration, such as PhD or Postdoc.
- There are different practices for, and importance attached to, staff- and resource planning at the Faculties.
- We do not have gender balance in the context of the top academic positions – only 26% of UIA's professorial man-labour years were completed by women, as of February 2017. In some fields, there are few male employees, and balanced recruitment is a challenge.
- We do not have a satisfactory system for the reception and integration of international staff.
- We do not utilise well the advantages that UIA has in terms of its geographical (and geopolitical) location in the marketing of positions.
- We do not utilise a sufficient degree of variation in work methods and channels for recruitment to permanent positions.
- Too few positions are advertised in English. In 2016, 61% of academic positions were advertised in English.
- Career development aspects and marketing are emphasised too little in the work with recruitment.

Where do we want to be? – Vision for 2027

In 2027, UIA is twenty years old and is known as a dynamic university which provides its staff with the opportunity to develop. UIA offers good career paths for its employees, and has an international reputation for developing researchers who are responsible for high quality research. This all makes UIA an attractive workplace for research talents, and gives us a distinct advantage in the recruitment process. We succeed in recruiting the best people who fit our profile: Young ambitious researchers who see favorable development opportunities at UIA and a better life quality in Norway than that which can be offered by other universities in Europe. All units at the institution carry out active staffing plan work, which has resulted in us having a good plan in place to replace all departures from the beginning of the 2020s. We use, regardless of the needs we have, a varied choice of methods in the recruitment work for permanent positions, such as headhunting, social media, and individual networks. UIA has adaptable and flexible processes for recruitment in which time usage is adjusted according to the needs of the situation. UIA also has a satisfactory system for the reception and integration of international staff at all units at the institution. In 2027, there is an approximate gender balance in academic positions. UIA's recruitment and career development strategy has satisfactory consistency between the study programmes on the one hand and the research portfolio on the other.

What must be done to arrive at this stage? – Measures for the years to come

Recruitment:

- In the recruitment of academic staff, simultaneous consideration must be paid to the development of the study portfolio and the research portfolio. In addition to teaching experience, emphasis is placed on experience with working in research groups, project development, and approved applications for external funding when appointing.
- In all recruitment processes, assessment will be made and measures implemented with the aim of achieving gender balance in the field in question and for all job categories.
- Simpler and more adaptable recruitment processes are to be developed for appointment to PhD and other academic positions.

- A common template which takes into consideration the different units' needs is to be used for staffing and resource planning.
- We use several methods in the recruitment work for permanent positions: Examples include headhunting – in other words goal-oriented recruitment via international headhunting enterprises – the use of social media such as Facebook and Twitter, and the use of individual networks.
- Better marketing:
  - Ensure that job advertisements are available internationally (including by advertising in English and in international fora), and carry out goal-oriented marketing of positions in international academic environments.
  - Ensure that announcements, webpages and other information material accentuate the advantages of working at UIA and living in Norway.
  - Use websites and other media to deliberately market UIA as a university which gives young researchers exciting opportunities.
- A focus on career development is used more consciously in the recruitment work. Career development opportunities for younger researchers must be emphasised in job advertisements in which the possibilities inherent in the links to research groups are stressed.

Reception:

- Offer adapted start-up packages for new employees in the form of salary, scholarships/research groups, designated research time, trips home, opportunities for partners etc. when recruiting to senior positions. This is combined with clear expectations with regard to results.

- A uniform and qualitatively effective system for the reception and integration of international staff (onboarding) is to be created. The project shall also ensure that there are opportunities for the new employee's partner to develop his/her career (dual career).

- New academic staff are to receive thorough information and training so that they can quickly commence with their research. This will include information about research ethics, privacy protection, the Norwegian knowledge system, the Research Council of Norway, and what support a researcher can receive internally at UIA.

Career development:

A large proportion of the individual academic employee's career development will take place in the fellowship that the research groups provide. The capability of the academic environments to integrate newly employed research fellows and researchers is crucial for successful career development. All academic employees need networks to be seen and to feel a sense of belonging to a certain field. It is therefore important to strengthen the development of the research groups with expertise-oriented measures, administrative support, and other means. It is important that sufficient time and resources are set aside for the purposes of developing careers.

Career development measures for bachelor's and master's students:

- The use of students as academic assistants increases, in order to allow the opportunity for a career in research, and the recruitment of potential PhD candidates.

- Master's students with ambitions to become researchers are given thorough guidance about academic careers.
- UIA further develops several integrated master's-PhD degrees.
- Master's students are integrated into research groups. Their research projects are connected to PhD projects if this can strengthen a project or a research-thematic focus.

Measures for career development for PhD candidates and postdoctoral fellows:

- The research groups shall integrate PhD candidates and ensure a positive sense of belonging to the academic environment.
- A good doctoral degree programme is to be created in which PhD candidates complete during the nominal length of study.
- Career development shall be a regular part of the appraisal interview in which the opportunity will be provided to discuss future possibilities and develop a strategic plan for further career development together.
- Career development aimed at PhD candidates/postdoctoral fellows is to be developed in which candidates receive guidance on careers in academia as well as in working towards careers in other sectors, or as entrepreneurs.
- PhD candidates will have the opportunity to gain qualifications in line with various different career paths. In this regard, they will receive offers concerning self-development, as well as practical training in teaching, project development, and collaboration with trade and industry and the public sector.
- PhD candidates and postdoctoral fellows will gain the opportunity to build networks with trade and industry since representatives from the employment sector are included within the research group where this is possible.
- UIA clearly communicates what kind of expertise people with doctoral degrees possess and how they can contribute to trade and industry and the public sector.
- Courses in different instrumental subjects are developed in order to develop research careers. Examples of such courses include project management, application writing, research ethics, academic writing and network development.
- Wherever it is possible, adding a fourth year with teaching practice will be facilitated equally at all Faculties.
- Mobility funds for PhD candidates are to continue in order to ensure good opportunities for networking.
- Postdoctoral fellows are given the opportunity to supervise master's students.

Career development measures for Associate Professors:

Optimal career development demands both that there is a system in place, and that there is a culture that facilitates it. Ambiguity with regard to how one is to work on one's own career development, and what opportunities are available, must be lessened. The need for career development in the direction of advancement is particularly applicable for new staff, but is by no means for them alone.

Measures:

- All academics shall have their own individual career development plan, which is developed in collaboration with the head of department and, possibly, a mentor. Mentoring schemes are

- to be established wherever possible, with the follow-up of career development as their stated aim.
- Career development is an important component of appraisal interviews, and it is important that the goals that are set are worked on actively, both by the employee in question and their leader after the interview.
- Research time is apportioned according to the individual's and the research group's results, level of ambition and plans for career development.
- An understanding of research and career development must exist at all levels of management.
- The senior lecturer/teaching professor (dosent) pathway and the opportunities therein must be made known to a greater extent than is currently the case.
- The "Balance Project" has the goal of increasing the proportion of women in top academic positions to 35%. In addition, measures must be developed to aim for a gender balance in all academic job categories through good career development opportunities.
- The research groups shall integrate new employees and ensure a sense of belonging for them.
- International mobility and network building must be facilitated at all levels of the organisation.
- Courses are developed for academic writing, research ethics, application writing, project development and project management. Supervisor training should be maintained and developed.
- The management provides new employees with an introduction to support services and resources for career development, such as project and library support.
- A culture must be built up in which career development is supported by colleagues, which also takes the form of practical measures such as nominations for various prizes etc.
- There is a need for a proactive, capable personnel administration which actively follows up the career development of academics.

Measures for career development for professors (inc. "dosent"):

- Designated research time is an important instrument in career development and an important competitive factor for UIA's professors (inc. "dosent"). Criteria for apportioning research time is to be made more transparent and as similar in practice as possible between the Faculties.
- Mentoring arrangements for young professors are to be established at all Faculties, for example with the help of adjunct professor positions.
- A programme for professors is to be developed: From professor to internationally leading professor.
- Funds for project development and establishing projects are to be increased and application processes simplified insofar as this is possible.
- Good research group managers are to be developed who can contribute to the integration of new employees in the group, in collaboration with the head of department.
- Well-functioning systems are to be built and improved such that staff can commercialise their research ideas and results, or disseminate these to society in an effective manner.
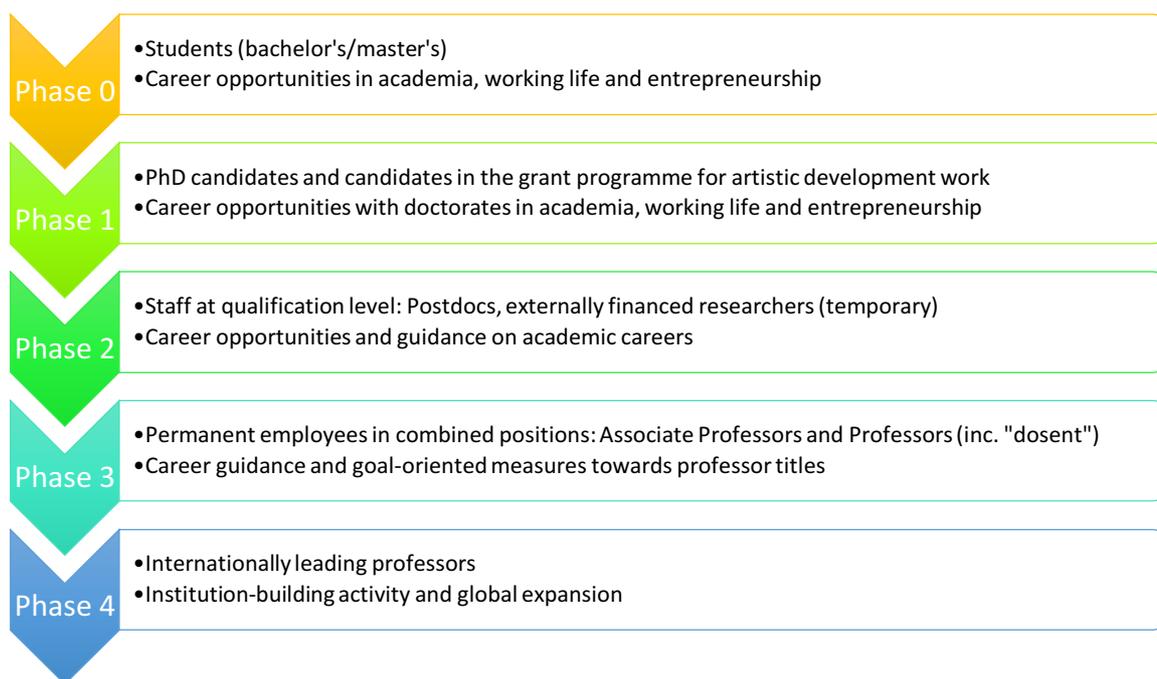
Phase 0
- Students (bachelor's/master's)
- Career opportunities in academia, working life and entrepreneurship

Phase 1
- PhD candidates and candidates in the grant programme for artistic development work
- Career opportunities with doctorates in academia, working life and entrepreneurship

Phase 2
- Staff at qualification level: Postdocs, externally financed researchers (temporary)
- Career opportunities and guidance on academic careers

Phase 3
- Permanent employees in combined positions: Associate Professors and Professors (inc. "dosent")
- Career guidance and goal-oriented measures towards professor titles

Phase 4
- Internationally leading professors
- Institution-building activity and global expansion

Figure 2. Goal-oriented stimulation measures for the entire career path.

Education and research in context
Where are we today? – The current situation

A strong, positive connection between research and education is a premise for quality in the educational programmes at a university, as well as contributing to ensuring that good students are recruited into research. When planning for the development of research activity at UIA, it is therefore necessary to ensure that this connection remains strong and relevant. The development of strong research environments cannot be seen in isolation from the programmes we offer – which is also the case when recruiting.

Some of the educational programmes that UIA offers have large student year groups, such as economics, teacher training, nursing education, and engineering. Exactly how much research activity is connected to these varies, and there is a need to increase research activity in certain fields. The level of the research also has improvement potential so that it can approach national and international levels. In recent years, UIA has focused in particular on forging closer links between teacher training, nursing education and social worker education through the establishment of an internal, professions-oriented network – PRONETT – and a professions-oriented researcher school in a collaboration between UIA and UiN – PROFRES. This has, amongst other things, contributed to collaboration concerning methods in the researcher school.

Research related to teacher training is carried out in many research groups at UIA (2017: 19 groups), but there is little interaction between the different research groups. The Teacher Training Unit coordinates the teacher training itself, but there is little coordination of the teacher training-related research activities.

UIA has established a support scheme for this in order to draw students more closely into research projects. It is too early at this point to assess this scheme, but suffice to say that the academic environments use it actively. The students give it positive feedback.

Where do we want to be? – Vision for 2027

In 2027, there is a good interrelationship between our study portfolio on the one hand and the research portfolio on the other. We shall have solid research within our educational areas. In some of these, we wish to have internationally leading academic environments. Such an environment will not necessary develop in line with the educational programme – it might also be ahead of the game, and pave the way for new studies. It shall nonetheless be an aim that the education and research portfolio will become synchronised in the long term. In some areas, UIA shall have excellent environments in both education and research. In all areas, it is important that the development of the study and research portfolio is seen in connection with the recruitment of academic staff and their career development. Teacher training-related research and research within nursing and social work training have become more effective and better coordinated. Research on one's own educational programmes and teaching contribute not only to the development of UIA's studies, but also to developing education and teaching internationally.

At an early stage in the course of their studies, students become actively acquainted with research activities such that everyone gains a good understanding of research methods and the significance of research. Particularly talented students are discovered early on and provided with good opportunities to continue a possible research career. Integrated PhD education is used actively as an opportunity to encourage the best master's students to start a doctoral programme.

What must be done to arrive at this stage? – Measures for the years to come
- How teacher training-related research is to be coordinated in the future requires clarification.
- UIA's focus on vocational subjects must be assessed and future measures discussed.
- The efforts in place to recruit students to research projects is to continue.
- The option to utilise integrated PhD programmes is to be actively pursued on all PhD programmes.
- Areas in which UIA has the potential to achieve excellence in both education and research should be identified. These areas are to be strengthened with regard to SFF/SFI/SFU status in the long term.
- Opportunities for a combination of, and synergies between, different sources of funding within Horizon 2020 such as for example, Marie Sklodovska Curie Actions and Erasmus+, must be better utilised.

Multidisciplinary collaboration towards 2027

Where are we today? – The current situation

Many of today's social challenges require multidisciplinary collaboration if they are to be solved. Such collaboration between and across fields will provide solutions which one alone cannot. Currently, UIA has several centres, priority areas and initiatives which build upon collaboration which transcends the boundaries of the academic fields. Examples of this include CIEM – Centre for Integrated Emergency Management, the Centre for Ehealth, the ADILA project about future-oriented learning methods, PRONETT professional education subjects network and PROFRES – professional education subjects research school.

Today, UIA has many small and vulnerable academic environments. Multidisciplinary collaboration is perceived of as being to a large extent based on random contacts made both on unit and individual levels, in which the responsibility rests with the individual employee. There are felt to be certain barriers to multidisciplinary collaboration in the organisation, such as a lack of the right kind of meeting points, little flexibility, a Faculty organisational structure which can hinder good academic collaborative processes, and a lack of connections between multidisciplinary areas of focus and educational programmes.

Where do we want to be? – Vision for 2027

In 2027, *co-creation* is not a strategic vision, but rather an established feature of UIA as institution. Multidisciplinary collaboration, both internal and external, is quite normal amongst UIA's academic staff, and UIA is prepared to contribute to solving the great challenges of society. It is simple and attractive to work together with others. Co-creation arenas have been established in which the academic environments find each other and cooperate with each other and their surroundings. UIA has developed several large, multidisciplinary research projects at national and international levels. The Faculties and research groups collaborate with regard to recruitment positions. In 2027, we do not just have a flexible research group organisational structure, but also flexibility in the organisation, which makes it easier to deal with externally financed projects through increased use of shared positions between the Faculties and between UIA and the department sector. There is a clear connection between UIA's multidisciplinary areas of focus and the educational programmes offered in the area in question.

What must be done to arrive at this stage? – Measures for the years to come

- The economy and UIA's budget model is to be better adapted to multidisciplinary collaboration than is the case today.
- A model is to be developed whereby collaboration and operations are simplified in the cross-Faculty centres. Whether these centres shall have one Faculty functioning as host, as is the case today, or whether other organisational solutions should be used, must be assessed.
- The co-creation workshop must be established as an arena for the whole organisation, independent of Faculty membership. This applies not just to the collaboration between UIA and the region, but also internally – at UIA.
- Resources are prioritised for use in collaboration across fields.
- UIA's research management prioritises more extensive research projects and joint projects.

Administrative support for research
Where are we today? – The current situation

Administrative support for research is given not just by the Division of Research Management, but also from financial and communication personnel, the library, IT and a number of others. A broad spectrum of administrative support is essential in the case of developing and implementing large research projects in particular. In 2017, a project support team was established which shall make it easier for academic employees to make use of the various administrative services. The project support team draws on resources from most administrative departments, and is thus also part of raising awareness of the different departments' roles as contributors to the administrative research support offered to academic staff. The establishment of this team is considered to be a first step towards more multidisciplinary and professionalised research support.

Exactly how administrative support functions are shared between the Faculties and the central administration varies. The research management at UIA is placed both within the central administration, and locally. The local research administration is largely located at Faculty level, but in some cases also at department level. The Division of Research Management has, as of today, eight man-labour years, which extend from support for project development and implementation to internationalisation and copy editing, PhD education, and questions on ethics privacy protection, as well as different secretariat functions (Table 3).

Table 3. Man-labour years in research management at UIA, divided according to research administrative fields

	Research management total at the Faculties	Division of Research Management
Project development		
Research administration	2.75	2.00
Finances	1.20	0.10 (+ 1 man-labour year in the Division of Financial Services)
Project implementation		
Research management	5.20	0.25
Finances	2.85	0.05
PhD administration	3.95	0.95
Other work tasks within R&D	2.30	4.65
Total man-labour years in research management	**18.25**	**8.00**

Several Faculties note that the research administrative support has improved in recent years. The general feedback given is nonetheless that there is still a need for more research administrative support, and especially locally, as close to the researchers as is possible. The Faculties´ research management currently has several tasks. Nobody works with project support alone. It has therefore taken time to raise this particular kind of expertise at the Faculties. There must be sufficient resources available if the Faculties' expertise with regard to project support (project development

and implementation) is to be increased. The involvement of administrative personnel in the project, preferably as early as possible, is a decisive factor for the success of the projects. This message must be communicated by the academic management, including deans and heads of department. The Faculty management must actively ensure that the project is implemented and integrated along both academic and administrative lines.

Where do we want to be? – Vision for 2027

A professionalised value chain of research management.
In 2027, all administrative support functions contribute effectively to research projects as part of the project support team, in such a way that researchers feel that the administrative part of projects is easily manageable. UIA's Division of Research Management is characterised by a value chain of research administrators. The Faculties' research administrations work closely with the academic environment, and are well acquainted with the fields in which the researchers work. They are prime movers in application processes. The research management in the central administration has expertise in areas which not every Faculty is able to and, through dialogue with the EU and the Research Council of Norway, is familiar with the trends in the range of instruments in general and EU programmes and announcements in particular. The Central Administration's research management delivers services in connection with the application process and contributes to the development of extensive applications such as centre and EU applications, as well organising skills development measures for the researches and the research management, and contributes to a good flow of information and development of *best practice* between the Faculties. The research management at UIA shall assist the academic staff and thus be an active contributor to their work as lecturers and researchers.

A knowledgeable administration
The Division of Research Management at UIA is not only skilled at sharing knowledge internally, but is also adept at bringing in knowledge from the sector in general, for example from other universities. NARMA – the Norwegian Network for Research Management – shall develop a skills development programme for research management nationally. UIA has taken on the responsibility of developing the programme and will also be one of its users.

Infrastructure and tools
The research management staff have good digital tools both for project teamwork and project and financial management. UIA has tools that make it possible to both save and make available research data. The Division of Research Management possesses a good overview of available infrastructure which can be found at UIA, ref. the chapter on research infrastructure.

Facilitating for academic and administrative multidisciplinarity
The Faculties' research advisers can also serve as spokespeople for their academic environments. They can represent the environment in its contact with the region, but also when interacting with other Faculties. They are thus a part of increasing multidisciplinarity and co-creation with the region. The Division of Research Management at UIA also has knowledge concerning announcements by the way of education, and is a contributor in the connection between education and research.

Differentiated support
The research management support is adapted to the research group and centres' level of ambition. It is important that centres and well-developed research groups have a strong local research management which provides support within the group's fields, and is an active contributor to

application writing, amongst other things. During the next ten years, there will still be a need for external consultants in project development and project implementation. At the same time, the Division of Management at UIA will learn from the external consultants and, to an increasing extent, supplement the consultancy work in such a way that project expertise is built up. It is still the researchers who have the main responsibility in the project development, and the applications must be written in collaboration between the academic environment and the administration.

Larger projects

The institution needs several administrative project managers who can contribute to the implementation of larger projects. Dedicated project leaders should be employed who will ultimately become self-financing. To an increasing extent, it should also be feasible to bring in dedicated project positions from other administrative departments, who can also work with communication and dissemination. These will, in the long-term, be self-financing in the sense that they are financed by external project funds.

What must be done to arrive at this stage? – Measures for the years to come

- The administration exists to serve the academic staff and their work, and the culture reflects the sense that all links in the value chain are of equal important. The culture is built up in the sense that the advantages of utilising each other's professional knowledge are seen, and thus the administration's services for the academics are recognised. The University Management is focused on building up this culture.
- The Faculties must strengthen their local research management so that they can work in a dedicated fashion with project development and implementation. The Faculties are equipped in such a way as is most expedient, but there must be at least one man-labour year dedicated to project development and dissemination, and sufficient resources available for project implementation.
- A knowledge-based and sharing culture is to be further developed between all parties which contributes to administrative support for research.
- The Division of Research Management will seek to actively increase its expertise in order to provide the best possible services for the academic staff.
- EU consultancy is a complex area which is in a constant state of change. Those who have this as their field of work must be able to exercise sufficient focus in order to cultivate the requisite expertise to be able to provide adequate support to the Faculties.
- The project support team must be built up further so as to provide holistic support to research projects from all relevant administrative units.
- How UIA can, to a greater extent, be present in Brussels for the purposes of having a more visible profile, a better flow of information and the possibility to influence H2020 and other EU programmes, must be assessed.

Research infrastructure

Where are we today? – The current situation

A good research infrastructure comprises both of places to interact and equipment needed to carry out the research. It is important that the research infrastructure facilitates for the effective execution of the research in question. Arenas must be created which facilitate for research collaboration beyond the usual structures. The environments must have simple access to good equipment, and the structure should promote innovative cooperation between different expert groups.

The research infrastructure at UIA has developed well in recent years. The construction of Mecatronics Innovation Lab (MIL) at Campus Grimstad commenced in spring 2016, and MIL will open in the summer of 2017. The objective is to develop a world-leading centre for innovation, pilot testing and technology qualification within mechatronics and other closely related fields. The concept for the centre is the co-location of the industry's R&D and innovation activities together with the university's teaching and research. A central element here is the joint test and laboratory facilities for research, development and testing of new technology and new projects. In addition, the establishment of a health technology lab, I^4Health, is being worked on. I^4Health is conceived of as becoming a national testing and development centre for innovation within health and care services at Campus Grimstad. It is a goal that I^4Health shall be a meeting point for innovation which will contribute to economic development and innovation in both private and public sectors. The Board has given the University Director the authorisation to work further with the plans for establishment.

It is suggested in the action plan for strategy 2016-2020 that a *co-creation workshop* shall be established during the course of the strategy period. This shall be a creative social arena in which students, lecturers, researchers and external parties meet across subject lines, departments and Faculties, and collaborate with regard to the challenges which exist in society. It is intended that this, in the long run, shall occupy a physical location. Almost all of the Faculties report that they lack offices, which results in PhD students often being placed apart from their academic environment. It has been decided that extra floors will be built in buildings F, G and J at Campus Kristiansand during the next few years.

Where do we want to be? – Vision for 2027

If UIA is to succeed with its ambitions concerning infrastructure development, we are dependent on active participation in national political processes. We must work actively towards the government and the Research Council in order to achieve our objectives. It is therefore completely essential that, by 2027 (and preferably by 2020), UIA will have developed a holistic, long-term plan for infrastructure development. This should not only concern itself with UIA's needs within the campuses, but also which infrastructure challenges we must solve so that we can collaborate better with different regional bodies.

In the long-term planning, we should consider how we are to collaborate and utilise private market operators and what opportunities we have to make use of the research infrastructure that others have, or to invite them to us. Campus Grimstad and Campus Kristiansand have two different contracting builders. How can we best cooperate with these in order to achieve a development that serves the interests of everybody?

Physical infrastructure:
By 2027, UIA will have developed a holistic long-term plan for infrastructure development. The MIL lab and the I^4Health lab are well established and used actively both by UIA, the region, and international collaborative partners. The co-creation workshop has become established as a

networking centre in the region, and is important in UIA's collaboration with the region on a project level. The workshop has also been important in the recruitment of students to research projects, which is a widespread practice at UIA. The Faculties have larger buildings which have provided the opportunity for better research and international collaboration. In particular, centre-based activities have been facilitated, with arenas suitable for environments to interact across Faculty lines.

Gimlemoen's recreational areas are, to a great extent, utilised well, and are suitable for both sports, concerts and research dissemination in new ways. The Nature Museum serves as an integrated part of UIA where there is a high level of dissemination activities aimed at children and youth. Increased internationalisation has also brought with it possibilities for establishing an international guest house.

UIA has utilised resources in the region in other ways, and uses it as a "laboratory" in the sense that access is provided to public services (community care, hospitals etc.). The development of Helsebyen ("Health Town") Eg is a central component of this, and the collaborative solutions involved in join laboratories is established.

Technical infrastructure and databases:
The development of research activity brings with it new needs, such as, for example, data processing and storage capacity, as well as new requirements for data analysis. The development of tools for "deep learning" or "machine learning" happen so quickly that it is quite possible that researchers from almost all disciplines will come to require access to both high data storage capacities and integrated machine learning applications for meeting the data analysis needs of the future. Access to databases and registry data is an important factor for some research environments. With good long-term planning and the willingness to prioritise environments undergoing growth, it has been possible to facilitate for needs which support the quality of research.

UIA has developed an overview of available labs and equipment, which ensures that their utilisation is as effective as possible. UIA has also facilitated for activity across Faculty lines to a greater extent than has previously been the case.

What must be done to arrive at this stage? – Measures for the years to come

- Active political work is carried out at a national level.
- The needs for infrastructure are assessed and a holistic long-term plan for infrastructure is to be developed.
- An overview of labs and equipment, and their availability – i.e. reservation/ordering options – is to be drawn up.
- Areas which can be used as joint laboratories/centres for interaction are to be identified.
- Good contacts are to be established with the public sector and regional trade and industry for collaboration regarding regional laboratories.
- There should be collaboration with the public sector and regional trade and industry in connection with MIL and I[4]Health.
- A plan is to be drawn up detailing how conferences and other large-scale arrangements can be held.
- The use of the recreational areas at Gimlemoen is to be planned.
- A plan for the Nature Museum and dissemination to children and youth is to be drawn up.

Appendix

UIA's development during the last ten years – A retrospective

UIA became a university in 2007, and during the transition from university college to university, it was important to develop the research activity at the institution. During the first years after UIA received university status, the institution focused on increasing published research results, increasing the rate of associate professor status, and developing PhD programmes.

Table 4. Key indicators for research in 2007 and 2016

	2007	**2016**
Publication points per academic man-labour year	0.5	1.02
Proportion of scholarly academic employees with associate professor status	59%	70%
Number of PhD contracts	68	213
Number people who completed their PhD	2	26
Revenue from RCN and EU	19 million	51 million
BOA revenue related to research	~ 15 million	21 million
Students per academic man-labour year	15.19 (2008)	19.68

Source: DBH, UIA's Division of Human Resources, UIA's Division of Financial Services

Publishing measured in publication points has more than doubled since 2007 (see Table 4). UIA's academic publications, measured in "scholarly output" in the world's largest research publishing database SCOPUS, have increased by nearly 500% when comparing the periods 2004 to 2006, and 2014 to 2016.
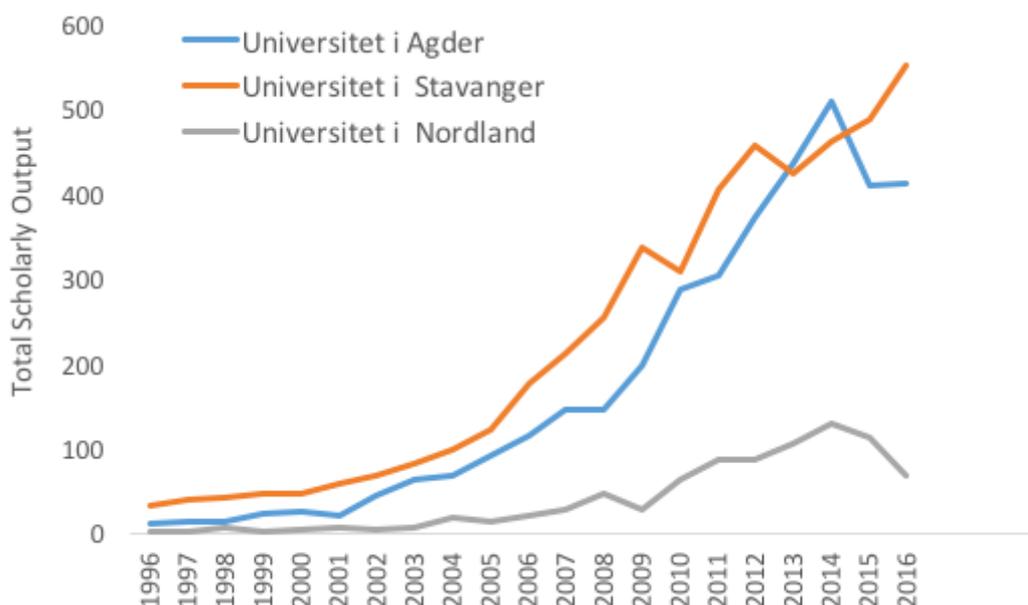
Figure 3. The academic production (registered in SCOPUS) of the new universities from 1996 to 2016.

This quantitative increase can be attributed to many factors, including an increased number of academic employees with research competence, more PhD candidates, an increased share of the total number of publications in international journals, and increased cooperative activity both nationally and internationally.

In the coming years, we will focus more on qualitative indicators related to the impact of research. This will be decisive for our increased competitive ability as an institution of research (Table 5).

Table 5. Quantitative research indicators. (2012 to 2017) SCOPUS

	Publications	International co-authorships	Publication ratio in the world's top 10 journals	Publication ratio among the top 10% most cited in the field	Field-weighted citation frequency
UIA	**2371**	**53.1%**	**24.5%**	**9.3%**	**1.43**
UiS	2679	44.3%	31.4%	11.3%	1.38
UiN	518	53.3	33	14.4	1.45
Norway	106.469	55%	35.4%	16.7%	1.63

Source: Data from SciVal, and based on the SCOPUS database. The global average for citation frequency is field-weighted, and scaled to 1.0. SCOPUS, as a source of data, does not cover academic books written in Norwegian. The data was retrieved on 30 June 2017.

PhD programmes are fundamental to our further development as a research institution. During the last ten years, there has been a large emphasis on developing PhD programmes, and today all of UIA's six departments have ongoing PhD programmes. Research groups are increasingly connected to one or more PhD programmes. The number of ongoing PhD contracts has tripled since 2007, and the

number of cadidates achieving their PhDs has increased considerably. Our development as a research institution and the quality of our research education are closely connected, and depend to a great extent on vital, inclusive research groups.

When updating the Strategic Plan in 2012, a new goal was set to establish research groups in all departments at UIA. The differences in size, composition and function between the research groups are still considerable.

When updating the Strategic Plan in 2012, more emphasis was placed on **developing larger research projects**, preferably with international involvement, such as in projects for the Research Council of Norway (RCN) and the EU. Revenue from RCN and EU projects has increased during recent years. The same applies to revenue from contribution activities and contract work. Participation in regional, national, and international projects contributes to increased network building and research quality. Increased research funding and participation in projects has also led to the organisation's increased focus on carrying out research projects.

Cooperative interaction and cooperation with the working and business sectors in the region is important to UIA, and is an important part of UIA's strategy and planning for the coming years. UIA's largest aim related to infrastructure, which will contribute to collaboration with the region's business sector, is the Mechatronics Innovation Lab (MIL). MIL will be a world-leading centre for innovation, pilot tests and technology qualification in mechatronics and other related fields.

UIA's Board has prioritised some research areas. The aim has been to develop these areas into fields within which UIA has a leading position on a national, as well as an international, level. **Areas of commitment** for 2017, as decided by the Board, include the Centre for Integrated Emergency Management (CIEM), the Centre for Ehealth and SFI Offshore Mechatronics.

The development of our research activity must be seen in **relation to UIA's offer of education.** Together with the development of research activity, the number of students at UIA has increased considerably. Data from the Norwegian Centre for Research Data show that the number of students at UIA has increased by 6.5% per year for the last five years. The number of employees has also increased, but not at the same rate. The result of the rapid growth in student numbers combined with the limited increase in academic positions through external funding is that we are now the university in Norway with the highest number of students per academic employee.

The World Around Us

The universities are increasingly seen as engines for societal development. In this context the challenge we face is also an opportunity. The region expects UIA to focus on relevant issues in the local community. At the same time, our development as a research based university depends on our ability to produce research which answers questions and challenges of national and international significance. The university's regional placement and ties are not disadvantageous in this context. Strong regional ties and commitment must be combined with conscious development of international networks, utilization of access to unique data or other advantages, and recruitment of researchers that are conscious and active in their approach to making connections between the region and the outside world.

Through a structural reform (Meld. St. 18 (2014-2015) - Konsentrasjon for kvalitet - Strukturreform i universitets- og høyskolesektoren) it was decided on a national level to start a process that led to mergers of many universities, university colleges and research institutes. Many of our sibling institutions will in the coming years be busy with establishing efficient organisational structures for the new merged organisations. This will lead to fewer and larger units in this sector. What position will UIA take in a changed sector?

The total research production across the world has increased almost exponentially during the last 20 years, but not all research that is published and presented has the same influence on its accompanying field or on the development of society. While the amount of available research results rapidly increases, the world around us has become more interested in how society can benefit from research (impact). This is reflected in the direction taken by the larger research funding programmes, such as the EU's Research and Innovation Programme. Even though we have a regional foundation, our research is to a high degree judged against what is produced internationally at the leading environments.

Many European universities have experienced dramatic cuts in their financial ability in the last few years. In Norway we are still fortunate that a large amount of university funding is secured in the form of a base funding from the state. At the same time, signals from the Norwegian government indicate that the general growth in resources for research will level out. We can also expect that a larger amount of funding will be exposed to competition, even in Norway. *Quality, aimed efforts, prioritizing, narrowing focus and incentives* are keywords that spokespersons for research politics repeat. It is highly doubtful that this course in research politics will dramatically change in the near future. It is more likely that Norway will start imitating the other countries that we compare ourselves with, and that we will experience relatively dramatic changes related to research funding. It will likely become more exposed to competition. Combined with the current base funding, this kind of development will force UIA to prioritise research efforts where 1) we already have a significant degree of success 2) the research is linked to one or more study programmes and 3) we have a significant possibility of securing external funding. Width and narrowed focus in research activity are not incompatible for a regionally founded university with an international perspective. On the contrary, it is likely that only through increased external funding of ambitious research programmes in a few prioritised areas we will be able to create sufficient room for action, further developing our research that supports our research-based education programmes and contribute to development in the region.

Increased availability and transparency for research and research results has become an important international topic during the last 10 years, and will be even more important in the future. Publishing research results so they are as available as possible (*Open Access*) is a wish that both inspire people to find new solutions and challenges existing business models in research publishing. In the future there will also be more attention around making research data available, so that data which was collected in one study can be used by other environments for other types of studies. The EU's new vision for ERA - European Research Area, is *Open Science – Open Innovation – Open to the World*. This challenge must be answered by the universities and the institutes where research takes place, either at each individual institution or as a cooperative effort across institutions to develop joint solutions.