

Science with Impact

Strategic Plan 2021-2025 | Faculty of Science





Science with Impact

This Strategic plan provides a translation of the strategy of Radboud University for the Faculty of Science

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Mission statement

Our **mission** is to push the boundaries of scientific knowledge through outstanding education and ground-breaking research. In doing so, as a leading Faculty of Science we take our responsibility as a key actor in helping to find solutions for major societal and scientific challenges.

Good science¹ is what we stand for. This means cutting-edge science at the highest level that is both scientifically and societally robust and performed with the principles of open science in mind. Good science can only be achieved through the commitment of everyone, both individually and as a team. It is the fruit of diversity of knowledge and a variety of approaches and it thrives in an inspiring environment.

Through our **research**, we strive to push the boundaries of scientific knowledge in order to arrive at creative solutions for the challenges that lie ahead in the coming decades, both scientifically and societally. Therefore, as a community of researchers, students, and colleagues working in the professional support services, we seek a close connection with our environment, both locally and globally.

Through **education**, we strive to share expertise, knowledge, and the principles that everything that we stand for with our students. They can thus push their boundaries academically and scientifically, and optimally develop their 'future self' on a global and diverse playing field. We offer them scientific knowledge at the highest level and a rich learning environment based on diverse approaches. They leave the university as a new generation of professional researchers and as young academic professionals, who are ready to take responsibility in tomorrow's society.

¹ Longino, H. How values can be good for science, in: P. Machamer and G. Wolters (eds.), *Science, Values, and Objectivity*. University of Pittsburgh Press (2004); Gibbons, M. *Science's new social contract with society*, Nature 402 (Suppl.), C81-C84 (1999); Jerak-Zuiderent S. et al. Goede wetenschap. Een visie van binnenuit, document resulting from the project *Achieving good science. A cross-disciplinary study*, ZonMw project 445003003 (2021)



People

People are key to the Faculty's mission, together with our unique research facilities and teaching environment. Without their skills, positive attitude, and commitment, we cannot accomplish our mission. Thanks to our community of academics, students, and colleagues of the professional services, we are able to push the boundaries of knowledge.

In our Faculty, everyone is committed to sharing knowledge and expertise and feels free to express differing points of view; we feel safe learning from mistakes and feel responsible for addressing any undesirable behaviour or situations. New colleagues and students feel welcome and are well integrated into our community. Good science can only thrive in a community where mutual trust is the driving force.

Trust, however, is hard to achieve and easy to lose. All of us need to take responsibility for this, however big or small that contribution may be, to ensure that we maintain a safe community. This is not always easy or straightforward, and it requires courage and personal leadership. Personal leadership means constantly reflecting to optimally develop our own professional careers.

For those who have a responsibility as a supervisor in the Faculty, good leadership based on courage, openness and connectedness is essential to safeguard an open-minded and diverse community where good science can flourish. We will build further on activities that have already been launched and explore new possibilities through the following actions:

ambitions actions

- We support our academic and non-academic staff in further developing their leadership and soft skills by actively participating in workshops and training courses.
- We consider these soft skills to be an essential requirement for our staff.
- We provide opportunities for our academic and non-academic staff who wish to switch or change focus in their career.
- We expect all of our academic staff to be actively involved in teaching as well as in research and academic leadership in a way that is appropriate to the stage of their career.



This inspiring mentality, together with our unique research facilities and teaching environment, will ensure that our faculty remains the place to be for young upcoming talent from all over the world – people who are prepared to commit to our values and standards. Remaining attractive to young talent is essential for our continued success.

Diversity matters

It is not only a basic societal advantage, but also a necessary condition for good science. The integration of different points of view which are inherently associated with good science can only be accomplished in a diverse community. While this may sound obvious, it is not easy to achieve. A truly diverse community is not just determined by balanced numbers. It also requires inclusive behaviour that takes into consideration a wide range of perspectives and needs. The faculty's Gender & Diversity Committee has already paved the way, but we acknowledge that greater awareness is needed on gender and diversity issues.

Recognition and appreciation

Recognition and appreciation are crucial for fair and transparent assessment procedures. We strongly advocate a novel approach to the evaluation of our academic staff, considering all aspects of research, teaching activities, and academic leadership. This represents a radical shift from the trend in recent decades, when science was characterised by individual competitiveness, underpinned by assessments and scientific evaluation procedures that mainly focused on quantitative parameters related to individual performance. This has, for example, led to our academic staff experiencing a disproportionate workload.

We have already taken the first steps in this approach by revising our evaluation criteria. Our new approach to evaluation also implies paying more attention to – and appreciating more – our non-academic staff. Moreover, we acknowledge all aspects of good leadership, including soft skills.

² VSNU et. Al. *Room for everyone's talent: towards a new balance in the recognition and rewards for academics.* Position Paper, 2019.

ambitions
actions

- The Gender & Diversity Committee will broaden its scope to include multicultural issues.
- We actively monitor the gender and cultural aspects of diversity and take specific measures if these are required.
- We will continue to revise evaluation processes for both our academic and non-academic staff, bearing in mind the position paper 'Room for everyone's talent'² An acceptable workload for all will be key.
- We proactively provide information about these processes.
- We celebrate significant team achievements in science and education.



Education

We encourage students to develop their future self and we support them in their personal and academic growth. We stimulate them to anticipate future opportunities and push their boundaries by challenging them intellectually with our courses and by introducing them to research at the leading edge of science. We also encourage them to participate in the faculty's active student community, for example in study associations or in student participation bodies. We aim to train more than just the next generation of researchers; we also stimulate our students to explore a broad range of career possibilities. In addition to disciplinary courses, we already offer courses on reflection, sustainability, education, entrepreneurship, and language skills as part of our core curricula.

We believe it is essential to maintain good personal contacts between students and teachers. We consider our community of teachers and learners to be very valuable and we cherish it as student numbers grow. Our open scientific environment and cutting-edge facilities enable our students to achieve their personal and collective goals.

While some of our students extend their study time to become involved in other activities, we are committed to making sure that it is possible to complete the programme in the scheduled time.

ambitions
actions

- We maintain small-scale teaching activities in our programmes.
- We streamline and increase the coherence of our skills and reflection courses.
- We safeguard our high standards of student support and student facilities.
- We identify obstacles to the successful completion of our programmes in the scheduled time and do our best to mitigate them.



In our Master's programmes, we build on our strengths in research. These programmes should be attractive for our own Bachelor's students as well as those from other universities, appealing to future researchers and academic professionals alike. With our Science in Society (SiS), Science, Management, and Innovation (SMI), and Science Education programmes we guarantee an explicit link to society, and we offer industrial and societal internships. We prioritise the quality of our programmes and aim to grow only where this is feasible in response to demands from society or from our students. International students and international experience make a valuable contribution to our academic culture.

One area where there is demand for growth is in technological Master's programmes that bridge the gap between technical universities and fundamental research. We are convinced that we can fill this gap due to our strong profile in fundamental science and cutting-edge facilities.

ambitions actions

- We increase the visibility of our unique Master's programmes in order to attract motivated students from the Netherlands and abroad.
- We maintain and where possible develop current and new Master's programmes for academic professionals, with a particular focus on sustainability.
- We are creating three new technology-based programmes.



Our Faculty is an inclusive and diverse community of learners and teachers.

We welcome everyone regardless of their gender, race, religion, sexual identity, socio-economic or cultural background. Everyone should feel welcome and safe at our Faculty. We maintain our tradition of welcoming first-generation students and are proud of it.

In order to meet today's societal challenges, we intend our education to reach beyond our student population. We aim to offer our knowledge to society, to provide scientific authority on societal issues and to be a partner in debates. As learning never stops, we are committed to lifelong development initiatives. Finally, we aim to address the growing shortage of secondary school teachers in scientific disciplines by training tomorrow's teachers. Our Radboud Pre-University College of Science (PUC) is instrumental in our contacts with secondary schools, both in inspiring young and talented people to study natural sciences and in keeping their teachers informed about recent scientific developments.

ambitions actions

- For those disciplines with a poor gender balance, we aim to recruit in such a way that we achieve balance in the teaching staff and student cohort.
- We identify ambassadors for under-represented groups and empower them to reach out to these groups.
- We develop initiatives for international classrooms, bringing together students from around the world using distance learning.
- We are restructuring our teacher training to increase the number of future teachers.
- We offer (online) courses outside the university, on our own or with partners, and we contribute to life-long-learning initiatives such as the Radboud Academy.
- We strengthen our links to secondary schools through the Radboud PUC of Science.

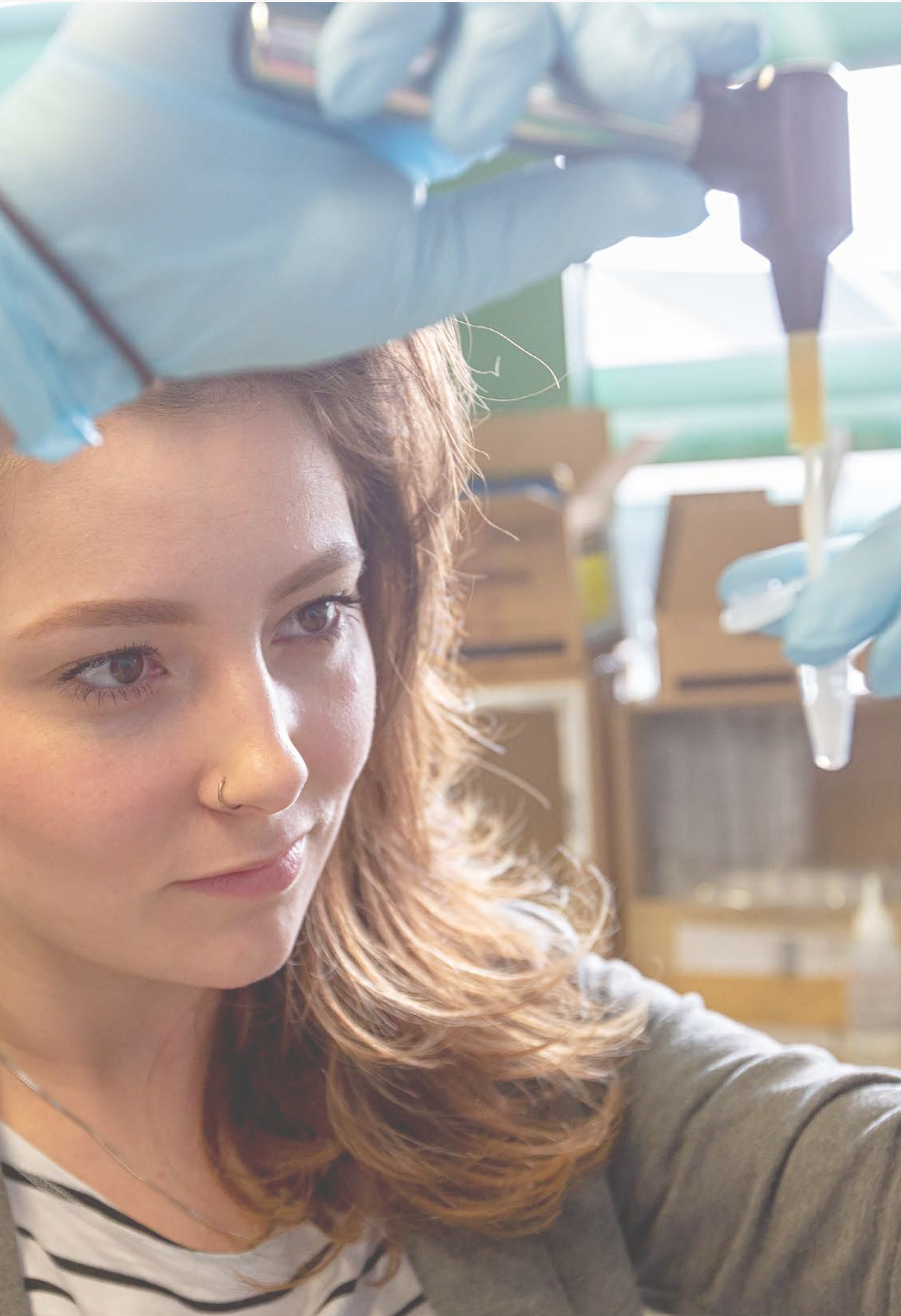


Research

Good science is what we stand for: cutting-edge science that is at the highest level, both scientifically and societally robust, and performed with the principles of open science in mind. We combine fundamental research on the edge of what is currently known with research that is driven by the major scientific and societal challenges we anticipate in the future. In doing so, we push the boundaries of scientific knowledge with an open mind, exploring opportunities for ground-breaking new insights. Our research is interdisciplinary and always based on a strong disciplinary foundation. It inspires our teaching programmes, and students play an integral part in our research as they become the next generation of academics.

ambitions actions

- We continue to organise our research in interdisciplinary research institutes.
- We stimulate new initiatives designed to address scientific or societal challenges that extend across the borders of research institutes, for example in Green IT, Data Science and Life Sciences.
- We continue to initiate and participate in interfaculty collaborations to increase the scope and impact of our research.
- We invest in our unique research infrastructure, which we view as an important asset for carrying out ground-breaking research.
- We will develop new research lines in technology that are based on and inspired by our fundamental research expertise.



We value the individual passionate scientist as the cornerstone of our research, and as a crucial player in team science. Team science, achieved through the diversity of knowledge and approaches of our scientists and students, is essential if we are to address both current and future scientific and societal challenges. We create an open environment, where everyone feels responsible, invited, and enabled to contribute to successful research. We encourage our scientists and students to participate in national and international research collaborations and to connect to our societal environment, which extends from the local to the global. This creates a 'golden bridge' towards research with significant impact.

Good science requires the highest level of ethics and research integrity. This is why we strive to create a responsible research and innovation climate in our Faculty, based on open communication:

ambitions actions

- We invest in collaborative projects with diverse teams that can provide creative solutions to scientific challenges.
- We acknowledge and reward contributions to team science at all stages of scientific careers.
- We support strategic alliances in order to build networks in society, industry and government, both nationally and internationally.
- We support thematic research that has societal impact, with an emphasis on sustainability.
- We strive to continue our success in calls of the European Research Council (ERC), and to increase our success rate in Global Challenges and European Industrial collaborative research projects.
- We implement the FAIR principles for research data management.
- We stimulate research with 'Open Science' principles in mind.
- We encourage researchers to always reflect on the motivation and consequences of their research by offering opportunities for workshops and other activities related to ethical aspects.



Facilities and support

Our Faculty is housed in several adjacent buildings which, together with our unique research facilities, form a science hub on the north side of the green and sustainable Radboud campus. Our inspiring working and study environment is an asset for attracting new students and staff and retaining talented staff. It contributes to a rich learning experience, an inviting research climate, as well as an inspiring workplace and a meeting point for all staff and students. Our buildings are open, safe, easily accessible, and welcoming places where national and international meetings can be organised. Our research and education facilities stimulate collaboration at all levels and contribute to a learning community. We strive to maintain this inspiring environment, accommodating a growing number of staff and students.

ambitions
actions

- We improve the connectivity between our various buildings and facilities, both virtually and through the atmosphere in the buildings.
- We invest in expanding our offices and laboratory facilities, in accordance with the new campus strategy.
- We create alternative working and studying spaces, which are more flexible, making it easier to work and learn on campus, at home, or elsewhere.
- We stimulate teamwork by creating project spaces and hybrid online-live solutions.
- We invest in inviting social meeting spaces.



Our unique research and technical facilities are both a magnet for talent and an accelerator of scientific and societal impact.

We will continue to invest in our technical and infrastructure support facilities to provide cutting-edge digital and technical solutions for teaching and research.

The staff in our professional services are committed to effectively supporting the primary processes of research and education. By providing high-quality professional advice and excellent support, they have a significant impact not only on the overall functioning of the community and working environment, but also on the success of the Faculty.

ambitions actions

- We strengthen the embedding of both current and future research facilities in our research and education strategy.
- We strive to structurally embed our large-scale research facility HFML-FELIX as national research infrastructure.
- We develop customised research data management solutions for our researchers, keeping the FAIR principles in mind.
- We standardise support processes where possible, while allowing for customisation where necessary.
- We improve the availability of management information that stimulates higher quality decision-making.
- We continuously focus on improving support processes and minimising administrative burdens.
- We stimulate the development of soft skills, such as the advisory skills of our professional services.



We challenge you to probe
the boundaries with us.
And to think beyond them.

You have a part to play.