

Tech 2030

Faculty of Technical Sciences
Aarhus University



AARHUS UNIVERSITY





Photo: Jens Hartmann Schmidt, AU Foto

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Preface

A collaborative and mission-oriented faculty.

We provide high-impact innovative solutions for the green and digital transition for a resilient planet and future.

The Faculty of Technical Sciences (Tech) is a dynamic faculty, built on solid academic foundations, that delivers solutions through leading research, innovation, excellent teaching and actionable science-based advice – targeted to solving society’s most pressing challenges.

As the world faces profound geopolitical shifts and complex societal challenges, both calling for stronger resilience, Tech’s disciplines are more relevant than ever.

Being a collaborative faculty, we are deeply engaged in strong local, national and international networks and committed partnerships. Collaboration is a prerequisite for unlocking the interdisciplinary solutions that no single field can develop and deliver alone. We are part of, and contribute to, AU as a

comprehensive university that actively builds bridges between academia and society, knowledge and solutions.

Tech is a diverse faculty on many levels — in terms of its disciplines, locations, and the national and cultural backgrounds of staff and students. We welcome diversity and value it as an essential driver of innovation and breakthroughs in both research, innovation and education. We promote diversity, equity and inclusion to ensure fair opportunities for all. We value visible and invisible diversity – from gender and age to culture and nationality – and are committed to fostering an inclusive environment in which everyone can thrive.

We drive real-world change – by developing new crops, investigating animal welfare,

monitoring nature, air and water quality, uncovering Arctic pollution, advancing our understanding of genetics, building digital twins and smart sensory systems, and developing pioneering solutions such as living cement, cultivated meat and green energy.

At Tech, we collaborate in areas like food, energy, water, health, climate, nature, the environment, engineering and cybersecurity to promote resilience in a world facing resource scarcity, global insecurity and climate change. We create impact through our mission-oriented and innovative mindset, which we further strengthen through our commitment to ongoing innovation. We safeguard academic freedom and diversity of thought across the entire research and innovation spectrum, encompassing high-TRL innovation and curiosity-driven basic research.

The disciplines at the heart of our research and educational activities – including agrifood systems, the environment and engineering – are high on the agenda of

both Danish and European decision-makers. In addition to our proven expertise in developing cutting-edge technologies, we also span entire value chains – from healthy animals to nutritious food, from fields to air and water, from buildings to resilient infrastructure, and from sidestreams to new energy and materials – enabling us to deliver the solutions society wants and needs, now and in the future. Our research and science-based advice address issues of societal importance, and we play a key role in informing the public debate. We always strive to reflect our commitment to scientific integrity and meaningful two-way engagement.

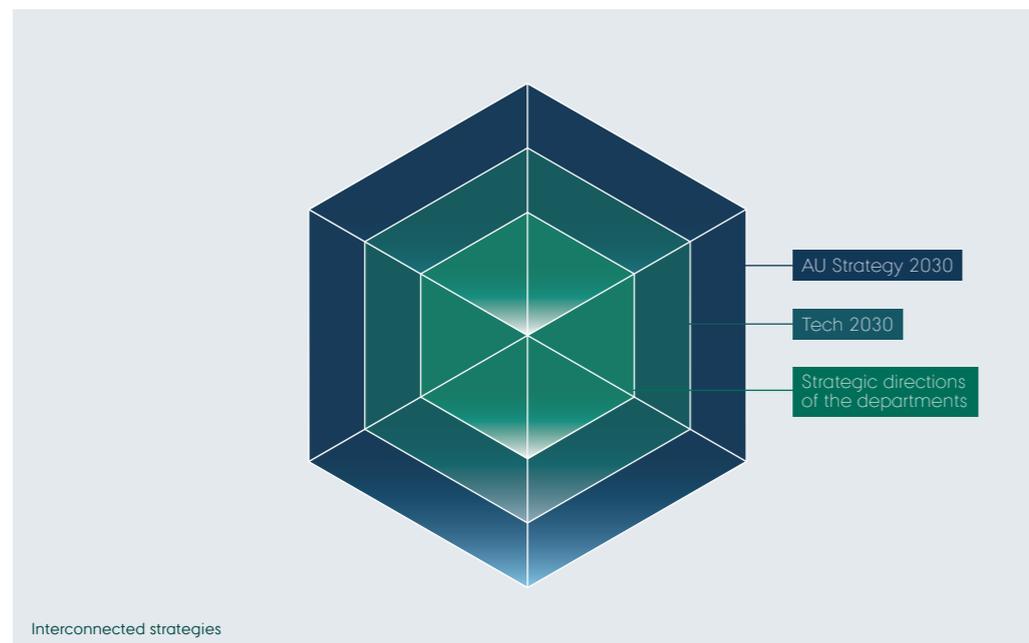
In the years ahead, Tech will continue to bring innovative solutions to market, tackle global challenges, contribute to increasing Europe’s competitiveness and resilience, and — last but not least — foster the talent we need to succeed with these objectives.

Strategic context

AU's Strategy 2030 is the foundation for Tech 2030, with its focus on research, education and collaboration as the starting point for developing individuals, sharing knowledge and fostering positive societal transformation – and with an increased focus on innovation, sustainability and digitalisation.

The vision of Aarhus University is to be an international research-intensive and campus-based university that develops individuals, shares knowledge and fosters positive societal transformation, grounded in foundational research, education and collaboration. Aarhus University is determined to generate new insights and leverage its comprehensive disciplinary reach to develop research-based solutions to complex societal challenges.

Leading up to 2030, the departments at Tech will develop their own strategic directions, closely aligned with the priorities outlined in Tech 2030 and AU's Strategy 2030. The diamond symbol below illustrates how the strategic directions set for the university's three levels are interconnected.



Tech impact

Resilience is key in a time characterized by geopolitical realignment and the threat of climate change. Sustainability and green and digital solutions are prerequisites for real, long-term resilience. Innovation is the incubator that will ensure an independent Europe, and innovation grows when we work in a mission-oriented way across disciplines. This is how Tech creates impact in a changing world.

RESILIENCE:

In a time of political and environmental change, resilience is key. By resilience we mean the capacity of a society to maintain robust self-sufficiency even under strong external pressures of either economic, environmental, or political nature. Tech contributes through our wide range of disciplines, enabling access to critical, innovative, and competitive technologies, through research, research-based education, and research-based policy advice, for example by addressing how to ensure and uphold safe and sustainable supplies of essentials such as clean water, food, energy, and technology.

Our mission

Tech is a collaborative and solution-oriented faculty. We want to create the basis for green and digital solutions with high societal impact.

Our ambition

Over the next five years, our ambition will increasingly be aimed at contributing to the green and digital transition and the creation of a resilient society through research-based innovation. Going forward, we will strengthen our commitment to cultivating an integrated, mission-oriented and collaborative culture across our faculty.

We will enhance our societal impact by advancing research, education, innovation and science-based advice. Our solid foundation in disciplines across agrifood systems, the environment and engineering, combined with our committed collaboration with local, national and international partners, will ensure that we continue to fulfil our role in building a sustainable and resilient society.

Innovation and digitalisation are the transformative drivers, and we aim to embed these fundamental prerequisites for change even more deeply in all of our activities.

Our students are at the core of our faculty. We will foster a change-oriented, innovative and solution-focused mindset, preparing them to play a key role in developing and implementing the technologies and solutions society and industry need. In the years to come, we will welcome a broad range of curious and dedicated students through targeted recruitment, increased retention and meaningful education.

Our ambition, which is supported by the four focal points described below, charts the faculty's overall course.



INNOVATION:

Innovation is the systematic transformation of new scientific knowledge, research-based ideas, and significant advances in low-TRL technologies into products and services, as well as preparing graduates to bring innovation into the labour market. This is to ensure a responsible green transition, enhance global resilience, and competitiveness in a global market. As an innovative faculty, we will promote actions and a culture that lead to new ideas and solutions creating value for our surroundings.



MISSION-ORIENTED:

At Tech, the mission-oriented approach is about directing research, and innovation towards solving complex societal or industrial problems. To be mission-oriented means promoting a strong collaborative culture, interdisciplinarity, and strong collaborations, as well as understanding the need for leadership, governance, and management, which are all necessary to fulfil mission goals.

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TECH 2030

Four strategic focal points

The following four focal points have been developed and revised based on input from four focus groups, which comprise representatives from departments and centres across Tech. Building on these four focal points, the faculty leadership team will develop annual action plans to ensure that Tech 2030 is implemented effectively and integrated meaningfully across the faculty.

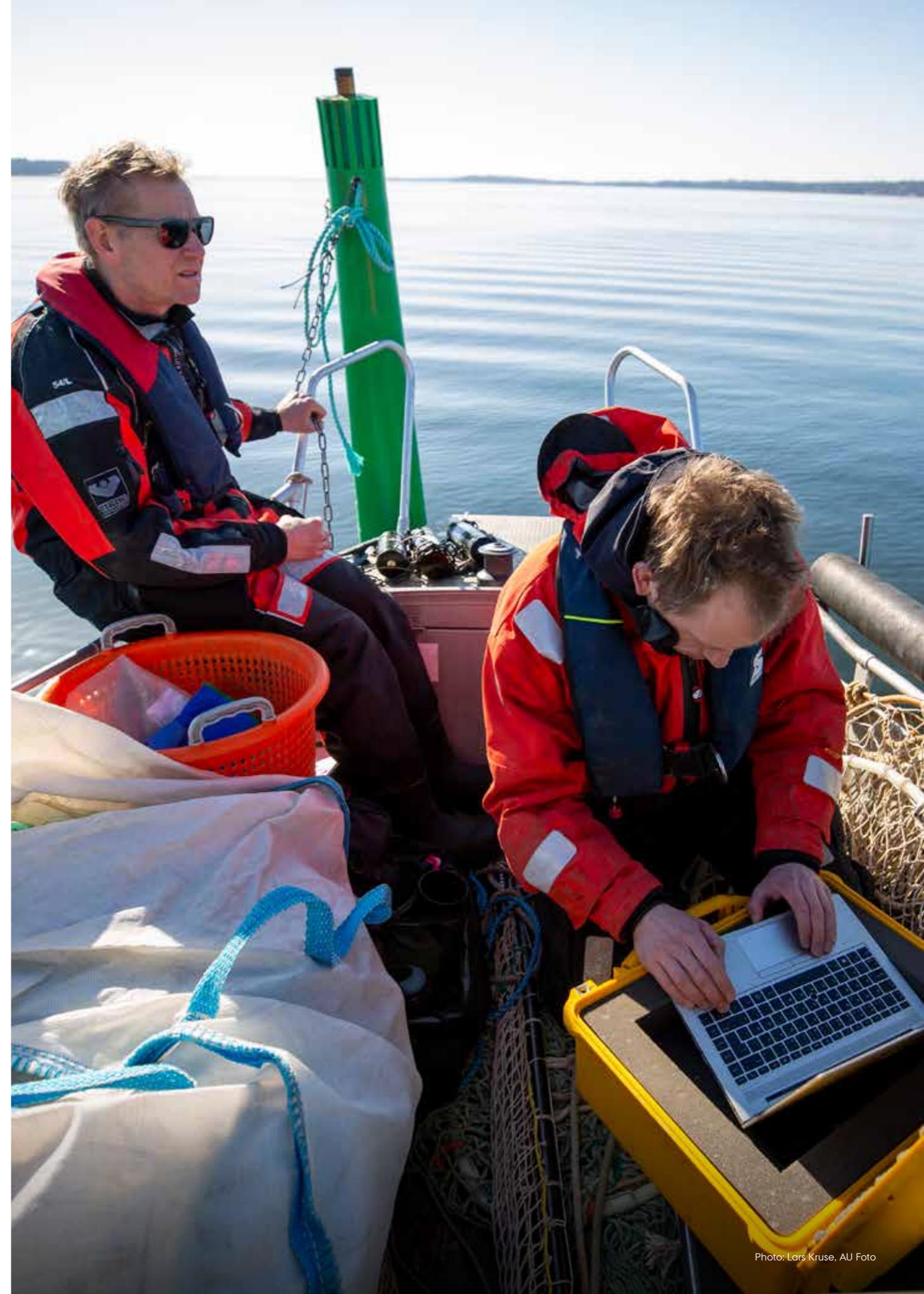
FOCAL-POINT 1:

We prioritise developing new partnerships and collaborations

In the years ahead, we will further improve our ability to collaborate. We will strengthen our interdisciplinary collaboration with other academic environments – both within and outside AU. We will work systematically to facilitate the sharing of knowledge, challenges and solutions across organisations and to foster mission-oriented partnerships aimed at creating maximum societal impact. We will become the preferred meeting place for different partners to incubate new ideas together.

WE WILL

- Prioritise collaboration with other academic environments both within and outside AU.
- Build strategic partnerships and work systematically to create organisational pathways to facilitate the sharing of knowledge, challenges and solutions between partners.
- Focus on mission-oriented partnerships with maximum societal impact.
- Establish Tech as a visible and sought-after facilitator of multi-party collaborations.
- Promote Tech as a meeting place for different partners to develop new ideas.



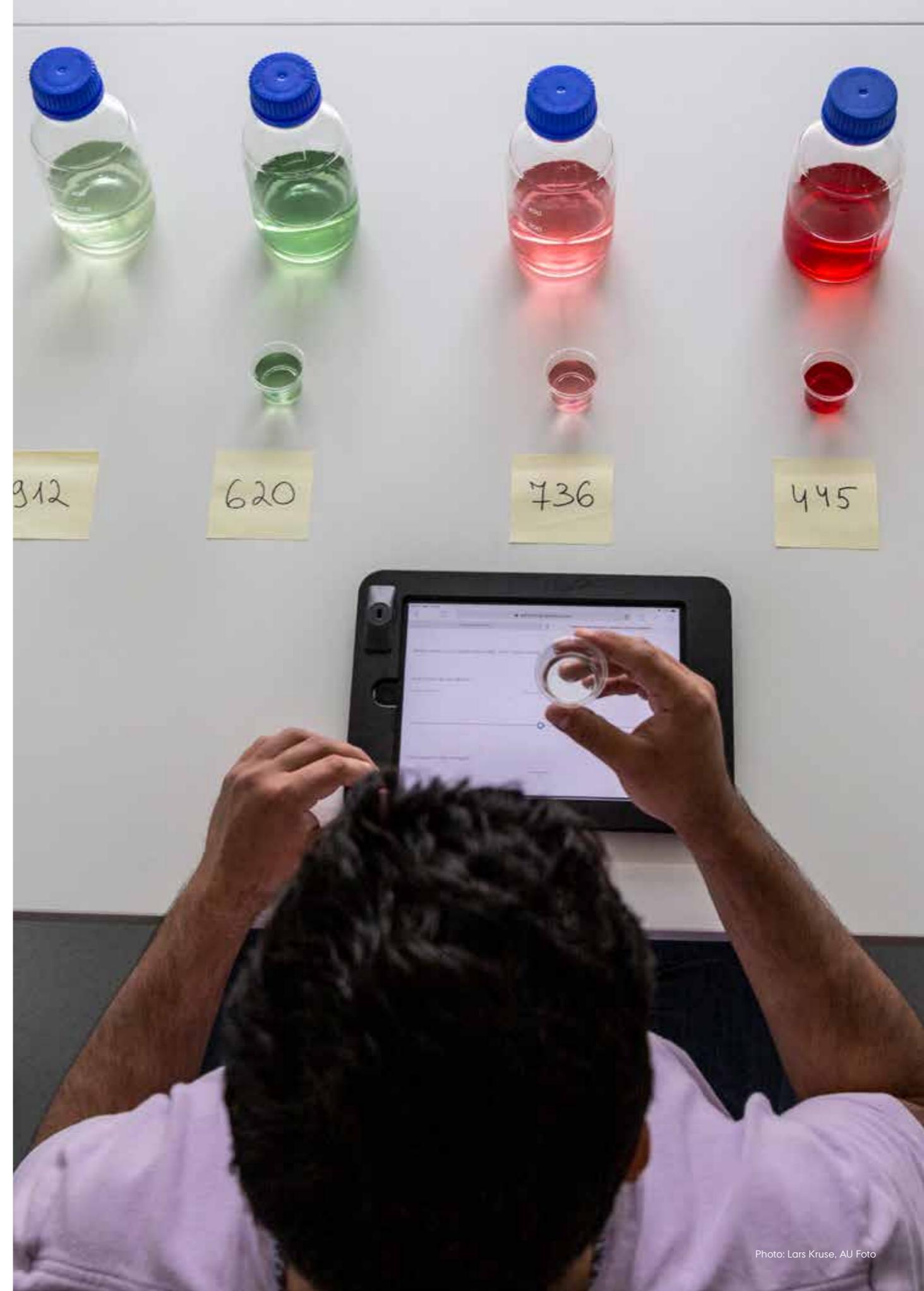
FOCAL-POINT 2:

We are a leader in research, talent development and science-based advice

Going forward, we will position ourselves as a trusted key contributor to science-based solutions that address complex challenges across the public and private sectors and society as a whole. Tech will actively support this ambition by strengthening its science-based advisory services, innovation and entrepreneurship in close collaboration with internal and external stakeholders. We will continue to build a resilient, agile research organisation that bridges basic and applied research with innovation to ensure relevance and excellence. To strengthen long-term capabilities, we will attract a diverse pool of new talent and invest in the development of our existing staff across all levels of the organisation.

WE WILL

- Prioritise both curiosity-driven and mission-oriented research that is recognised and respected globally.
- Prepare the organisation to have a mission-oriented approach, by establishing a strong governance structure, including impact assessment and guidance on the direction of research, advice and innovation.
- Meet talents where they are when recruiting and support their development in line with their individual needs as well as the needs of the faculty.
- Consolidate our position as the preferred national supplier of science-based advice by increasing and diversifying our research funding and continually improving the quality of our advice.
- Strengthen our innovation capability by expanding and diversifying our collaboration with external stakeholders.
- Build and acknowledge Tech's culture around talent development, science-based advice, entrepreneurship and innovation.



FOCAL-POINT 3:

We meet our students where they are

All students start their degree programmes with individual aspirations, ambitions, knowledge and competencies. To accommodate all our students, we need to know more about the competencies they possess when starting their degrees. Our degree programmes and teaching activities must engage and activate students and support their academic and personal development on the paths they choose. Research groups can play a valuable role in sparking this engagement—through research internships, thesis collaborations and co-creation activities that bridge education and research.

WE WILL

- Recognise and support students' academic and personal development by building on their individual needs, strengths and aspirations.
- Provide our students with the space and opportunity to engage in, and contribute to, solving major societal challenges in collaboration with other disciplines – and help them develop the skills they need to engage in fruitful interdisciplinary collaboration, which we must view as a core competence.
- Encourage innovation and entrepreneurship and build soft skills.
- Help students acquire high-level academic qualifications and capabilities.
- Foster a common culture for how we design degree programmes in support of these goals.



FOCAL-POINT 4:

We deliver impact through a collaborative culture based on trust and respect

We must foster a resilient and collaborative culture at Tech in order to successfully navigate a landscape of constant change and challenges and to enhance the individual's ability to deliver impact. A collaborative culture is essential for innovation because it promotes trust, respect and commitment to collective success. Sustaining a collaborative culture requires openness and ongoing dialogue, and it is crucial that we actively nurture this culture across the faculty and the university as a whole. Tech is committed to the inclusion of diverse voices to ensure that members of the faculty feel empowered to speak their minds, continue their learning and deal with the unknown. We are also dedicated to fostering an open-minded culture that overcomes resistance and learns from failure. While Tech will remain discipline-based structurally, the faculty is committed to fostering a culture of flexibility and openness to collaboration that overcomes barriers as well as driving and accelerating mission-oriented success.

WE WILL

- Be the collaborative faculty.
- Ensure that we adapt to the ever-changing needs and demands for solutions that our faculty can provide.
- Co-create with partners both within and outside AU.
- Develop and maintain a collaborative culture built on trust in and respect for each other at all levels.
- Support a culture that values diversity as a driver of learning, innovation and shared success.





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