From Research to Impact: Empowering Researchers Through the HAFIS Intrapreneurship Academy

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Abstract: This article presents the design, implementation, and preliminary outcomes of the Helmholtz Academy for Intrapreneurship (HAFIS), launched in 2023 with funding from the German Helmholtz Association. HAFIS addresses the persistent challenge of translating academic research into societal and economic impact by equipping researchers with entrepreneurial competencies and structured support for developing transfer-oriented projects. The nine-month programme combines milestone events, workshops, and individualised coaching to support participants from four Helmholtz centres in identifying, validating, and advancing research-based innovations. Structured around three key events—Kick Off, Mid Term, and Impact Day—HAFIS fosters interdisciplinary collaboration and enables researchers to apply entrepreneurial tools directly within their scientific practice. Guided by a human-centred, iterative design, the programme continuously evolves based on participant input to ensure contextual relevance and practical effectiveness. By June 2025, HAFIS had completed its second cycle, with a third beginning in September 2025. Initial findings suggest increased engagement, the emergence of early transfer initiatives, and shifts in institutional norms toward innovation-oriented research cultures. By embedding entrepreneurial thinking into research environments, HAFIS offers a transferable model for other institutions seeking to strengthen knowledge transfer and societal engagement within the academic sector.

Keywords: Academic Entrepreneurship, Intrapreneurship, Knowledge Transfer, Research Impact, Innovation Process

1. Introduction

Research and innovation are widely recognised as drivers of societal progress and global competitiveness. Research institutions—such as those within the Helmholtz Association—play a pivotal role in translating technological breakthroughs into practical applications (Kivimaa et al., 2017; Rasmussen & Wright, 2015). However, many research outcomes remain underutilised due to barriers such as limited entrepreneurial skills, insufficient understanding of market needs, and inadequate support structures (Hayter et al., 2018; Manthey et al., 2022). To address today's pressing global challenges, research institutions must adopt innovative strategies that accelerate the transfer of scientific knowledge into societal and economic impact.

In 2023, the Helmholtz Academy for Intrapreneurship (HAFIS) was founded as part of the Helmholtz Transfer Academies (HTA), with financial support from the Helmholtz Association of German Research Centres, one of the largest non-university research organisations in Germany. HAFIS aims to close the gap between research and practical application by fostering entrepreneurial thinking and action among researchers. To achieve this, it prioritises four central goals:

1. Empowering researchers to identify opportunities for own transfer projects that resonate with them personally, to advance them towards concrete ideas and implement them while maintaining or increasing research effectiveness.
2. Having participants achieve tangible results with their transfer projects to receive external appreciation and experience self-efficacy.
3. Strengthening the transfer culture in participating research organisations by promoting sustainable, problem-solving skills that lead to project success and, thus, are communicated.
4. Contributing to qualifying researchers for their future careers and highlight alternative career paths beyond research.

Unlike many existing academic entrepreneurship incubators which start with researchers who already have a startup-idea, HAFIS addresses a critical yet often overlooked gap: the early-stage translation between research and validated application. While it's encouraging that entrepreneurial support structures are becoming more common at research institutions, these initiatives frequently fail to resonate with researchers who have little to no background in economics or entrepreneurial thinking. The stages between a promising research result and a viable application are often underrepresented and rarely supported in a structured, researcher-centred way (Manthey & Terzidis, 2024). Moreover, researchers typically encounter entrepreneurship only indirectly—through supervisors, peers, or external events—making it unlikely for them to explore its relevance on their own.

To bridge this divide, HAFIS invites researchers to uncover the application potential within their own work and to develop ideas that could lead to real-world impact. This is facilitated through a structured, reflective process grounded in Action-Based Learning (Bell & Bell, 2020; Freeman et al., 2014). Rather than relying on theoretical instruction alone, HAFIS integrates entrepreneurial training into participants' ongoing research activities. This approach emphasises experiential engagement, real-time application, and structured reflection—making it highly suitable for navigating the uncertainties of early-stage transfer. Participants actively shape their own projects, receive tailored feedback, and iterate based on lived experience. This pedagogical model ensures that entrepreneurial thinking becomes embedded rather than superficial—enabling researchers not only to think differently but to act differently, transforming their research into viable solutions with real-world impact.

The results are tangible. Participants described HAFIS as "a space for growth beyond the lab" that enabled them to build networks and develop new capacities. Others valued the motivating atmosphere and practical support: "It connects you with the right sparring partners." A team summed up their experience by highlighting "collaboration, continuous learning, and adaptability" as essential ingredients for moving their research into application. These testimonials reflect a recurring theme: researchers gain not only practical tools but also a shift in mindset—toward agency, creativity, and the courage to transfer their ideas into societal and economic impact. For most participants, HAFIS is their first structured opportunity to seriously engage with entrepreneurship in a way that resonates with their identity as scientists.

Now entering its third cycle in September 2025, HAFIS evolves continuously through iterative, participant-informed processes. Its design integrates ongoing qualitative feedback and strategically timed surveys, allowing the programme to remain responsive to participants' evolving needs. This adaptive and pragmatic approach supports continuous refinement of the programme. By the end of its third and final funded cycle, HAFIS aims to become a validated, scalable model. The programme will be made available to other research institutions, enabling them to replicate and adapt the model for their own needs. In doing so, HAFIS contributes directly to the Helmholtz Association's mission of ensuring that publicly funded research leads to measurable, lasting societal benefit.

2. Theoretical Part

2.1 The Challenge of Research Transfer in Practice

Translating research into societal or economic impact is a widely acknowledged goal of modern science policy (Katzman & Azziz, 2021). Universities and research institutions typically engage in knowledge and technology transfer through mechanisms such as spin-offs, licensing, and industry collaborations. In recent years, additional formats such as policy advising and network-building have emerged as meaningful forms of societal engagement (Stifterverband, n.d.).

However, engaging in transfer activities requires a set of skills and resources that many researchers lack. Prior studies point to a lack of entrepreneurial training, time constraints, limited access to relevant networks, and unfamiliarity with tools for idea development and market exploration (Müller-Wieland et al, 2019). Furthermore, researchers often find themselves navigating role tensions—caught between the norms of academic science and the expectations of practical application or commercialisation (Abd Rahim et al, 2015). This dual identity can suppress proactive transfer initiatives. In addition, many researchers have limited exposure to non-academic stakeholders, which restricts opportunities for feedback, collaboration, and validation of ideas (Hayter et al., 2018).

2.2 Structural Gaps in Existing Support Systems

Although various initiatives aim to address these barriers, many fall short of meeting researchers' actual needs. Entrepreneurial frameworks have been developed to guide the alignment of research with societal needs and help identify viable use cases for innovation (Terzidis & Vogel, 2018; Lau, 2022). While theoretically robust, these frameworks are often applied in business or innovation contexts, not within research institutions. Consequently, institutional uptake remains limited, and researchers rarely engage with them (Manthey et al., 2022). A key issue is contextual fit: most frameworks overlook researchers' working realities, disciplinary logics, and identity tensions (Manthey, 2024). They are often introduced too late in the process—after ideas have already formed—leaving the early, ambiguous "fuzzy front end" of innovation unsupported (Rasmussen & Wright, 2015).

Without dedicated support tailored to researchers' specific needs—such as early market orientation or low-barrier engagement formats—many struggle to translate their ideas into real-world impact (Battistella et al., 2016; Manthey et al., 2022). Although academic entrepreneurship is increasingly acknowledged, support structures for the early research-to-impact phase remain underdeveloped. This underscores the need for researcher-oriented, stage-specific support models.

2.3 The Role of Motivation in Research Translation

Beyond structural barriers, Motivation plays a critical role in shaping whether and how researchers engage in transfer activities. While financial incentives matter, studies show researchers are primarily driven by intrinsic motivators—such as creating societal value or receiving recognition beyond academia (Urbano & Guerrero, 2013). When programmes fail to align with these internal drivers, even interested participants often disengage. Conversely, support that connects with researchers' goals and identities—while providing practical tools—can increase both engagement and transfer outcomes. This highlights the importance of approaches that combine skill development with motivational resonance and structural support.

2.4 Towards a New Model: The Rationale Behind HAFIS

These insights form the basis for HAFIS, developed as part of the Helmholtz Transfer Academies. HAFIS is designed to respond directly to the structural and motivational challenges described above. It provides tailored, researcher-centric, and motivation-sensitive support—particularly in the early stages of research translation, where uncertainty is high and conventional support often fails.

In this sense, HAFIS not only addresses structural and motivational barriers but also engages with the deeper level of organisational culture. Following Schein (2004), culture consists of shared basic assumptions that emerge as groups solve challenges of external adaptation and internal integration. By encouraging new ways of perceiving and responding to the demands of research translation—such as early-stage experimentation, stakeholder engagement, and interdisciplinary collaboration—HAFIS may contribute to the gradual evolution of these assumptions within research institutions. These emerging assumptions can, over time, become embedded in institutional routines, supporting a more sustainable and impact-oriented research culture.

3. Programme Design: The HAFIS Academy

3.1 Conceiving the HAFIS Programme

HAFIS is a nine-month programme designed to empower researchers to translate their scientific discoveries into societal and economic impact. Developed as part of the Helmholtz Transfer Academies, it is implemented across four Helmholtz centres, which are located in Germany—Karlsruhe Institute of Technology (KIT), Forschungszentrum Jülich (FZJ), Helmholtzzentrum für Schwerionenforschung (GSI), and Helmholtz-Zentrum Dresden-Rossendorf (HZDR). The programme is open to researchers from all disciplines and supports a wide range of transfer pathways, drawn from the Transferbarometer of the Stifterverband (Stifterverband, n.d.).

To design the HAFIS academy this consortium adopted a human-centred stance. For this, the leading centre, KIT, conducted 30 individual interviews of 30 to 60 minutes each with researchers from various disciplines and experience levels in 2022 — ranging from PhD candidates to postdoctoral researchers and heads of institutes. Theses interviews centred around the question of what prevents researchers from translating more of their results into impact.

In essence, their responses confirmed many of the previously mentioned shortcomings of academic entrepreneurship programmes while also revealing more specific needs of the researchers that lead to actionable insights. The most frequently discussed aspects formed the basis for the design of the HAFIS academy. Some of the most commonly mentioned topics included:

a. "*The lack of orientation"*, i.e. an overview what transfer paths for research exist beyond the omnipresent startups and industry collaborations. What's more, examples for the different paths were highly appreciated to look at own research results from a new perspective.
b. The *"ability to navigate"* the units that can provide support for the chosen transfer paths once it was found, i.e. knowing where to find what support.

c. *"Guidance, Coaching & Sparring"* help to cope with the fuzzy nature of intrapreneurship projects, i.e. researcher often sense potential in their research but struggle to identify the opportunities and application areas within it. Tailored support, methodological coaching, and sparring sessions can help.
d. In addition to their scientific responsibilities, many researchers lack sufficient internal capacity or access to external resources that can be mobilised to design and implement their projects. Connecting them with *"complementary resources"*, i.e. other entrepreneurially minded individuals who do not conduct research themselves, can be a crucial contribution to the success of these transfer projects.
e. *"Incentives and Appreciation"* for entrepreneurial behaviour are important. This includes clear recognition for activities leading to practical results from managers and supervisors as well as feedback from colleagues and members of the own community.
f. Naturally, researchers approach their topics primarily from the perspective of unsolved research questions. Thus, enabling them to *"gain a more practical perspective"* can be very insightful. Suitable approaches might include need-finding interviews, mutual exchange or even collaboration with people from relevant professional organisations and industries.

Further crucial topics mentioned by the interview partners were the need for supportive leadership, i.e. research leads who appreciate and provide freedom to pursue transfer projects, methodological enablement and education and the possibility to personally benefit from the transfer project – which in many cases is an extra-mile for those who carry it out.

These outlined needs, requirements and suggested solutions provided the cornerstones of the HAFIS design: To provide "orientation" the Transferbarometer of the Stifterverband (Stifterverband, n.d.) became a central learning content. To foster the ability to navigate offers of the transfer units of the research centres, the transfer managers in the centres became the lecturers and coaches for the researchers – because knowing and understanding each other and having an established relation matters. Moreover, coaching and sparring as well as educating approaches for human-centred innovation, (i.e. collecting data from practitioners, conducting interviews, testing prototypes etc.) became a must in the programme.

With the needs, requirements, and cornerstones in mind, several project-based learning programmes from innovation and intrapreneurship were explored and inspiration taken from them. This included among others Adobe's and Swisscom's intrapreneurship initiative Kickbox (https://www.kickbox.org/), interdisciplinary human-centred innovation courses in higher education such as the SUGAR programme (https://sugar-network.org/) and the Student Innovation Lab (https://www.kit-student-innovation-lab.de/) including the TAS-approach therein (Manthey, 2024). Apart from many detailed pedagogical and methodological elements two major impulses from this exploration were taken: a) the value of project-based learning, working on a project and receiving methodological education in parallel and b) the importance of allowing participants to work on their own projects, instead of artificial case studies. Both elements contribute to experiencing progress and impact and, thus, contribute to self-efficacy.

Moreover, the initial design of the to-be-academy was complemented by the personal, practical experience of team members with a multiyear professional background in management and innovation consulting. One key input gained from their expertise was the importance of considering both the personality and research expertise of participating researchers when supporting them in identifying potential transfer pathways. As a result, a dedicated module was integrated into the curriculum, enabling participants to reflect on their individual strengths, values, and goals. Finally, the team had the opportunity to partner with the newly formed KIT graduate school ENZo (https://www.enzo.kit.edu/english/index.php) and run a pilot cycle with their participants. The first design of the HAFIS Academy emerged from this journey. Since then, the design has been continuously reflected on, challenged, and iteratively improved.

3.2 Cornerstones of the HAFIS Design

HAFIS follows a multi-layered design that integrates three core components: milestone events, modular workshops ("Power-Ups"), and personalised sparring sessions. Together, these elements create a coherent learning journey that combines knowledge acquisition, peer collaboration, and individualised feedback (see Figure 1). In addition to fostering entrepreneurial skills, the programme aims to embed entrepreneurial thinking in research environments and drive cultural change within participating institutions.

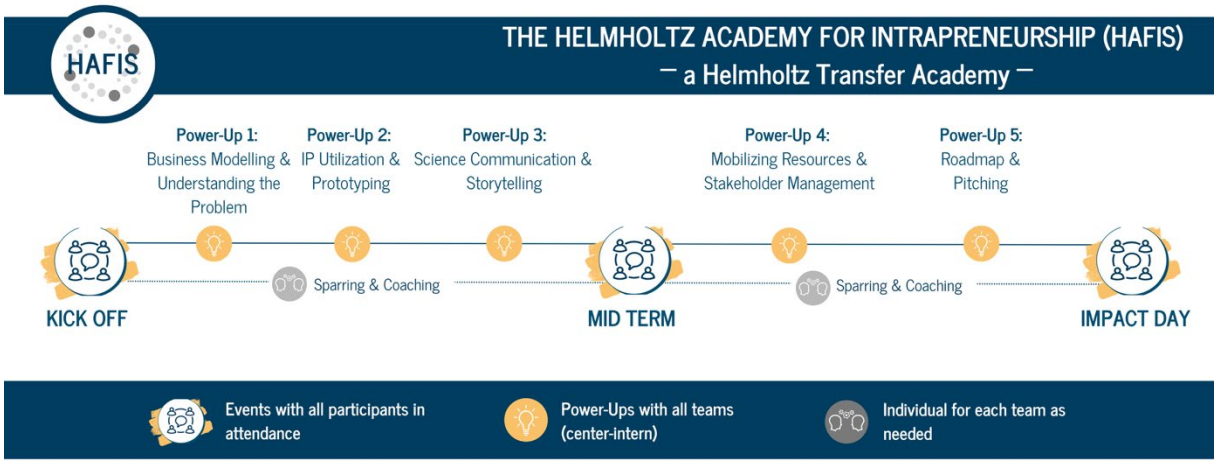

Figure 1: Structural overview of the HAFIS programme design. (own illustration)

The HAFIS learning journey is built around three milestone events: Kick Off, Mid Term, and Impact Day. Each marks a key phase in the participant experience. The Kick Off begins with self-reflection, ideation, and team formation. Participants either refine existing ideas or explore new ones through facilitated exercises. Interdisciplinary teams form across centres, supported by basic project management tools. This opening stage builds shared purpose and sets the tone for the programme. The Mid Term focuses on testing assumptions and engaging stakeholders. Participants integrate feedback, adjust goals, and clarify their next steps. The Impact Day concludes the cycle, providing a platform to present outcomes and plans to peers, coaches, and invited guests.

To support participants between milestone events, HAFIS offers five targeted workshops, or "Power-Ups," aligned with key phases of project development. Topics range from business modelling and user needs to stakeholder engagement, prototyping, and strategic communication. Early sessions emphasise value propositions, while later ones focus on refinement and pitch delivery. Drawing on established entrepreneurial tools adapted to scientific contexts, these sessions provide timely, hands-on input for ongoing project work.

A third key element is the sparring format: regular, personalised coaching sessions delivered individually or in teams. Coaches from each centre support participants in navigating project challenges, tools, and institutional dynamics, while connecting them to relevant networks. The sparring sessions foster responsiveness, accountability, and ongoing momentum throughout the programme.

4. Implementation, Iteration and Early Impact

4.1 Implementation Across Participating Helmholtz Centres

Since its launch in November 2023, HAFIS has completed two programme cycles, with the third due to begin in September 2025. Implemented across four Helmholtz centres the programme was developed to support researchers across disciplines and transfer pathways, including technology and knowledge transfer, and policy making.

In its first cycle, HAFIS recruited participants within a defined thematic focus to build a manageable and cohesive starting cohort. The second cycle, launched in late 2024 and completed end of June 2025, was opened to a broader disciplinary base. This shift was made for several reasons: the experience from the first cycle underscored the value of interdisciplinary collaboration, while continuing to impose a thematic focus risked excluding potential participants whose research did not align with it. Moreover, given the diversity of focus areas across the centres, defining a new unifying theme would have required an abstract framing that could limit relevance. Removing the thematic restriction allowed for greater inclusivity and demonstrated the programme's capacity to accommodate diverse research areas and application goals.

The first cycle began with 28 participants, of whom 21 completed the full programme. Nine project teams presented results at the final Impact Day, showcasing a range of outcomes including early-stage prototypes, structured concept documentation, and preliminary commercialisation or partnership strategies. These results suggest that the programme's design based on interviews and inspiration from related programmes—particularly its grounding in action-based learning, focus on own real-world projects, and personalised support—effectively translated into practical outcomes.

At the same time, the cycle revealed that the primary reason for participant attrition was the substantial time commitment required by HAFIS: a nine-month programme with roughly two engagement days per month. While this workload encouraged intentional commitment from most participants, it also led some to withdraw due to limited capacity alongside their core research responsibilities.

In response, the second cycle introduced several adaptations. The expected time investment was communicated more explicitly during recruitment, and the selection process was refined to place greater emphasis on participants' time commitment, project motivation, and alignment with the programme's goals. In addition, the scheduling of Power-Up sessions across centres was better synchronised, and participants were allowed to attend remotely at other locations if they were unable to join at their home centre. These changes helped reduce access barriers while maintaining programme quality and fostering a more resilient cohort.

The second cycle included 36 participants working on 18 projects. The increase in participation reflects both improved outreach and growing awareness of HAFIS within the Helmholtz community.

4.2 Programme Learning and Iterative Refinement

Consistent with its action-based learning approach, HAFIS was designed to evolve through participant feedback and reflection. Cycle 1 revealed that researchers entered with varying degrees of idea maturity—some with concrete concepts, others still exploring. To better support this range, the Kick Off in Cycle 2 was restructured to offer tailored entry points for idea development and refinement.

This change was part of a broader, multi-layered evaluation strategy that included structured surveys at the Mid Term and Impact Day, qualitative feedback at milestone events, and reflective "harvesting" exercises. Additional insights emerged informally through Power-Ups and sparring sessions. The evaluation process remained flexible, with survey instruments adapted over time to boost responsiveness. Findings were regularly shared with the Helmholtz Association through reports and presentations.

Based on this feedback, several refinements were introduced in Cycle 2. These included better timing of workshops with project phases, expanded support for prototyping and stakeholder engagement, and more flexible coaching formats to reflect growing project diversity. Optional cross-centre coaching was also piloted, enabling participants to receive feedback from innovation managers and coaches at other Helmholtz centres.

The final evaluation of Cycle 2 showed high overall satisfaction but also surfaced three key improvement areas. First, participants requested follow-on opportunities at their centres to continue project work in a semi-structured format post-HAFIS. Second, they noted difficulty securing focused time for their projects and suggested an intensive joint work session—such as a sprint, hackathon, or 24-hour camp—integrated with milestone events. Third, several teams struggled to find partners with complementary skills, highlighting the need for improved match-making and team formation formats.

Together, these insights illustrate HAFIS's ability to adapt to participant needs and continually strengthen its support structures based on lived experience.

4.3 Indicators of Cultural Change and Early Outcomes

Beyond measurable outcomes, HAFIS shows early signs of cultural impact at both individual and institutional levels. Informal feedback, observations, and qualitative notes from milestone events suggest that participants gained confidence in using entrepreneurial tools and showed a greater willingness to pursue transfer beyond academic boundaries. These insights often emerged toward the end of the programme, reflecting gradual internalisation. Several collaborations initiated during HAFIS have continued beyond the formal programme, indicating emerging networks and sustained peer exchange. This is interpreted as a sign of increased ownership, perseverance, and impact orientation—hallmarks of entrepreneurial behaviour.

Cycle 2 further underscored intercultural competence as a key learning outcome. With participants from diverse national and disciplinary backgrounds, the programme fostered cultural awareness and cross-perspective teamwork—skills transferable to broader international contexts.

Visibility efforts supported these shifts. Participants from both cycles were introduced via LinkedIn to raise their professional profiles and signal institutional support. The public presentation of project outcomes—initially delayed—now follows the conclusion of the second cycle and will be promoted ahead of the third, via the HAFIS website and internal communication channels.

Feedback from coaches and partners suggests growing openness to innovation-oriented formats. Even beyond the immediate cohort, dialogue on entrepreneurial engagement has increased—pointing to HAFIS's potential to foster a more impact-oriented research culture.

5. Discussion

Interim results highlight HAFIS's potential as a model for fostering entrepreneurial thinking and addressing persistent barriers to research transfer. Through structured milestones, targeted workshops, and personalised coaching, HAFIS supports a broad spectrum of transfer pathways—from commercialisation to policy engagement and interdisciplinary exchange.

A key distinguishing feature is its human-centred, iterative design, which adapts based on participant feedback. Changes between the first and second cycles—such as differentiated Kick Off entry points—illustrate responsiveness to participants' varying starting positions. The formation of cross-centre task forces, implementation notes, and inter-team exchanges signal improved coordination and organisational learning.

Despite this progress, several challenges remain. Maintaining engagement over nine months is demanding, especially given competing academic duties. Institutional cultures often prioritise traditional metrics over transfer efforts, making cultural change difficult to measure—though participants increasingly report a shift in how they perceive research impact. Geographic distance among centres and varying experience levels complicate collaboration and design consistency.

Some overlap with local transfer programmes also posed coordination issues, prompting reflection on audience clarity and institutional communication. HAFIS responded with hybrid formats and clearer messaging, but further adaptations—such as shorter milestones or incentivised check-ins—may enhance sustained engagement. These tensions are not unique to HAFIS but reflect broader challenges in innovation-focused academic programmes.

Compared to other initiatives, HAFIS offers distinct features. Programmes like SUGAR or Adobe's Kickbox prioritise rapid iteration and design thinking but are often student- or corporate-focused. Incubators typically serve researchers with concrete start-up ideas. HAFIS instead targets the early-stage "fuzzy front end" of research translation, where support is often lacking. Its researcher-centric, extended format and integration with institutional transfer structures distinguish it within intrapreneurial education.

HAFIS also aligns with broader institutional goals to embed entrepreneurial thinking in academic research (Manthey et al., 2022). Rather than a one-time training, it emphasises iterative learning, long-term engagement, and interdisciplinary peer exchange. These elements address known barriers to academic entrepreneurship—particularly the disconnect between research and application, and the need for cultural transformation within research institutions (Müller-Wieland et al., 2019).

6. Conclusion

HAFIS illustrates how a thoughtfully designed, feedback-driven programme can cultivate entrepreneurial competencies among researchers while promoting cultural change within scientific institutions. Through its combination of structured events, practice-oriented workshops, and individualised coaching, HAFIS supports researchers in navigating the uncertainties of early-stage transfer and in translating scientific insights into societal or economic value.

Across its first cycle and the second cycle, the programme has grown in participation, diversified its disciplinary reach, and enabled a range of tangible project outcomes. These include prototypes, transfer roadmaps, and new collaborations. More importantly, HAFIS has contributed to a shift in mindset among participants—helping them see entrepreneurship not as a departure from science, but as a complementary avenue for real-world impact.

While challenges remain, such as sustaining engagement over time and fostering cross-institutional collaboration, the programme iterative design has shown clear value in identifying and adapting to many of these hurdles. Moving forward, greater efforts will be made to raise HAFIS's visibility through LinkedIn and other strategic channels—both to support participant visibility and to communicate success stories more broadly. Initiated developments—including optional cross-centre coaching, shared workshop delivery between neighbouring centres, and the integration of Impact Day into larger innovation conferences—offer promising paths for strengthening the programme's reach and long-term sustainability.

Compared to conventional training programmes, HAFIS emphasises experiential, project-based learning over theoretical instruction. This approach aligns with broader trends in entrepreneurship education and has shown particular promise in scientific environments where researchers may initially be unfamiliar with entrepreneurial practices. By embedding learning into researchers' daily work and identity, HAFIS not only builds individual capacity but also reinforces institutional readiness for innovation.

Beyond its immediate context, HAFIS offers a scalable model for other research institutions aiming to foster impact-oriented research cultures. Its focus on interdisciplinary exchange, personalised support, and cultural transformation positions it as a relevant model within ongoing European and international discussions on academic entrepreneurship and research impact. The insights from the first two cycles affirm the programme's potential to be further expanded and refined—not only within Helmholtz but across other publicly funded research organisations committed to bridging the gap between science and society.

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Ethics Declaration

This study did not involve human subjects, personal data, or sensitive information requiring formal ethical approval. Therefore, ethical clearance was not required.

AI Declaration

This paper was developed with support from OpenAI's ChatGPT-4. The tool was used to support editorial refinement, language polishing, and structural coherence. All content was critically reviewed, validated, and edited by the authors to ensure accuracy and original scholarly contribution.

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