ORION
open science

Deliverable D6.4
Action Plans to embed Open Science

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 741527 and runs from May 2017 to September 2021.

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2.0	CRG, MDC, ISCIII, CEITEC	Final version

Contents

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Executive summary

One key objective of the project is fostering institutional changes in Open Science at RFPOs through co-creation experiments with multiple stakeholders, that can last and further develop beyond the ORION Open Science lifetime.

The project has now reached an end and, based on experiences and results from WP3 and 4, the evaluation performed in WP5 (deliverables 5.2, 5.4 and 5.5) and the evolution of the Open Science concept in their ecosystem, the six participating RFPOs (BI, CEITEC, CRG and MDC as research institutes; ISCIII and JCMM, as funders) have prepared tailored action plans (all publicly available) to embed Open Science and Responsible Research and Innovation (RRI) in their organisations. The plans have been elaborated engaging the high management in the organizations to ensure institutional committment and adequate resources for their successful implementations. Most of the Open Science action plans are also embedded or linked to the institute´s Strategic Plans, reinforcing the organizations´ committment to implement responsibly Open Science in the upcoming years. The plans focus on different dimensions on Open Science, depending on the institutes´ priorities – from Open Access to publications, to Open Data, research integrity, EDI aspects (equality, diversity and inclusion) to stakeholder and public engagement, incorporating the lessons learnt in ORION.

As mentioned, the plans are openly available on the institutional RFPO websites to share them with the research community and beyond, following the ORION´s spirit of openness and transparency.

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Introduction

A key project´s objective is fostering institutional changes in Open Science at the participating research funding and performing organizations (RFPOs) through co-creation experiments with multiple stakeholders (WP3), training (WP4) and the evaluation exercise (WP5). This report collects the Action Plans of the six participating RFPOs (CRG, MDC, BI, CEITEC, JCMM, ISCIII) to embed Open Science and RRI in their organizations. The plans are openly published on the institutional RFPOs websites to share them with the research community and beyond.

1. Babraham Institute (BI)

The Babraham Institute undertakes world-leading research into understanding the biology of how our bodies work, including what changes happen as we age and during disease. Research at the Babraham Institute is split into three programmes: Epigenetics, Signalling, and Immunology and is supported by strategic programme grants from the Biotechnology and Biological Sciences Research Council and additional funding from research councils, the EU and charities.

The institute's mission is to be an international leader in research focusing on basic cell and molecular biology with an emphasis on healthy ageing through the human lifecycle.

Open science consists on the notion that scientific outputs need to be as open as possible for others to access, reuse and distribute without undue limitations. By doing this, open science helps uphold important features of research and innovation, such as transparency, openness, verification and reproducibility, across the whole lifecycle of research. Open science is facilitated through open access and open research data in line with the FAIR principles (findable, accessible, re-usable and interoperable).

The Babraham Institute currently undertakes the following open science practices in line with the eight pillars of Open Science identified by the European Commission:

Open scholarly publishing

In January 2021, the Institute published an institutional policy on Open Access Publishing. This policy aims to achieve immediate, unrestricted, on-line free-of-charge access to peer reviewed and published research papers, which should be made available using the Creative Commons Attribution (CC BY) licence, and allows immediate deposit of the final published version in other repositories without restriction on re-use (Gold Open Access). This policy is in line with the Research Councils policy on open access publishing.

The Institute's vision is for all users to be able to read published research papers in an electronic format and to search for and re-use (including download) the content of published research papers, both manually and using automated tools (such as those for text and data mining), provided that any such re-use is subject to full and proper attribution.

As stated in article 5.1 of the policy, the Institute receives a block grant from UKRI from which an Open Access publication fund has been established in order to pay Article Processing Charges (APCs). Wellcome also provides such a block grant for Open Access publishing.

UKRI has been reviewing its open access publishing policy over the last two years. An updated version was expected in the second quarter of 2021.

Open data

The Institute is currently drafting its policy on Open Data, which is due in 2021. The policy aligns with the 10 principles set in the UK Concordat on Open Research Data[1] (2016), which sought to ensure that research data gathered and generated is, wherever possible, made openly available for

[1] https://www.ukdataservice.ac.uk/news-and-events/newsitem/?id=4680 (last accessed 23rd July 2021)

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use by others in a manner consistent with relevant legal, ethical and regulatory frameworks and disciplinary norms. The concordat is endorsed by main UK funders.

This policy should ideally cover all data produced by the Institute's facilities and researchers, specify the locally-managed data repository where the institute research data is available from, and ensure researchers understand the storage solutions available to them.

Next-generation research assessment

The Babraham Institute is signatory of the San Francisco Declaration on Research Assessment[2] (DORA) since May 2018. DORA recognises the need to improve the ways in which the outputs of scholarly research are evaluated. DORA's vision is to advance practical and robust approaches to research assessment globally and across all scholarly disciplines. The Institute is reviewing how it implements responsible and fair approaches for research assessment, in line with Wellcome guidance.

The Institute Authorship Policy (BI-RES-001) provides a framework within which decisions on authorship may be made and to provide mechanisms to resolve disputes over authorship.

Research Integrity

The Babraham Institute upholds the commitments outlined in the Universities UK Concordat to Support Research Integrity[3] (2019). The Institute expects its researchers to maintain the highest standards of research integrity, abiding by the principles outlined in the UK Research Integrity Office's Code of Practice for Research[4].

The research integrity committee has already developed, or is currently developing, the following policies:

- Institute's Research Integrity Policy
- Research Misconduct Policy (BI-RES-004 Research Misconduct)
- Research Data Management
- Research Record Retention policy
- Open Data
- Human Research
- Managing Performance of Research Grants

Education and Skills

Graduate Training and Development is under the remit of Human Resources Department, in collaboration with the University of Cambridge. When students first arrive at the Institute, they attend a compulsory Graduate Induction Programme for their first week. The aim of this course is to provide a foundation in key skills needed for future work and assessment. It introduces essential topics such as: 'good laboratory practice' and experimental design, basic computing and statistics, library skills, molecular biology and database mining, safety, animals and the Home Office, intellectual property and provides a tour of the Site including specialist equipment. No specific (graduate or postgraduate) training on any open science practices has been identified when developing this text.

[2] https://sfdora.org/; (last accessed 28th May 2021)
[3] https://universitiesuk.ac.uk/policy-and-analysis/reports/Documents/2019/the-concordat-to-support-research-integrity.pdf (last accessed 23rd July 2021)
[4] https://ukrio.org/wp-content/uploads/UKRIO-Code-of-Practice-for-Research.pdf (last accessed 23rd July 2021)

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In the context of the ORION Open Science Project, the Babraham Institute has developed an Open Science Action Plan (**see Annex 1**) to support embedding open science practices in the organisation (2021-2024), and it is publicly available on the institute's website.

It contains ten detailed actions to support the Institute transitioning towards fully embedding Open Science practices. The actions are organised in three categories:

1. **Leadership**: Appoint an Open Science named person (#1); Establish a Working Group on Open Science (#2); Establish a dedicated site in the intranet and website for open science (#3); Develop Open Data and Research Data Management policies (#6); Align the public engagement strategy and programme with the Institute's open science vision and mission (#8);
2. **Communication**: Publish an institutional statement on Open Science on website (#4); Establish advocacy programme (#5);
3. **Skills**: Develop evaluation, recognition and career development frameworks and policies (#7); Develop a strategic approach to skills training (#9); Recognise open science practices in hiring processes and policies (#10);

The figure below is a timeline representation of the ten actions contained in Babraham Institute action plan.

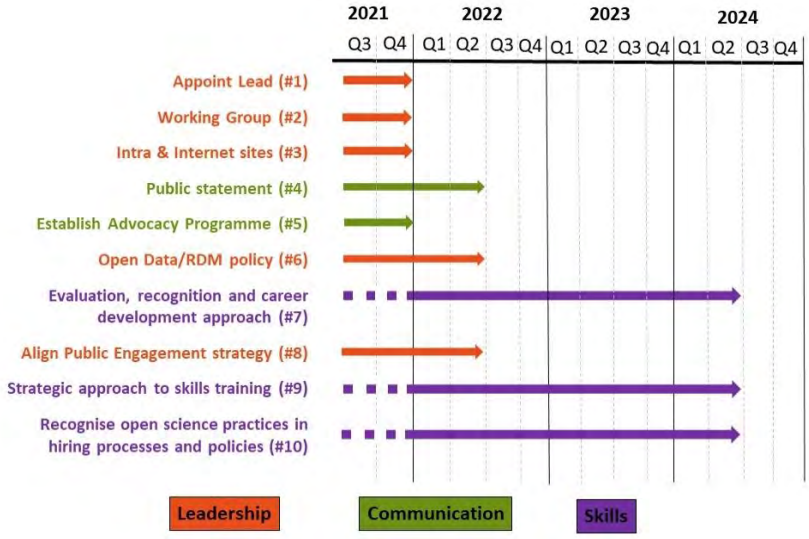

Figure 1: The timeline of BI's Action Plan (2021-2024)

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2. CEITEC-MU

CEITEC MU is a research institute of Masaryk University (MU) and a member of the CEITEC consortium that aims to improve quality of life and human health through scientific research and innovations. Masaryk University developed a Strategic Plan for the period 2021-2028, where Open Science and RRI are promoted by two main activities:

- Active involvement in the development of the national e-infrastructure (e-INFRA CZ) for science, research and education and active involvement in building the EOSC (European Open Science Cloud) and European Open Science / Open Data platforms.
- Creation and implementation of a university strategy for wider use of Open Access and Open Data.

Based on the second activity, the University started the process to develop the MU Open Science Strategy. The MU Open Science strategy focuses primarily on Open Access and Open Data; the approval of this strategy is expected in 2022.

Strategic Plan 2021-2028 of CEITEC MU

Moreover, CEITEC MU has prepared its Strategic Plan 2021-2028, approved on 24th August 2021, openly available (**see Annex 2**). The proposal supports the follow-up of the HR Strategy and HR Excellence in Research Award Action Plan. The HR Excellence in Research Award Action Plan Action Plan 2021-2023 includes a dedicated activity to further strengthen and unify the Open Science approach.

Activities focused on Open Science, stated in the proposal of Strategic Plan 2021-2028 of CEITEC MU and in the HR Excellence in Research Award Action Plan 2021-2023, are elaborated further in details in a separate action plan called "*Implementation of Open Science principles: Action Plan 2022-2023",* prepared within the ORION project, and fully embedded in the Strategic Plan:

We highlight:

The values related to Open Science and RRI (draft):

- Open science and knowledge sharing
- Integrity, ethics, and social responsibility
- Equal opportunities, transparency, openness, fairness

The proposed activities towards Open Science and RRI:

- Systematic support for Open Science and RRI principles.
- Increase public´s awareness about CEITEC and to strengthen the CEITEC brand.

Partly implemented OS principles

Some actions have been already started to be implemented.

- The CEITEC MU research data policy. The research data policy aims to provide CEITEC MU researchers with basic definitions, rules, responsibilities, and conditions of data ownership and data management. The policy is a binding document (Director's Measure) and was approved at the end of 2020. Related to the research data policy, an internal norm on acquisition and storage of research data, including methodology and template of the laboratory diary, was approved.
- The MU Instruction No. 1/2021 on Open Researcher and Contributor ID stated the obligation of evidence the ORCID profile in the internal MU (IS MU) database and its regular updating.
- The Open Science topic is regularly presented in internal newsletters and CEITEC MU website (microsite on Open Science).
- The support for researchers/administrative on Open Science is provided by Research and Innovations Support Department.

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- Membership in OS initiatives (https://www.wg-rdm.cz/, RRING Community).
- Regular reporting for CEITEC MU management.
- New training and workshops for scientists.
- Public dialogues and other events for the general public as well as target groups.

The CEITEC MU supports high-quality research and is committed to ensuring that this investment leads to maximum social and economic return. The CEITEC MU supports the principle of openness to the whole research process, ranging from research outputs to underlying data as the most effective way to be publicly and freely available to and (re)usable by other researchers and the general public. For this purpose, the CEITEC MU Action plan on Open Science include the following actions to implement the Open Science principles:

Action	Description	Deadline (Q/YYYY)	Responsible Unit	Indicator(s) / Target(s)
New University strategy on Open Science	The CEITEC MU is actively involved in the creation of the new University strategy on Open Science, which should be adopted in 4Q 2022.	4Q/2022	Research and Innovations Support Department, Scientific Secretary	University strategy on Open Science
Repository/ Open Access	The effective support of the repository for researchers will be established. The CEITEC MU participates in developing the MU repository to following actual requirements and trends in cooperation with the Institute of Computer Science of Masaryk University. We aim to establish systematic support of repository services for researchers and increase OA publications by the green way.	2Q/2023	Research and Innovations Support Department	Guidelines for uses of MU repository, Number of publications in the repository
Research Data Management	In 2020, we appointed the Research and Innovations Support Department manager, also responsible for Research Data Management support at CEITEC MU. The manager was trained in this field and also participate in task force EU-LIFE Research Data Management and the institutional working group of Open Science. Based on institutional recommendations and experiences from sharing best practices in EU-LIFE, the manager will provide support for researchers and administrations in Research Data Management. The suitable online tools for Data Management Plan will be identified, and the guidelines for Data Management Plans will be created.	4Q/2022	Research and Innovations Support Department	Guidelines for Data Management Plans
Open Science skills training	To make Open Science a true success, it is important that students and researchers take note of Open Science practices early on in their careers. We will actively promote the suitable training and workshops of Open Science topic at the Facebook in the particular groups CEITEC Ph.D. and Postdocs. The training on Open Science focusing on RDM and OA/repository suitable for all research will be promoted at CEITEC MU Open Science websites and CEITEC MU monthly internal newsletter. Moreover, the training for CEITEC MU administrative staff (especially for Grant Administration Department) will	2Q/2022	Research and Innovations Support Department	Number of promoted training for early-stage researchers/researchers/administrative staff Guidelines of OA

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	be regularly organized by Open Science specialist at CEITEC MU to ensure maximum effective support of researchers in Open Science topic.			
The increasing of awareness on Open Science at CEITEC MU	The CEITEC MU Open Science specialist will monitor the international, national and institutional news in Open Science topics and regularly publish it on the CEITEC MU Open Science website and CEITEC MU monthly internal newsletter. The OA CEITEC MU publications will be labelled by the OA logo on TV screens in CEITEC MU and CEITEC MU monthly internal newsletter.	1Q/2022	Research and Innovations Support Department	Regular report on Open Science, Open Science website, Internal newsletters (open science section)
Increasing awareness about Open Science among general public in the Czech Republic	The CEITEC MU Communications Lead will collaborate with Open Science specialists and regularly publish press releases about various Open Science elements implemented at the CEITEC MU and in the Czech Republic and their positive impact on society. The aim to increase public trust in science and to transparently communicate the scientific process.	4Q/2022	Director´s Office	2 press releases per year will be disseminated through our media contacts and on the social media channels
Increasing awareness about Open Science and establishing trust of general public	The CEITEC MU will introduce Open Science elements to the general public through active engagement of the public during the two most important science popularisation events that are being regularly organized – the Researchers´ Night and the Science Festival. The aim is to create deeper bidirectional engagement between scientists and the members of the public that would lead to increased trust in science and reason among the members of the public.	4Q/2022	Communications Department	2 events per year

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3. Centre for Genomic Regulation (CRG)

The OS Action Plan of CRG is embedded in the 2021-2024 Strategic Plan (**see Annex 3**). This Strategic Plan has recently led to the award of the Severo Ochoa Spanish grant of excellence. Strategic Area #5 "Open and Responsible Research" represents CRG's Action plan on OS and RRI. Link: https://www.crg.eu/en/content/about-us-international-scientific-affairs/open-science.

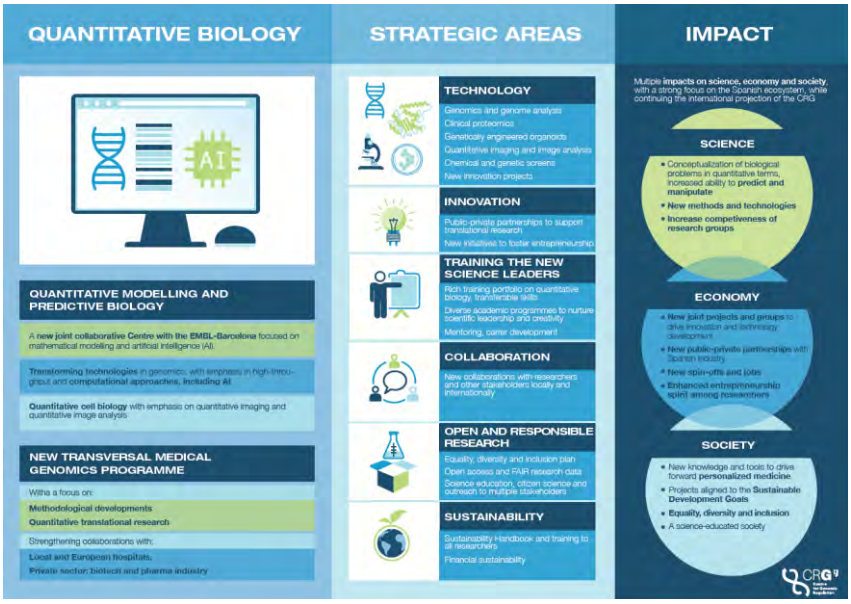

Figure 2: The CRG Strategic Plan at a glimpse (2021-2024)

Openness and responsibility are core values of CRG research and embrace a broad portfolio of actions to promote equality, diversity and inclusion (EDI), open access to publications and results, science communication, education and outreach to multiple stakeholders.

EQUALITY, DIVERSITY AND INCLUSION

In 2020, the CRG endorsed the Equality, Diversity and Inclusion (EDI, 2020-2023) Plan (www.crg.eu/sites/default/files/crg/crg_edi_plan_en.pdf). We will expand our aims to offer a solid EDI environment to all employees. We will promote women in positions of leadership. Currently we are close to 50% junior PIs women but no Programme Coordinators. By the end of the 4 years, we aim to have at least 25% women Programme Coordinators and at least 30% in the governing Boards. We highlight new additional actions:

i. Campaigns to raise awareness about the relevance of gender balance with a new focus on diversity (e.g. "My life in Science" webinar series).
ii. A new Leadership Programme for women scientists, built on the successful pilot within the LIBRA project, and organized together with other EU-LIFE centres.
iii. Monitoring gender-based indicators in publications to detect and improve potential biases.
iv. Monitoring and mechanisms to ensure equal pay for equal jobs.
v. New guidelines and training on how to include the dimensions of sex and gender in research. The guidelines will be a co-creation exercise, engaging the CRG scientific community, followed by broad dissemination, including specific case studies and talks. Regarding training, we piloted a new course for 1st year PhD students that we want to repeat, and eventually extend to other professional categories. We will complement this course with online training through our Moodle platform, and we will organize a train-the-trainer session so that several CRG researchers can deliver the training.

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vi. Implementing a new protocol (including training) for prevention and approach to sexual or gender-based harassment.
vii. Training on diversity (sex and gender, but also ethnicity, nationality, sexuality, disabilities, other minorities, etc.) and inclusion of this broad diversity perspective in recruitment.

OPEN SCIENCE

In the next 4 years, we will continue fostering open and responsible research as relevant strategic goal with a strong focus on Open Access to scholarly publications and Open and FAIR research data management. Our priorities will be the following.

OPEN ACCESS

i. Consolidate our open access policy that has already resulted in >80% publications accessible to the community (2019 data). We aim to reach 90% at the end of the SO Award.

ii. Focus on community engagement to share "good" and "new" practices in life sciences publishing, e.g. the PCI (Peer Community In; peercommunityin.org) initiative, in which a few CRG PIs participate.

OPEN FAIR DATA

i. Put in place a new policy on research data management, to ensure data protection as well as broad access and re-usability by the community.

ii. Develop new courses to support our researchers to comply with the European policy on FAIR and Open data. In all these efforts, we will collaborate with other EU-LIFE institutes and will participate as observer in the European Open Science Cloud Association.

iii. Streamline internal processes of compliance on management of personal data, as related ethics requirements are increasing in public-funded projects because of the EU-wide General Data Protection Regulation.

RESEARCH INTEGRITY

Within the PRBB-CRG scientific seminar series, we will introduce one seminar/year on bioethics to trigger debate among the CRG community on the latest ethical dilemmas, as those revolving around AI or genome editing. We will develop a new mandatory online course on research integrity and ethics for new comers. Further, we will continue embedding a participatory session to discuss research integrity and ethics with 1st year PhD students, and we will develop short modules as a plug-in to be integrated in science and technology courses.

ii. WELL-BEING. We aim to make a qualitative jump in promoting well-being in our community, to help them to feel motivated towards their work and professional future, in a supportive and constructive working environment. We are currently discussing different options to offer external professional psychological help to CRG members.

iii. MENTORING. We will establish additional mentoring schemes for various communities, starting by PhD students through a novel peer-mentoring programme that complements the mentoring provided through PhD advisors, Thesis Committees and Academic Office. The programme will be extended to other communities, including Postdocs, technicians, junior PIs and administration staff.

SCIENCE COMMUNICATION, ENGAGEMENT AND CITIZEN SCIENCE

We will promote two main strategic goals with specific activities.

1) Consolidate the CRG's brand as an international biomedical research institute of prestige, promoting cutting-edge quantitative biology and other strategic activities.

a. Create a comprehensive digital communication strategy (2021-24), including the renewal of CRG website.

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b. Reach newer, younger audiences including those who do not think, “Science is for us”, through native digital platforms (e.g. Twitter, Facebook), creating new compelling content (audio-visual) and storytelling.
c. Promote the value of basic research by proactive engagement with national and international journalists.
d. Launch a new scientific CRG Annual Symposium series gathering alumni, industry, policy-makers and other stakeholders, to boost scientific collaborations and innovation.
e. Offer training in communication skills to CRG researchers, empowering them to use digital channels.

2) Place science at the heart of ongoing public debates by re-designing our portfolio of public engagement, citizen science and science education activities, using innovative engagement methods grounded on the principles of Open Science and the success of our ORION project.

a. Launch and manage the new citizen science project Genigma (Martí-Renom group): a game app contributing to cancer research.
b. Develop new actions to ground citizen science at the CRG (workshops, webinar, guidelines, policies, etc.) by participating in the new H2020 project TIME4CS (Supporting Sustainable Institutional Changes to Promote Citizen Science in Science and Technology).
c. Organize new public dialogues where citizens can directly debate with our researchers ethical and societal aspects of new CRG strategic research areas (e.g. AI, medical genomics).
d. Synergize with national initiatives, such as “Science in the Parliament”.

Key actions

- Implement a new EDI plan, including actions to prevent harassment and bullying, monitoring gender in publications, a new Women Leadership Programme to empower women scientists in advancing their career and developing training on diversity.
- Increase the participation of women in the CRG governance.
- Organize new seminars and courses on bioethics adapted to CRG research and context.
- Boost Open Access of publications to 90% by 2024.
- Implement a new policy, guidelines and training for FAIR Research Data Management.
- Consolidate the CRG’s brand as a biomedical research institute of international prestige, through a new digital communication strategy, renewing the CRG website and creating new engaging contents and storytelling.
- Launch of the Genigma app to engage citizens in cancer research and new actions to ground citizen science approaches in more CRG research projects.
- Organize new public dialogues where citizens can debate ethical and societal aspects of new strategic research areas (e.g. AI, Medical Genomics, etc.) directly with CRG researchers.

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4. National Health Institute Carlos III (ISCIII)

The National Health Institute Carlos III (ISCIII) is the leading Public Research Institution that funds and performs biomedical research in Spain. It depends administratively on the Spanish Ministry of Innovation and functionally on the Spanish Ministry of Health. ISCIII is also a national reference centre for specialised techniques serving the Spanish National Health System, carrying out teaching and training activities through the National School of Public Health; it funds research projects and research networks on health sciences through the *Subdirección General de Evaluación y Fomento de la Investigación (SGEFI)*; and houses the National Library of Health Sciences. ISCIII is involved in basic and advanced training of health professionals to cope with society health care demands.

Process

The National Health Institute Carlos III developed a Strategic Plan for the period 2021-2025. The "ISCIII Strategic Plan" (or "PEISCIII" by the Spanish acronym), aims to promote the improvement of the service that the ISCIII provides to society, guaranteeing, from a public responsibility perspective, the public responsibility and the mission entrusted to it. PEISCIII includes the strategies, measures and actions planned for all the ISCIII's lines of action (Figure 3. ISCIIIs Lines of Action).

Figure 3. ISCIIIs Lines of Action.

Among its objectives, measures and actions, PEISCIII embeds Open Science (OS) and Responsible Research and Innovation (RRI) principles in the Institution and his satellite initiatives, such as the Health Research Institutes. The PEISCIII is openly available (only in Spanish).

PEISCIII collects more than 80 measures, where RRI or OS are deeply embedded, with the objective to operationalise the use of the RRI principles and Open Science to open up funding schemes and research practices. The PEISCIII plan is a useful tool both internally and externally. At internal level, it provides a clear and focused strategy on these topics, facilitating the development and follow-up of the proposed actions. At external level, it promotes the ISCIII's commitment to European policies, supported by the Director together with the Steering Committee, and it serves as an inspiration for other Spanish institutions related to research and/or health.

The ORION Project has played a key role in the development of the PEISCIII, and it has been a driving force behind many of the actions presented below.

ISCIII Strategic Plan (PEISCIII)

The ISCIII Strategic Plan 2021-2025 (PEISCIII) is an opportunity to further improve the efficiency and solvency of the institute and address the new challenges to improve citizens' health and fight human diseases.

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The ISCIII has embedded RRI and OS in this PEISCIII, building a more porous institution, committed with open and responsible values. Spreading RRI and Open Science, ISCIII is triggering institutional, cultural and behavioural changes. This commitment on RRI values also implies a change for many institutions considering the ISCIII as a reference.

The PEISCIII has incorporated OA and RRI measures according to the following scheme: Strategies, Strategic lines, Strategic objectives and Activities. There are also measures in the Justification and Opportunity and Values sections.

Table 1. PEISCIIIs structure related to OA and RRI at glimpse.

PEISCIII 21-25		
JUSTIFICATION AND AGENDA		
MISSION, VISION AND VALUES		
CORE STRATEGIC	STRATEGIC AIMS	ACTIVITIES
STRATEGIC AREAS	STRATEGIC AIMS	ACTIVITIES

Justification and Agenda: The ISCIII wants to include the promotion of RRI among its actions. This broad concept includes initiatives "*that seek to reduce the distance between science and society, which entails the active involvement of all stakeholders through inclusive and participatory work methodologies. With this orientation, the ISCIII wishes to contribute to strengthen transparency and public confidence in institutions, to promote gender equality and diversity, and to carry out a rigorous evaluation of the impact of the results obtained".*[5]

Citizen engagement, governance and transparency are also inspirational ideas taken into account in the ISCIIIs policies.

Institutional Values aligned with RRI principles: ISCIII considers the RRI principles as its own Institutional values; public engagement is an inspirational objective that guides the ISCIII actions and policies. Transparency, citizen engagement, gender equality, science education and open science (in the research process and to society) are strong values for the Institution.

"Public responsibility understood as an ethical commitment to citizenship and which is embodied in transparent management, citizen participation, gender equality, citizenship education, the promotion of scientific culture, and open science available to the whole community (RRI principles)".[6]

Co-Creation process to design the Strategic Plan: Co-creation processes were used for drafting the plan. The document, once prepared, was shared to all participating organizations, and to all ISCIII units. This participation process allowed the collection and incorporation of suggestions, comments and revisions, which were very useful to draft the final version of the PEISCIII.

Core Strategies, Strategic Areas and Strategic Aims: The PEISCIII is divided into Core Strategies and Strategic Areas, as shown below; there are four Core Strategies and four Strategic Areas.

[5] Strategical Plan. Section 1.1. Justification and opportunities page 7
[6] Strategical Plan. Section 3.3. Values. page 17

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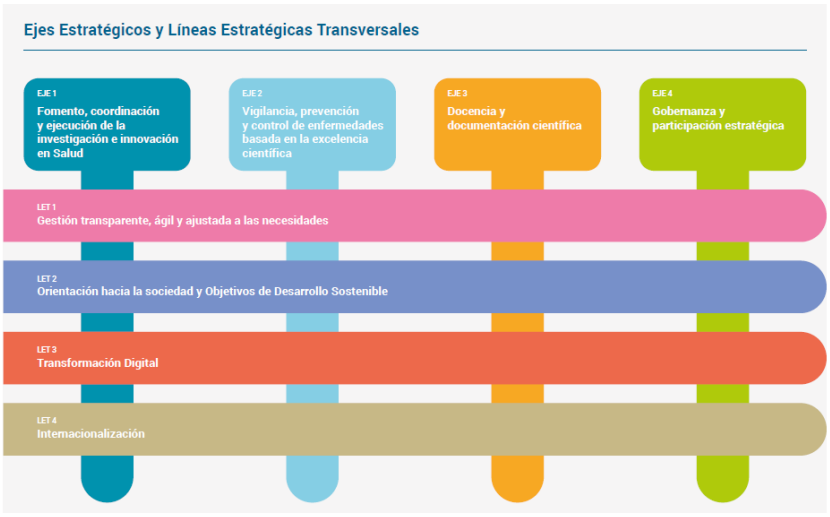

Figure 4. Core Strategies and Strategic Areas, PEISCIII.

The Core Strategies and Strategic Areas contain Strategic Aims and lead to Activities. The following is a breakdown of those once that are directly related to RRI and OA. Due to the length of the PEISCIII document, we present the Core Strategies, Strategic Areas and Activities in Table 2. Core Strategies, Strategic Lines, Strategic Aims and Activities.

Table 2. Core Strategies, Strategic Lines, Strategic Aims and Activities

Core Strategies	Strategic Aims	Activities
Promotion, coordination and execution of health research and innovation.	**Define and promote quality standards in the field of health research, and contribute to the structuring and cohesion of the National Health System**	Identify and formally recognize good practices in Responsible Research and Innovation (RRI) in the public health centres of the NHS.
	Improve and modernize the management of AES (health funding schemes in ISCIII)	Incorporate citizens and associations of patients in the evaluation process of the Strategic Action in Health. Revise the evaluation´s process applying pandemic lessons. The experiences lived in confinement have shown that the forms of evaluation can be different; therefore, the evaluation process will be reviewed by applying these experiences. This is an objective for the next four years.
	Develop and strengthen large multidisciplinary cross-cutting programs with the participation of ISCIII intra-mural centers/schools/units.	Redesign and launch of an online platform open to all citizens to ensure visibility of the actions financed within the framework of the AES and AESI (internal and external scheme funding), collecting the aid and objectives of the projects, incorporating a vision of gender. Implement and develop cross-cutting programs in COVID-19,

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		Global Health and e-Health that take into consideration the gender perspective and RRI principles
Teaching and Scientific Documentation	**To improve the dissemination of health sciences research and their open access**	Strengthen REPISALUD (the institutional repository) opening the access to granted researchers. Promote open access policies
Governance and strategic involvement	**Facilitate the involvement of the scientific community and the public in the promotion and coordination of R&D&I in the NHS as a whole.**	Create an Institutional Advisory Board with citizen engagement
Strategic Areas	**Strategic Aims**	**Activities**
Alignment with Sustainable Development Goals	**Citizen engagement through media channels and redefinition of communication channels to improve public engagement.**	Redefine communication channels to foster public engagement. Spread digital contents with education material about research in ISCIII Strengthen the Scientific Culture Unit.
	Promote the achievement with the Sustainable Development Goals.	Review and update the ISCIII's Gender and Equity Plan and incorporate the gender perspective and measures to guarantee gender equality and the empowerment of women and girls (SDG5) as a mainstream.

These elements include all areas of action related to the ISCIII governance and management model and aims to promote innovation in the organization management, including the creation of new structures of horizontal governance and scientific and citizen participation. Its purpose is to help foster scientific excellence in ISCIII research centres.

Showcased PEISCIII actions

Among the multiple actions, we would like to present two specific actions on RRI and Open science, with strong link to ORION.

Action 1: RRI Health Awards.

Responsible Research and Innovation Awards in Health were financed and developed thanks to ORION project in 2020. The first prizes, presented as three awards, in the form of a lump-sum amount of 10,000€ each, were awarded to the three best proposals assessed by the evaluators, aligned to recognise the efforts on RRI from these Health Research Institutes during 2020. Each proposal submitted had included a video summary of the project to open up the research to the public and facilitate the evaluation process.

ISCIII has decided to include these awards in its funding and support structure for the institutes. The awards contribute to the structuring and cohesion of the accredited institutes. This commitment is

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expressed in ISCIII strategic plan as a promotion of quality standards. Second edition is foreseen for 2021.

Action 2: Embedded RRI Principles in The Evaluation Guide Of Health Research Institutes

To embed RRI principles in the public health centres, ISCIII includes RRI indicators in the evaluation guide of Health Research Institutes. The Health Research Institutes ("Institutos de Investigación en Salud" – IIS) are clusters performing research and innovation in Biomedicine, Science and Technology on Health. These institutes are entities dedicated to basic and applied research that involve hospitals of the National Health System, universities, public research organizations, and public or private research centres, so they have a multidisciplinary composition and involve many different profiles and stakeholders. The thirty-two Health Research Institutes are distributed over the Spanish regions, composed of more than 162 institutions and 24,000 researchers: Cataluña (7), Madrid (7), Andalucía (5), Valencia (2), Basque Country (2), Galicia (2), Castilla y León (1), Murcia (1), Cantabria (1), Aragón (1), Navarra (1) and Balearic Islands (1). The IISs contribute in leveraging biomedical research in Spain. RRI principles became part of the evaluation process of Health Research Institutes related to their accreditation.

Figure 5. Health Research Institutes Map

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5. South Moravian Centre for International Mobility (JCMM)

Mission

JCMM (South Moravian Centre for International Mobility) has a long-term commitment to advance human resources, career development, training, and to improve the school system and dissemination of the research outputs to the local scientific community in the South Moravian Region with a focus on young generation.

Action Plan - JCMM

JCMM was founded in 2005 to support talented students and facilitate mobility of researchers into the South Moravian region. Since then, our activities have expanded, focusing on more target groups. Currently, the activities are managed by 35 full-time staff.

In 2019, the organization CVV - Centre for Education for All, which focuses on career counselling, career development and cooperates with primary and secondary schools in the region, was incorporated under the JCMM. The Centre helps pupils and students to choose the best possible school according to their skills and knowledge and, later, it helps graduates to find the best possible employment.

JCMM has developed an action plan to allow the organization to be an active player in the region in the field of education, science, innovation and career counselling. JCMM intends to work closely with schools, universities and research institutions for the benefit of individuals as well as for the involved parties and the region itself, following the principles of Open Science and RRI.

Key activities of JCMM

A) Academic staff - to support and manage programmes to attract academic staff from abroad in cooperation with other stakeholders (universities, city, region), including setting up suitable living conditions for the work of academic staff and their families (EURAXESS, welcome service). Strengthen the links with the public sector, involve supported academics in popularization activities, increase the openness of the scientific research community and popularize science towards the general public in the region.

Actions: we will be looking for ways to support researchers (COFUND), use of knowledge gained from EU projects (SOMOPRO, ORION), emphasis on the application of the principles of open science and RRI, emphasis on popularization of science and public involvement, participation in RIS (popularization platform).

B) Students - support for talented pupils and students on all levels of education with a potential to generate a pool of qualified researchers in the future.

Actions: In the implementation of JCMM programs, we will pay attention to the development of knowledge, skills and competencies of students, critical thinking and creativity of students and their capacity to effectively use their abilities in the labour market (after completing various levels of schools) and respond to changing requirements in the future.

In cooperation with other regional partners (e.g. JIC – The South Moravian Innovation Centre), we will foster entrepreneurship culture among students, to support the establishment of student start-up companies and other forms of projects ensuring the transfer of knowledge between the academic and business sectors. We will encourage student involvement in innovation activities, both through curricula and through other activities, including business incubators and accelerators.

We will assist in the development of interactive teaching methods, through which students learn to apply general knowledge and methodological procedures in practice, e.g. various student projects, practical workshops, simulations, student competitions and summer schools. We will involve students in research projects with an overlap to industrial research.

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C) Career counselling and development - includes a wide range of activities in cooperation with schools, career counsellors, companies and other organizations (chamber of commerce).

Actions: we will offer free service for the general public from 14 years at 4 branches in the South Moravian Region with more than 500 individual consultations per year.

We will implement pro-costumer orientation and focus on clients´ needs: job search, need for change, professional development, choice of high school and university schools, return after parental leave, specific life situations.

Websites that are actively aimed at the public:

www.vyberskoly.cz and www.vzdelavanivsem.cz.

All activities described above are subject to available funding. JCMM uses multiple-funding (European, national, regional, local resources) to sustain its operations in a long-term run. This action plan is available both in English and in Czech on this JCMM webpage: https://www.jcmm.cz/projekt/orion_en

Action plan in a nutshell

Items	Comments
Coordination of OS / RRI	Project managers of individual programmes.
General Institutional Framework	Regional innovation strategy (RIS) 2021-2027 – encouraging students, young researchers, scientists, inventors & entrepreneurs in their endeavour fulfilling the „Young people ready to change the world“ motto.
Dissemination measures	JCMM websites. Facebook. Annual Report. Individual Programme Calls. Events and selected outreach activities.
Actions to embed OS / RRI in JCMM	Involve public opinion in an evaluation process of selected funding schemes (e.g. SoMoPro, other EU programs we shall administer). Organization and administration of programmes motivating young people and young scholars in research and science involving wide outreach and impact. Support creative thinking among young generation, inspiration, dexterity.

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6. Max Delbrück Center for Molecular Medicine in the Helmholtz Association (MDC)

The action plans for institutionalizing Open Science at the MDC are mainly embedded in two strategic plans: the knowledge and technology transfer strategy (only available in German) as well as the sustainability strategy, recently approved by the Board of Directors in 2021 (Annex) – both plans will be available online in the next weeks. Open Science is included as a crosscutting theme in both, as highlighted in the following sections.

Transfer strategy of the MDC

MDC follows the mission to understand the molecular basis of health and disease and to bring the generated insights as soon as possible into the clinic. The MDC transfer strategy encompasses the following key areas: strengthening the transfer culture, open science, knowledge transfer, transfer into the clinic and the technology transfer. Open science is defined as own key strategic area, although aspects of it are included in all other areas. In the following sections, relevant aspects are highlighted (translated excerpts from the transfer strategy paper).

(1) Strengthening the transfer culture

Successful transfer depends on committed and optimally trained scientists who are dedicated to the transfer process on a sustained basis. The MDC focuses on raising the awareness of its employees for transfer as well as professionalization through targeted training. This training for doctoral and postdoctoral students encompasses knowledge and technology transfer, as well as targeted support, coaching and consulting in the conception of transfer activities, supplemented by community building activities (e.g. technology transfer lunch).

We would like to emphasize the training of postdocs and the sensitization for career perspectives in technology and knowledge transfer within the framework of our ASPIRE program (Advanced Science career Development Program for Innovation and Research).

(2) Open Science

An important step in the transfer process is the open provision of generated knowledge to all participants in society. The goal is to increase society's participation in research, to open up the scientific system and make it more sustainable. The MDC supports the development of publication opportunities and the dissemination of open access content and for the transformation of licensed content to open access. It also supports sharing and reuse of research data in accordance with Open Science and Open and FAIR data principles, as well as the development and use of open source software. The ORION Open Science podcast produced by the MDC discusses and explores in depth topics such as publication practices, intellectual property, science communication, Open Data or reproducibility of studies.

(3) Transfer to society: knowledge transfer

The MDC contributes to increasing scientific literacy in society, in particular to health literacy. The aim is to enable citizens to make evidence-based decisions. Access to knowledge alone is not enough to achieve this goal - it must be communicated in a way that is appropriate to the target group. Therefore, the MDC has identified the target groups it wants to reach through its offerings and developed specific knowledge transfer formats for each target group.

- Students and teachers: For almost 20 years, the MDC has developed specific training programs for students and teachers. The goals are to promote the scientific competence and the transfer of current research results and methods to schools. Outstanding examples are the school lab „Gläsernes Labor” and the "Lab Meets Teacher" program.

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- Policy makers: MDC supports fact-based decision-making processes in politics, in particular regarding animal experiments and 3Rs (Reduce, Refine, Replace) in biomedical research. The MDC maintains contacts with decision-makers and provides information in visits, background discussions and formats such as political breakfasts, on relevant topics such as new biotechnological approaches (e.g. single cell technologies) and advises political stakeholders in the pandemic response.

- Media: Fact-based reporting on socially relevant scientific topics is actively supported by the MDC. MDC is a sponsor of the Science Media Centre, provides experts for press inquiries and organizes tailored visits and seminars for science journalists.

- Broad public: The MDC wants to address a broad public in order to strengthen the relationship between science and society and to make the research process and results understandable. To this end, it has developed various formats over the years, which interested citizens in their diversity. These include participation in events such as the Long Night of the Sciences and the Berlin Science Week with creative formats such as Mind the Gap - Science in the Underground, Reality TV – live stream on YouTube from the MDC laboratories, participation in knowledge shows or Cooking for Microbiome. The MDC seeks dialogue with various actors in society, e.g. through citizen dialog events or within the framework of the event series "Breaking Boundaries - Bridging, Arts, Humanities, Politics, the Clinic & the Public".

Sustainability strategy for the MDC

As a part of becoming a sustainable research centre, in recent years the MDC has initiated concrete measures in all LeNa (sustainability goals of the Helmholtz Association) fields of action and in the area of climate protection. To further advance the process of sustainable development, numerous goals and measures were proposed in 2020/21 in a dialog between the Board of Directors, the Sustainability Coordinator, and representatives from science and administration.

The MDC path towards sustainability defines several fields of action, goals and measures, including organizational development, research, human resources, construction and infrastructure, supporting processes and making work at the MDC greenhouse gas neutral.

Regarding research, the following areas are highlighted (excerpts from the strategy paper):

(1) Adhering to good scientific practice

Mutual trust is the prerequisite for successful scientific work. The MDC ensures compliance with the rules of good scientific practice by publishing documents on ethical standards on the homepage and by regularly carrying out qualification events for staff members. Everyone has the opportunity to report observed scientific misconduct to an ombudsperson in confidence. Sanctions regarding proven misconduct are carried out by the Board of Directors.

(2) Sustainable use of research data - Open Science

At the MDC, research data is documented transparently to secure and further develop scientific findings and to make processes traceable. Scientists are encouraged to document experimental work using electronic laboratory notebooks and to handle data according to discipline-specific standards, from collection to publication and subsequent provision[7,8]. We support the "Berlin Declaration on Open Access to Scientific Knowledge"[9] and are committed to making the data generated at the MDC available to interested researchers, taking into account the interests of our employees and compliance with legal and ethical framework conditions. We support the international exchange of research materials by making plasmids, cell lines, etc. accessible via suitable platforms.

[7] https://www.go-fair.org/fair-principles

[8] https://doi.org/10.2312/os.helmholtz.002

[9] https://os.helmholtz.de/en/open-science-in-the-helmholtz-association/eng-open-access/berlin-declaration-on-open-access-to-knowledge-in-the-sciences-and-humanities/

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In addition, the MDC encourages the publication of research software as open source and supports corresponding recommendations of the Helmholtz Association Open Science Working Group[10]. The newly established Research Data Management team develops guidelines for the structured storage of research data and helps scientists manage their data efficiently. To increase the quality, reproducibility, and utility of its research, the MDC provides a research data infrastructure that meets the latest technical and environmental standards.

(3) Responsible research

Research tasks often require a holistic view. In addition to interdisciplinary or transdisciplinary approaches, ethical issues, an assessment of potential impact and questions of applicability must be taken into account. To prepare young scientists for the complexity of research processes, we teach competencies for responsible action. One example is our participation in the social dialogue concerning animal experimentation. The MDC has signed the "Basel Declaration on Animal Experimental Research[11]" that addresses ethical issues and communicates transparently about research activities. Our scientists and animal caretakers ensure the consistent implementation of the 3R principle[12]. To provide the most resource-efficient and fair use of the animal house, its capacities are regularly evaluated by the animal house commission.

(4) Communicating and discussing scientific findings in an understandable way

The MDC communicates its research activities to target groups outside the scientific community and strives to position itself in societal debates in a fact-based and comprehensible manner. Our activities include dialogues with representatives from the domains of business and politics, the use of social media, participation in the "Long Night of Science" and the "Berlin Science Week," programs for teachers, and our support for the student laboratory "Gläsernes Labor" on the Campus Buch.

In addition, MDC has defined specific goals and implemented specific strategies for Open Access and Research Data Management:

Open Access: MDC aims to publish the full text (publishers version or accepted manuscripts) of all MDC and ECRC publications in the MDC repository. Additionally, in order to support the goal of the Helmholtz Open Access policy (60% of all publications should be published as open-access publications by the end of 2020 and 100% from 2025 on) the MDC library has created a central publication fund, which pays the charges for all articles in open access journals[13].

Open Data: As of 01.03.2021, a Policy Framework for Research Data Management (RDM) at the MDC has been approved. MDC is committed to make data created as part of the research process compliant with the FAIR principles and "Guidelines for Safeguarding Good Scientific Practice" of the German Research Foundation (DFG, Germany's largest research funding organization. The RDM unit at the MDC is now in the process of creating MDC guidelines for Open and FAIR research practices. Meanwhile, RDM awareness and implementation is supported through outreach and communication activities, such as community calls, one-on-one support and workshops teaching pragmatic ways of how to organize and handle data for future reuse[14].

[10] https://os.helmholtz.de/de/open-science-in-der-helmholtz-gemeinschaft/stakeholder-und-ihre-rollen/task-groups/task-group-forschungssoftware/empfehlungen-zur-implementierung-von-leit-und-richtlinien-zum-umgang-mit-forschungssoftware-an-den-helmholtz-zentren/

[11] https://de.basel-declaration.org/basel-declaration/

[12] https://www.mdc-berlin.de/research-animal-experiments-3r/3r-principles

[13] https://www.mdc-berlin.de/library#t-openscience

[14] https://www.mdc-berlin.de/research-data-management/organizing-your-data

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Annexes

1. BI's Strategic Plan (2021 – 2024)
2. CEITEC's Strategic Plan (2021 – 2028)
3. CRG's Strategic Plan (2021 – 2024)
4. ISCIII' Strategic Plan (2021 – 2025)
5. MDC Sustainability Plan (2021 Roadmap)

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ACTION PLAN TO EMBED OPEN SCIENCE IN THE BABRAHAM INSTITUTE

Final Version, 22 July 2021

RESPONSIBILITY		TIMEFRAME		
RIC	Research Integrity Committee	Short	< 6 months	Q4 2021
HR	Human Resources	Medium	6 – 12 months	Q4 2021 – Q1 2022
GL	Group Leaders	Long	12 – 36 months	Up to 2024
OSIL	Open Science Institutional Lead			
WGOS	Working Group on Open Science			
GC&GST	Graduate Committee and Graduate Studies Tutor			
HoRO	Head of Research Operations			
HoSF	Heads of Science Facilities			
Comms	Communication Team			
PE	Public Engagement Team			
WM	Website Manager			
ORION-PO	ORION Project Officer			
CIO	Chief Information Officer			

Areas actions fall into: Communication (C), Leadership (L), Skills (S)
ORION Evidence – Makes reference to the evidence where this action is based on
Linked to – Makes reference to where an action is related to other initiatives in ORION, the Institute or beyond

AREA	ACTION No	ACTION	TASKS	RESPONSIBILITY	TIMEFRAME
L	1	Appoint a senior manager at the Institute to lead Open Science approaches (OSIL) **LINKED TO**: - ORION Sustainability Plan (D6.4)	- Horizon scanning - Community Engagement - Named Person (Point of contact) - Intranet/website OS content management - Chair of Institutional Working Group on Open Science	**KPI**: - Number of actions contained in this plan implemented	Short
L	2	Establish a Working Group on Open Science (WGOS)	- Write terms of reference - Find volunteers from all career stages and facilities/departments	ORION-PO / RIC **KPIs**: - Existence of WGOS - Number of actions contained in this plan implemented	Short
L	3	Establish a dedicated site in the intranet and website for open science **ORION EVIDENCE**: - ORION website and institutional webpages on Open Science (D6.2)	- Define location - Upload ORION open science resources (Educational Resources and this action plan) - Manage and maintain content	WM & Comms (website) / RIC (intranet) / OSIL **KPIs**: - Existence of internal and external sites - Number of visits - Number of clicks / downloads	Short
C	4	Publish a statement on OS (public facing version of BI OS vision and mission) in intranet and website **LINKED TO**:	- Define successful open science at the Institute (vision and mission) - Summarise BI OS V&M for external audiences - Upload in intranet and website	WGOS / OSIL (intranet) / WM (website) **KPIs**:	Medium

		- Institutional strategic initiatives - Research Culture		- Number of visits and other analytics (visibility)	
C	5	Establish advocacy programme to encourage uptake of open science practices **ORION EVIDENCE**: - 'Self-assessment survey on OS views and practices' (T2.1) - 'Finalised data from self-assessment of partner RFPOs' (D2.2) - 'Analysis of knowledge and practice about Open Science and RRI' (D2.5)	- Remit: Share best practices on Open Science and how it supports researchers/technical staff in their career - Invite external speakers whose (institute-relevant) work demonstrates the benefits and impact of OS (2 speakers a year) - Create an archive of advocacy resources (in the public domain) and institute activities (talks on the topic) - Present OS developments at Infosites - Advocate the use of author identifier systems such as ORCID across their institution to help identify authors systematically - Launch an Open Science prize	WGOS / OSIL **KPIs:** - Annual number of external speakers invited - Annual number of talks / seminars - Volume of research data published in BI storage solutions (expected to rise) - Use of researchers and datasets persistent identifiers (ORCID / PID)	Short
L	6	Develop Institutional Open Data and Research Data Management policies aiming at embracing the FAIR principles (findable, accessible, interoperable and re-usable) for all Institute research outputs **LINKED TO**: - Intellectual Property Policy (BI-KEC-001) - BI Research integrity Policy	- Identify existing barriers and resources needed (e.g. data storage options, software such as to support electronic lab notebooks) - Monitor the implementation and uptake of such policies - Include Terms of Reference for metadata (descriptive data about data) - Ensure researchers understand which are BI storage solutions to support that research data is available for sharing and reuse - Terms of reference for engagement with the EOSC	CIO / HoRO / HoSF **KPIs:** - RDM and OD policies exist - Number and profile of visitors to the policies - RDM working group exists - Publication of BI guidelines on RDM and open data - Use of external repositories by BI researchers - Number of open (and FAIR) research outputs (protocols,	Medium

				software, datasets, code, electronic lab notebooks, negative results, etc) - Use of BI core facilities (expected to grow after publishing RDM policy). Measure this value on a regular basis - Volume of research data (number of datasets) published in BI storage solutions (in reference to storage capacity) - Number of metadata sets published in BI storage solutions (should equal number of available datasets) - Number of Electronic Lab Notebook users at BI - BI investment in (income dedicated to) RDM (e.g Creation of new job profiles or institutional services dedicated to RMD) - Number of training courses provided or mediated by BI on RDM and open data + number of researchers engaged	

				- Volume of researchers engagement with RMD policy and practices per ISP - Number of persistent identifiers (PID) for published datasets and researchers identifiers (ORCID) - Number of RDM plans created and published - Number of datasets deleted or withdrawn - Existence of a catalogue of where researchers have published data (or stored if not available)	
S	7	Develop evaluation, recognition and career development frameworks and policies that supports Open Science practices at the Institute **ORION EVIDENCE**: - 'Finalised data from self-assessment of partner RFPOs' (D2.2) - 'Analysis of knowledge and practice about Open Science and RRI' (D2.5) **LINKED TO**: - ´Evaluation of Research Careers fully Acknowledging Open Science Practices´ (EC; 2017b)	- Institutional research assessment processes should embody the two principles set in DORA[5]: 1. Be explicit about the criteria used to evaluate scientific productivity, and clearly highlight that the scientific content of a paper is more important than publication metrics or the identity of the journal in which it is published 2. Recognise the value of all relevant research outputs (for example publications, datasets and software), as well as other types of contributions,	- GC&GST / HR / GL / HoSF **KPIs**: - Use of the institutional catalogue of where researchers have published data (or stored if not available) to assess or evaluate researchers and their outputs - Open Science skills training is fully embedded in Students Log	Long

		- The Open Science Career Assessment Matrix (OS-CAM), proposed by the EU Working Group on Open Science Rewards (O´Carroll, 2017: 15-17)	such as training early-career researchers and influencing policy and practice. - Develop roadmap or activity to 'operationalise' the DORA principles into good practice. - Identify mechanisms at the Institute to record and acknowledge Open Science training so that one can demonstrate competencies as part of career development, appraisals and promotions - Seek ways for Open Science practices to be acknowledged in professional development and career progression of all staff (e.g. Embed Open Science principles in the Institute's research assessment and appraisal system) - Provide proper guidance or training to those who are involved in appraisal and promotions - Periodically monitor, reflect and update research assessment so it remains fit-for-purpose and in line with open research	- Existence of clear and transparent criteria used for recruitment, promotion and other career development decisions that recognise the value of all relevant research outputs and contributions (E.g. training, policy-making, public engagement) - Publication of guidelines on how to incorporate and assess open science practices for those who are involved in appraisal and promotions (E.g. open research outputs, altmetrics, citations, replicative experiments, re-use of datasets, peer review activities, mentoring/supervision, public engagement, knowledge exchange, etc) - Provision of training course on research assessment for managers, group leaders and senior researchers (optional for all other staff)	
L	8	Align the public engagement strategy and programme with the Institute's open	- Acknowledge BI OS V&M in PE strategy and public statement	PE	Medium

		science vision and mission (where relevant)	- Integrate citizen science in PE strategic goals - Name an institutional point of contact for Citizen Science - Develop a Citizen Science advocacy programme. Topics to cover: • Benefits & challenges • Existing support • Expectations & other considerations (commitment for infrastructures and data repositories) • Criteria for successful Cit-sci projects based on funders requirements • Guidelines on ethical, legal and privacy considerations for Cit-Sci projects	**KPIs**: - Reference to BI open science position in new PE strategy - Inclusion of Citizen Science in new PE strategy - Easily available information on institutional point of contact for citizen science initiatives and enquiries - Published guidelines on citizens science (based on the CitSci advocacy programme) - Number of citizen science project proposals submitted for external funding - Number of citizen science project successful proposals	
S	9	Develop a strategic approach to skills training at the Institute integrating open science concepts and their practical applications **ORION EVIDENCE**: - 'Finalised data from self-assessment of partner RFPOs' (D2.2) - 'Analysis of knowledge and practice about Open Science and RRI' (D2.5) - Final evaluation report on trainings (D5.5)	- Determine long-term strategy to resource Open Science skills training - Provide appropriate support, professional development and training opportunities for Open Science, tailored to employees' different needs (role* and seniority, career progression, goals) * Scientists at all career stages, research managers, data scientists and stewards, copyright/knowledge exchange officers, etc.	- GC&GST / HR / OSIL **KPIs**: - Inclusion of open science module in students inductions - Development of a catalogue of open science skill trainings available to BI scientists Existence of institutional incentives (E.g. bursaries for external courses on open	Long

		LINKED TO: - ORION sustainability plan	- Include information on Open Science and how the Institute aligns with it in student inductions - Open Science specific skills trainings to consider: • Scholarly publishing • Research Data Management • Research Integrity and Ethics • Citizens Science • Collaborating and networking • Assessing the impact of initiatives in public • Narrative CVs	science skills) and support (e.g catalogue of available courses at BI and other organisations) for open science skills development - Monitor take-up of OS training and impact (E.g. annual survey open science practices)	
S	10	Recognise open science practices in hiring processes and policies	- HR to familiarise with the OSF Modular Certification Initiative for Recognising Open Research Practices in Hiring Policies for institutional staff positions that involve research - Familiarise with Wellcome recommendations on FAIR and responsible hiring processes in line with the principles set in DORA - Provide proper guidance or training to those who are involved in staff recruitment	HR / GL / Staff with managerial responsibilities **KPIs**: - Publication of guidelines on how to assess open science practices for those who are involved in research staff recruitment - Number of mentions to open research practices (E.g. Open data, open code/software, open educational resources, pre-registrations, open access publications, preprints) in advertised research job descriptions	Long

				- Number of mentions to open research practices *as desirable characteristic* in advertised research job descriptions - Number of requests for narrative CVs in application processes - Existence of clear and transparent criteria used for recruitment, promotion and other career development decisions that recognise the value of all relevant research outputs and contributions (E.g. training, policy-making, public engagement) - Publication of guidelines on how to assess open science practices for those who are involved in recruitment and promotion decisions (discouraging the use of proxy indicators and encouraging to weight in the use of open science practices and other contributions - Absence of (direct or indirect) references in job advertisements to journal	

				title use as a proxy for quality (for example ‘a track record of publication in leading journals’)	

CEITEC
MASARYK UNIVERSITY

Strategic Plan of the Central European Institute of Technology at Masaryk University for 2021–2028

[version sent for the rector's approval]

CONTENT

INTRODUCTION

Mission

CEITEC MU is a research institute of Masaryk University and a member of CEITEC consortium that aims to improve quality of life and human health through scientific research and innovations.

Vision (2028)

- Leading European research institute in life sciences, known for its discoveries
- Centre for using and developing cutting-edge technologies as drivers for inter-disciplinary research
- Strong scientific community with open and interactive internal culture and governance that gives recognition to all its people
- Active voice in public awareness and debate on societal consequences of life science discoveries and trends underpinned by them
- Recognized player in knowledge sharing by bridging major European life science alliances (EU-LIFE and Alliance4Life)

Values

- Excellence based on curiosity-driven research
- Scientific independence
- Interdisciplinarity and collaboration
- Open science and knowledge sharing
- Integrity, ethics and social responsibility
- Equal opportunities, inclusiveness, transparency, openness, fairness

Strategic priorities

- Excellent research
- Supporting future leaders in research
- Research infrastructure
- Governance and human resources
- Societal relevance and recognition

FUNDAMENTAL PRINCIPLES

Curiosity-driven research performed by independent research groups

CEITEC MU conducts basic research in the area of life sciences and delivers each year over 350 publications, of which more than 55 % are published in Q1 journals. **To fulfil institutional vision and become the leader in the European context in the area of life sciences (in particular, molecular and structural biology), CEITEC MU will continue building an attractive, research-oriented environment combined with state-of-the-art infrastructure and transparent, progressive governance.**

A fundamental unit of the institute is a research group headed by a group leader, who formulates research directions. **We believe that unrestrained curiosity-driven research is the best path towards scientific excellence. Therefore, academic autonomy and scientific freedom of each research group are paramount principles at CEITEC MU.** In such a strategy, the success of the institution depends on the success of its research groups. The main managerial instruments for implementing such a strategy are: 1) selection and hiring of top-quality candidates for group leader positions, 2) providing the best possible support and conditions for curiosity-driven research, and 3) regular peer-evaluations by renowned international experts to provide feedback on research group performance.

CEITEC MU will keep its current pace of opening one new research group approximately every two years, which is a reasonable pace considering the constraints on institutional funding and physical space. By 2028, CEITEC MU will have appointed 3–4 new research groups. The focus will continue to be on junior group leader hires, with a high chance of acquiring external funding through a major individual grant. New hires will be selected based on scientific excellence and with regards to complementarity to current research programs/disciplines and benefits from the existing instrumentation and core facilities expertise.

Profile topics

Profile topics are research activities that combine the efforts of several research groups and provide CEITEC MU with high national and international visibility, competence in frontier technologies, or lead to a tangible socio-economic impact and innovative applications. Formulation of such topics is important for shaping the profile and visibility of the institute, showing its impact on society, guiding future infrastructural developments and strategic partnerships, and providing a frame and topics for future large-scale institutional projects.

RNA/nucleic acids in health and disease

RNA/nucleic acid biology is a research topic that includes many research groups and in which CEITEC MU has reached critical mass for becoming a leading European centre in this field. The particular strength of

CEITEC MU in this area is in the variety of approaches and questions addressed by the research groups, spanning from basic research to clinics, bridging atomic resolution to molecular functions and whole organisms, connecting molecular principles with disease and therapy. Excellence and the critical mass of CEITEC MU is further demonstrated by its track record in major individual and institutional grants, recognition of its people by scientific bodies, and by its record of being host to international research conferences. With the support of the H2020 Twinning project, CEITEC MU has also established a consortium with four leading European institutes with the aim to further integrate knowledge and expertise in the area of RNA biology.

Taking into consideration the enormous applied potential of RNA/nucleic acid biology as exemplified by CRISPR-Cas9 technology or the development of diagnostic tools and vaccines during the COVID pandemic, as well as its integrative aspect within the institute, CEITEC MU will aspire to become a leading European research centre in this area.

Cancer biology

Cancer biology is a key topic at the department of molecular medicine that includes the development of diagnostic tools for blood and solid tumours, using next generation sequencing approaches, mechanistic research on blood malignancies with the aim of developing new methods for therapeutic interventions, as well as basic research of molecular pathways contributing to tumorigenesis. Research that is relevant to cancer biology is not limited only to the department of molecular medicine. Approaches developed by computational chemists and structural biologists are important for drug design and their specific delivery, and several research groups work on the development of pharmacological compounds with applications in cancer treatment. In addition, a number of groups working on mechanistic aspects of gene regulation and genome stability consider the impact of their research primarily in cancer. Part of the cancer-related research at CEITEC MU will be integrated into the **National Institute of Oncology**, whose features are currently being negotiated.

Brain disorders

CEITEC MU is currently well positioned and internationally acknowledged in neurodegenerative diseases, epilepsy, stress and behavioural disorders research. These topics are carried out in the neuroscience department, which has been actively engaged in the search for early diagnostic and prognostic markers, using multimodal MRI imaging, EEG and neurostimulation methods. The groups also work on the deep characterization of distinct phenotypical profiles and study their underlying neural correlates and mechanistic pathways, all of which are important for the development of drugs and drug trial designs, and identification of optimal candidates and targets for invasive (deep brain stimulation surgery) and non-invasive brain stimulation approaches. Some groups also have expertise in animal research of various animal models of brain diseases such as Parkinson's disease or epilepsy. This could be developed further with **The Bio Pharma Hub** in cooperation with other faculties of MU and with core facilities at the campus. In the long-term perspective, however, keeping this capacity may require a strategic arrangement towards better consolidation of the field across Masaryk University.

Infectious diseases

An emerging profile topic at CEITEC MU is infectious diseases. **The COVID-19 pandemic reminded us of how devastating infectious diseases are for human society and demonstrated the importance of research in this field.** The major threats are posed not only by the emergence of new zoonotic viruses, but also by antibiotic-resistant strains of pathogenic bacteria. As a reaction to the current situation, the Czech government decided to establish the **National Institute of Virology and Bacteriology (NIVB)**. The institute will be based on several CEITEC MU research groups working on structural aspects of virus biology, phage-based antimicrobial therapies, and development of new antibiotics. We plan to recruit several new research groups with expertise in this area to support of NIVB, which will help to shape the profile of CEITEC MU in this direction. This initiative may establish CEITEC MU as a **national leader** in this highly relevant research topic.

Harnessing knowledge of plant biology for crop improvement

The research profile of CEITEC MU is unique at a national level due to a strong plant sciences department, whose research is relevant for sustainable primary production, agriculture and food security. **Due to climate change and an increasing human population, achieving sustainable agricultural production is an important societal task and its solution will require major innovations.** One approach is a rational design of new breeds of crops with better yields, nutrition value, and more eco-friendly cultivation. Genome editing enables the knowledge obtained in plant model species to be applied to crops. This creates an unprecedented opportunity to exploit the vast knowledge we gained on molecular underpinnings of plant physiological processes for crop improvement. CEITEC MU aims to **organize a national network focused on exploiting genome editing in crop research and breeding**. This could result in the establishment of a technology pipeline focused on nationally important crops that would greatly facilitate experimental work with crops and promote collaborations between basic and applied sectors.

At the frontiers of technology: correlative approaches to connect dynamics and structure of living systems

Advances in microscopy have been an important driving force for discoveries in life sciences. On one hand, we can study cell ultrastructure at near-atomic resolution by electron microscopy (EM), on the other hand fluorescence microscopy and atomic force microscopy (AFM) enable the observation of dynamic processes and biochemical changes in living cells. The combination and correlation of these different readouts from one specimen opens opportunities to understand structure–function relations in living systems. However, this approach is still far from being routinely applied in life sciences. Correlative microscopy requires customized instrumentation and poses technical challenges concerning sample preparation and handling and data analysis.

Development of correlative microscopy is a great opportunity to accelerate research at CEITEC and to gain unique advantages in technology. Cryo-EM is already one of CEITEC´s technology strongholds, we also possess expertise in AFM, and during the past five years we have managed to concentrate capacities in light microscopy by establishing Cellular Imaging Core Facility (CELLIM). Brno is a word-wide centre of electron microscopy production with important companies based in the region. Therefore, it is natural that **CEITEC MU in cooperation with CEITEC consortium partners will aspire to establish an R&D platform in correlative microscopy.**

Research infrastructure

The large research infrastructure at CEITEC MU is operated by core facilities (hereinafter also referred to as 'CF') that focus primarily on serving CEITEC researchers, who form the core of their user base, but also support scientists from Masaryk University and the Brno region. **The state-of-the-art equipment enables our scientists to perform ground-breaking research. Anticipating and keeping up with technology development is a necessary precondition for the success of CEITEC MU in producing excellent research.**

The majority of CEITEC core facilities are associated with Large Research Infrastructures for Research, Experimental Development and Innovations on the Roadmap of Czech Republic for the years 2016-2022 and with ESFRI Roadmap. **We aim to have all core facilities being included in research infrastructure consortia both at national and international level.**

The Institute will continue improving its core facilities and will prepare a strategy to optimally employ the resources available for their further development. Great attention will be paid to the **re-investment strategy** for key instruments, principles for allocation of new equipment to core facilities, and

mechanisms to involve researchers in defining the needs for new infrastructure. CEITEC will develop its IT resources and connected services in data management and software support by establishing an **IT core facility**.

Core facilities will undergo the evaluation procedure with a similar periodicity as research groups. The aim of the regular evaluation is mainly to increase the quality of provided services and to provide management with the information required for the formulation of the re-investment plan as well.

Independent scientific evaluation

The evaluation of research groups, performed approximately every four years, remains a very powerful and necessary tool for the management and development of the institution that has a direct impact on the continuation of research groups at the institute. At the same time, it provides space for individualized, highly qualified feedback on the performance and possible development of each research group. Both of these aspects support the excellence and long-term prosperity of the institute.

CEITEC MU takes advantage of the consortial evaluation of scientific excellence, and uses an international panel of experts chaired by the International Scientific Advisory Board (ISAB) members for informed peer-review evaluation based on scientific performance and other criteria which constitute high quality research.

Grant strategy

National grant schemes are at present, and most probably will be in future, the single most important type of research funding available. CEITEC MU must keep the current rate of acquiring national grants.

However, CEITEC MU fully supports, and will strongly encourage, group leaders aspiring for prestigious individual grants, which bring holders incomparably greater international visibility and reputation. Major individual research grants (such as ERC, ERC-CZ, GAČR EXPRO, etc.) represent optimal convergence between scientific excellency and financial sustainability. A decision by an external funding provider to place a bet with a significant amount of money (approximately 10 mil CZK a year) on a scientific plan strongly demonstrates credibility, viability and competitiveness of a research group´s plan, and represents an additional form of independent external evaluation. **CEITEC MU should aspire to achieve the level where cumulatively about one half of its research groups would hold such major individual grants by 2028**, perhaps by stating a formal expectation that a senior group leader should regularly submit a proposal for a major individual grant every five years.

Institutional grants are essential in supporting research infrastructure and strategic development initiatives. CEITEC MU will have the ambition to undertake large scale projects towards the fields of virology and bacteriology, as well as within the Masaryk University's aim of establishing The Bio Pharma Hub at the university campus.

Investing in people (HR Excellence in Research)

Since its establishment, CEITEC MU has considered people the most important factor for building a successful research centre and carrying out high-quality research. CEITEC MU keeps the trend as stated in its **HR strategy and HR Excellence in Research Award action plan** that fully implements the principles of the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers. Notably, further attention will be paid to strengthening group leaders and core facility leaders in their managerial and supervision role.

It is our responsibility to **increase the employability of early-stage researchers** that spend their PhD or postdoc stay at CEITEC MU before they leave the institute or change their career trait according to the career system. We aim to further reinforce our **training program for early-stage researchers** to provide them with the crucial skills to become future scientific leaders. Besides having established thesis advisory committees as a standard of the CEITEC PhD School for PhD students, postdocs should have the opportunity to take advantage of working closely with a mentor. Continuing in close and systematic discussion and cooperation with the Faculty of Sciences and Faculty of Medicine on common standards of PhD programmes is essential, aiming to ensure the same quality of PhD experience to all CEITEC MU PhD students.

One of the important tools of human resources management will be a **retirement and outplacement policy**. It is not expected that CEITEC MU could grow above its current size of 31 research groups (as of 1 January 2021) in the period up until 2028. Dissolution of research groups will be realized on performance-based evaluation or due to the departure (outplacement or retirement) of a group leader. During the implementation period of this strategic plan, a number of CEITEC MU research group leaders will be eligible for retirement under relevant legislation. The challenges arising from this fact will need to be addressed as part of a **broader process of generational change of science leaders at the institute**.

In the previous period of 2016–2020, the institute began structural changes aimed at the elimination of the so-called “inbreeding” practice by changing the career system and formulating a new recruitment policy following the OTM-R principles. In the following period, the challenge of proper implementation of the recruitment policy and managerial evaluation of head group leaders is ahead of us.

Governance and organisational structure

The current size of no more than about 30 research groups gives the opportunity to consider flattening the structure and re-organizing institutional governance so that the role of the research group leaders’ meetings increases. The interaction between group leaders, core facility heads and the management might be supported by a few select committees (a successful case currently is the IT committee). Consideration will be given to the role of departments (research centres) as the intermediary organizational level, and their organizational model. A model of departmental leaders (heads of centres) holding their positions on a basis of rotation among senior research group leaders might be considered, so that departments could better function as platforms facilitating collaboration among groups rather than as part of the line-management structure.

CEITEC MU research groups are currently organized in four **research departments**: Centre for Structural Biology, Centre for Molecular Medicine, Mendel Centre for Plant Genomics and Proteomics and Centre for Neuroscience. This stratification reflects the structure of the four life science research programs that jointly formed CEITEC. Originally, these research programs formed semiautonomous units with their own budget that was further allocated to research groups. Because the budget is now directly allocated to individual research groups, the internal organization of CEITEC MU into departments is no longer tied to finances and has become more flexible. CEITEC MU departments can currently be perceived as units that organize research groups with similar research interests and infrastructural needs. Such stratification facilitates the organization of field-specific seminars and PhD studies, management of joint infrastructure, or presentation of the field to outside stakeholders. Many researchers at CEITEC MU are active in the area of molecular and cellular biology, but this is not reflected in the current departmental structure. Therefore, we are considering the **establishment of a department of molecular and cellular biology** in the near future. We may also establish a new **department for infectious diseases**, due to the participation of CEITEC MU in the National Institute of Infectious Diseases.

Space availability is the main limiting factor not only for CEITEC MU development but also for keeping its performance at the current level. The institute will address this issue using a variety of approaches, some of which were already stated above, such as keeping the size of the institute at the level of approximately 30 research groups, optimizing use of the current premises through space re-allocations (with a **priority allocation to internal groups**). The issue of space availability needs to be accordingly discussed with the university management.

Societal relevance and recognition

We aim to be an active voice in public awareness campaigns on the **importance of basic research for society**; and to participate in the debate on **societal consequences of life science discoveries,** and trends underpinned by them. Using recruitment policy and campaigns focused on building a **strong employer brand**, we aim to improve the visibility of CEITEC as an employer of choice, and of the prestige of the CEITEC PhD School and postdoc program.

CEITEC MU is striving to build a **strong CEITEC brand** and maintain good relations with all stakeholders at national and international levels. **Building a strong CEITEC brand has a synergic effect and strengthens the university's visibility and prestige as well.** The communication strategy of the institute is based on its values and strategic goals. Our values are not only being communicated outwards but are also alive within our organisation. CEITEC is proud to be an international research institute and therefore puts a great emphasis on communication in the English language.

CEITEC MU pursues the strategy of a strong institutional profile successfully through strengthening the international recognition. The position of CEITEC MU is visible on the European research map primarily through two strategic alliances: **EU-LIFE** and **Alliance4Life**. CEITEC joined EU-LIFE in 2013 as one of the founding members, and founded Alliance4Life in 2018. **Based on systemic work in these alliances and gained work done in the previous period, CEITEC MU strives to become a bridge for transferring good practice and governance experience between both alliances,**

interconnecting in this way the western and eastern parts of Europe, and meeting the societal role of a truly Central European institute.

KEY PERFORMANCE INDICATORS

Indicator	Target value (2028)
Share of top-quality publications (T10)	*20 % of publications in T10*
Number of newly awarded prestigious individual grants	*10*
Number of large scale institutional projects	5
Number of newly appointed group leaders	*3–4 new research groups by 2028*
Total number of research groups	*30 research groups*

LIST OF ABBREVIATIONS

CEITEC	Central European Institute of Technology
CF	core facility
ISAB	Independent scientific advisory board
MU	Masaryk University
NIVB	National institute for virology and bacteriology
OTM-R	open, transparent and merit based recruitment
RG	research group
RI	research infrastructure

ANNEX: IMPLEMENTATION PLAN

The implementation plan is to be specified and updated regularly as part of annual management planning and reporting.

Goals	Key implementing measures	Indicators / Outcomes
1. Attract and hire talented excellent scientists with the ambition and potential to obtain prestigious individual grants in the area of life sciences	Recruitment (Hiring) strategy Headhunting Grant strategy – individualized approach in providing grant office services	Number of newly appointed group leaders *Target value: 3–4 new research groups by 2028* Number of newly awarded prestigious individual grants *Target value: 10*
2. Keeping the size of the Institute and managing the outplacement and retirement of senior group leaders	Retirement policy Outplacement policy and negotiation with faculties	Total number of research groups *Target value: Total number of 30 research groups*
3. Strengthening of Institute's profile topics: • RNA/nucleic acids in health and disease • Cancer biology • Brain disorders • Infectious diseases • Crop improvement by genome editing • Correlative approaches to connect dynamics and structure of living systems	Preparation/Implementation of large scale institutional projects in the defined profile topics Specific PR campaigns focused on strengthening the profile topics	Number of large scale institutional projects *Target value*: 3 Number of international conferences promoting Institute's profile topics organized by CEITEC MU *Target value: 2*
4. Becoming a national leader in specific research areas	National institute for virology and bacteriology National oncology institute	Number of other large scale institutional grants *Target value: 2*

5. Improvement of research performance quality through international peer-review evaluation	Peer-review evaluation by independent external experts approximately every four years Regular evaluation of junior group leaders typically after four years from starting their group leader position Support measures aiming to increase the share of top-quality publications (T10)	Share of top-quality publications (T10) *Target value: 20 % of publications in T10*
6. Linking research at CEITEC MU with research activities at the university – Bio Pharma Hub	Teaching collaboration Sharing the infrastructure Infrastructure for preclinical studies Collaboration with life sciences faculties	Number of study subjects organized for the pharmaceutical faculty *Target value: 2*
7. CEITEC MU keeps the trend as stated in its HR strategy and HR Excellence in Research Award action plan	HR strategy and HR Award action plan Gender equality plan (GENDER+)	*Target: HR Award re-awarded in 2023 and 2028*
8. Systematic support for open science and responsible research and innovation principles	Open science strategy	Number of publications in open access mode *Target value: 80 % publications are published in OA mode*
9. Building bridges to industry	Cooperation with industry strategy and action plan(s)	-
10. Transformation of research departments role in organizing scientific community life	Field seminars PhD specializations	-
11. Covering the demand for educational programs in the areas of profile topics	Accreditation of new programs (virology, correlative microscopy) in collaboration with relevant faculties or else by decision of Masaryk University	Number of new study programs *Target value: 2*

12. Reinforce our training program for early stage researches (PhDs, postdocs) and junior group leaders to provide them with crucial skills and competencies essential for their future career	Early stage researchers training programme Mentoring for postdocs Thesis advisory committee as a standard of the CEITEC PhD School Unification of standards across PhD programs in close cooperation with the campus faculties Training academy for junior group leaders	-
13. Improving visibility of CEITEC PhD School programs and postdocs program to attract top talented and highly motivated candidates	Recruitment strategy Employer branding	Number of candidates per announced position Share of recruitment procedures that are successfully closed Evaluation of candidates' quality by hiring managers (subjective assessment) *Detailed set of indicators is included in the annual HR report.*
14. State-of-the-art equipment enables our research groups to perform ground-breaking research	National and international RI roadmaps participation Re-investment strategy to optimally employ available resources Open and transparent discussion of (re)investment plans Pricing policy	Number of core facilities involved in the RI roadmap *Target: All CFs are involved in the national RI roadmap*
15. Further development of the core facility model in planning, management and operation of research infrastructure	Defining principles for placement of research equipment into CFs/RGs Evaluation of CF management and operation	-

	Training opportunities for CF personnel	
16. Bring the Institute and the campus faculties closer as stakeholders in the core facilities	CF user committees Systemic dialogue at the level of institutional management of CEITEC MU and campus faculties in respect of research infrastructure planning	-
17. Optimizing the use of laboratory and office space and aiming to increase the space available	Space allocation policy	Number of m2 of office and laboratory space
18. To ensure professional IT support for research groups and core facilities in close collaboration with ICS MU ("IT as Core Facility")	Contract based on service price list with ICS MU IT Policy	-
19. To increase public´s awareness about CEITEC and to strengthen the CEITEC brand	Value-based communication of research results and institutional management through PR and communication strategy formulation and implementation Communication campaigns promoting importance of basic research and its transfer to application	*Details are set up in the PR strategy and action plans/reports.*
20. Serving as a bridge in transferring good practice and governance experience	Active knowledge sharing with MU and CEITEC consortium partners Active knowledge sharing with partners from EU-LIFE and Alliance4Life Knowledge sharing on national and international level	*Improvement in various aspects of institutional governance (CEITEC as well as all involved partners) based on annual action plans of EU-LIFE and Alliance4Life* *Activities in research policy fields on national and international levels based on annual action plans of EU-LIFE and Alliance4Life*

Centre for Genomic Regulation (CRG)

Strategic Plan (2021-2024)[1]

QUANTITATIVE BIOLOGY

Preamble

A paradigm shift is occurring in biomedical sciences, whereby living systems are becoming amenable to quantitative description, with profound consequences for our ability to predict biological phenomena and for manipulating the regulatory networks that sustain them and that become altered in disease. Embracing this new paradigm is a challenge but also offers important opportunities. The CRG has the flexibility to incorporate new technologies and concepts through its faculty turnover, and has a distinct expertise in computational and systems biology, combining experimental and *in silico* approaches, as well as groups working on human diseases with strong collaborations with clinicians. The centre also offers unique opportunities to establish strategic alliances and partnerships locally and worldwide.

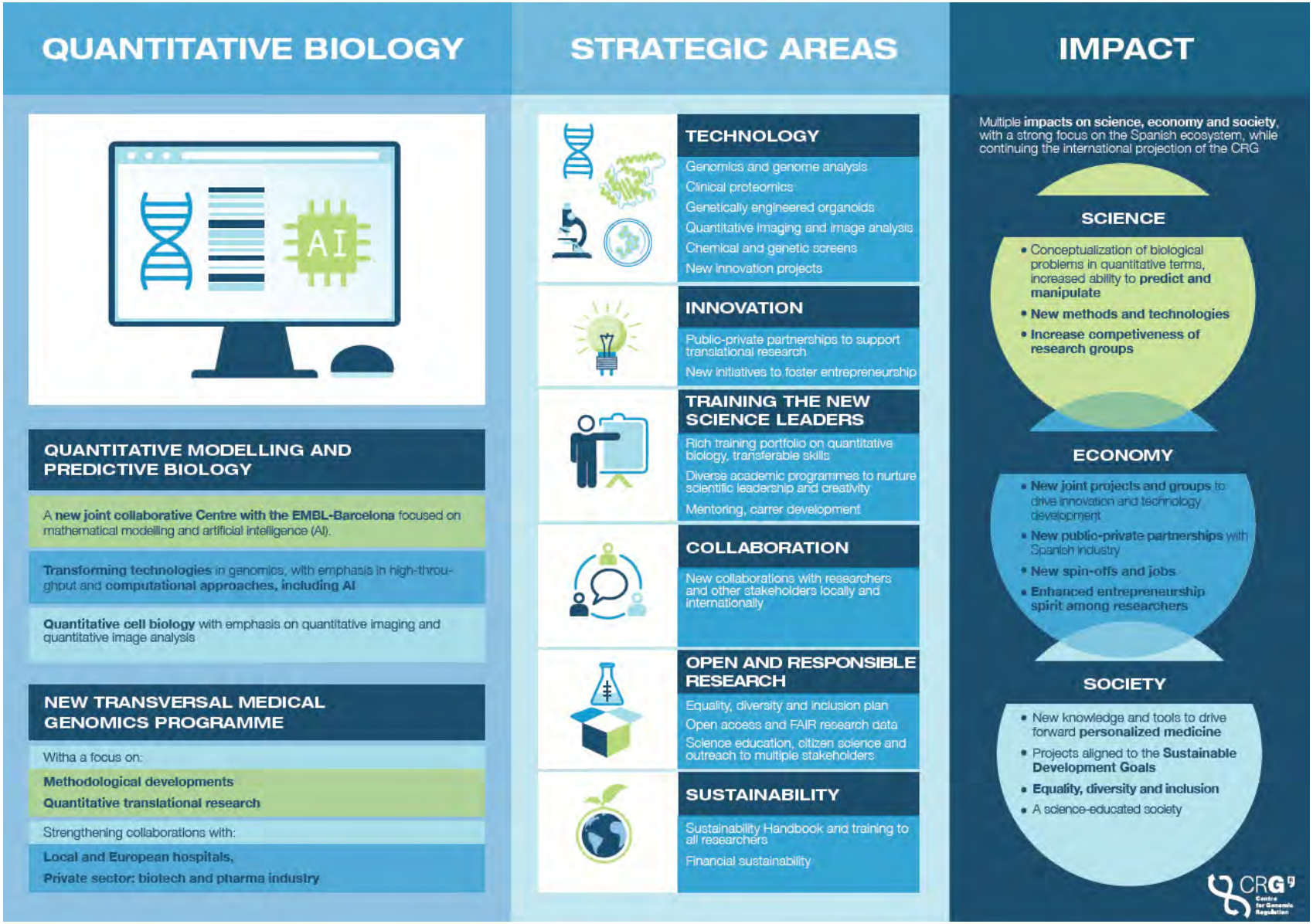
Our new Strategic Plan emerges from the perceived need to leverage our strengths to capture the opportunity to take a leading position in the implementation of quantitative approaches to fundamental problems in genomics, gene regulation, cellular and tissue organization and their pathological alterations leading to disease.

Vision

Our vision for the next years is that the CRG becomes a major contributor to the historical paradigm shift of converting biomedical research from a descriptive discipline into a quantitative, predictive, actionable science. While continuing nurturing a stimulating environment and cutting-edge technologies to conduct innovative fundamental research, we will develop/implement novel quantitative and computational approaches to address challenging questions in biology, therefore becoming an international reference in genomics and its applications to biomedicine and biotechnology.

[1] Version 1.0: 13th of April 2021.

The CRG Strategic Plan at glimpse (2021-2024)



A. STRATEGIC SCIENTIFIC AND TECHNOLOGY PRIORITIES

The new Strategic Plan focuses on two grand **scientific and technological priorities** under the conceptual framework of "Quantitative Biology".

1. To develop quantitative modelling and predictive biology to permeate quantitative approaches throughout the research of the whole institute, as well as in Barcelona.

We will promote 3 main initiatives:

i. Creation a new joint Centre with EMBL-Barcelona focused on **modelling and predictive biology**, with a truly and original collaborative spirit and organization – a "*collaboratorium*". The centre is supported by the Catalan and Spanish government.

To position Barcelona and Spain at the forefront of quantitative and predictive biology, we have established a partnership with the EMBL to found a new joint collaborative Centre for modelling and predictive biology, as a key strategic objective.

The Centre will occupy an entire floor of the Pasqual Maragall Foundation, designed as "open lab" for ~30 researchers (composed of faculty members, PhDs and postdocs from CRG and EMBL, fellows, and multiple visitors), with meeting and seminar rooms to bring together and stimulate collaborations between research groups from Institutes and Universities in Barcelona, Spain and abroad.

The objectives of the centre – "collaboratorium" – are the following:

1. Nucleate a critical mass of junior and senior researchers applying modelling to understand, predict and build biological systems.

2. Break the boundaries between the diverse research institutes in Barcelona and promote collaboration between biologists, computer scientists, physicists and clinical researchers.

3. Raise the international visibility of Barcelona as a hub for predictive biology.

4. Train local and international researchers in modelling and theoretical biology.

5. Train computer and physical scientists to the rich diversity of biological questions.

6. Apply modelling to solve some of the most fundamental and recalcitrant problems in biology.

This will be possible, aside from introducing regular courses for PhDs and Postdocs, by launching 3 initiatives: a new FELLOWS PROGRAMME for outstanding junior researchers to support their early independence, a WORKSHOP SERIES with international experts and a vibrant VISITOR PROGRAMME for researchers working on modelling and predictive biology in Spain and internationally.

Key actions

- In the framework of the joint centre with the EMBL on modelling, launch of the new pilot Fellows Programme for outstanding junior researchers to support their early independence.
- Implementation of a Scientific Visitor Programme with visiting fellows and sabbatical visitors.
- Develop a training programme for PhD and Postdocs.
- Organize regular workshops featuring international leaders in predictive biology.

ii. Development and application of **transforming technologies in genomics**, with emphasis in high-throughput and computational approaches (including AI) applied to biomedicine. We contemplate biodiversity genomics as a way to develop large-scale comparative genomics analysis and tools to define functionality, which will be used in the new Medical Genomics Programme.

Understanding complex biological phenomena, benefits from the richness of genomic data obtained from many species. It requires efficient, highly scalable methods to assemble, annotate and compare millions of genomic sequences. The CRG has a long tradition in this area and we will continue developing methods of use in biology and biomedicine.

The specific objectives are:

1. Develop genomic technologies, with emphasis in high-throughput, single cell perturbation assays, lineage tracing single cell epigenomics and epitranscriptomics, spatial transcriptomics technologies, and efficient full length RNA sequencing, among others.

2. Develop computational methods in genomics, with emphasis in AI, machine learning and visualization methods. The CRG has a strong track-record in acquiring large scale genomics data and an equally strong experience in developing large scale classification methods such multiple aligners. The focus will be on large-scale classification with support of renowned international groups (Des Higgins, Ireland; Gascuel, France). An important pioneering aspect of this classification effort will involve the systematic use of predicted structural information.

3. Apply these methods to biomedicine with special emphasis on integrative analyses of multi-layered omics approaches (combination of genomics, epigenomics, transcriptomics), as well as methods integrating data at multiple scales: molecules, cells, tissues, organs, systems, and organisms, to connect the changes in the DNA with the organism phenotypes and pathological features.

4. Promote the transfer of CRG genomics expertise to industry (as we did with the NextFlow software now in use by many companies), and respond to their needs in this area. We will explore with CRG's Technology and Business Development Office (TBDO) in the areas of energy, pharma, new materials, sports, health, and management of biodiversity.

Key actions

- Hiring of a research group using/developing computational approaches to solve a biomedical problem. The group will be part of the medical genomics transversal programme (see below).
- Develop/use quantitative genomics and computational methods by diverse CRG groups.
- Participation in the international genomics projects in diverse fields, such as the Human Cell Atlas, Atlas of Variant Effects Alliance, Earth Biogenome Project, among others.

iii. The development of **quantitative cell biology**, with emphasis on quantitative imaging and quantitative image analysis.

Understanding how the information contained in genomes is deployed to build complex structures, cells, tissues and organisms, and how cells rely information from internal or external cues to the genome to ensure resilience and homeostasis, remain at the core of most problems in biology.

Very recently, the CRG has spearheaded a new initiative to foster collaboration and increase visibility of "Cell And Tissue research in CATalonia", called CATCAT. CATCAT brings together 34 labs from 7 Universities and research Institutes in Barcelona. The groups use interdisciplinary approaches that involve *in vitro* reconstitutions, imaging, synthetic biology, engineering, physics and chemistry.

The objectives of quantitative cell biology within the scope of CATCAT (www.catcat-celltissuebiology.cat) will further develop as a key strategic objective, as follows.

1. Nucleate a critical mass of junior and senior researchers applying quantitative cell biology to understand how molecules function together to control the physical and physiological mechanisms of building a cell and tissues.

2. Promote collaboration between biologists, physicists, chemists, engineers, and clinical researchers.

3. Raise the international visibility of Barcelona as a hub for quantitative cell biology.

4. Train the next generation of scientists in interdisciplinary research.

To achieve these goals, we will organize CATCAT seminars and events to exchange expertise and develop collaborations, and courses to inspire the new generations in cell and tissue biology. The CRG Imaging CF in collaboration with the CRG-EMBL joint Centre and other CATCAT imaging Units will support researchers in developing new quantitative imaging and analysis approaches to push forward this strategic research area. Over the years, CATCAT will also expand to include international labs in the field and similar partnerships in other countries.

Key actions

- Build a strong collaborating community across the labs and institutes participating in CATCAT, and expand the network towards international collaborations.
- Organize training, scientific meetings and lectures on quantitative cell biology.
- Increase the attractiveness of cell and tissue biology groups in Barcelona by joint actions towards attracting new talent (e.g. posters advertising the PhD programmes, courses for Master and undergraduates, etc.).

2. Building on the above initiatives, to create a new transversal Medical Genomics Programme with a focus on quantitative translational research, strengthening collaborations with local and European hospitals, biotech and pharma industry.

One of the major goals of modern medicine is to offer individualized therapies by targeting biological processes that are central to each patient's pathophysiology. European and Spanish directives are indeed prioritizing this challenge.

The CRG wants to play a leading role in this area by leveraging its strength in genomics, modelling and computer methods to create a new transversal Programme on Medical Genomics with a unique angle on disease mechanisms. The transversal nature of this Programme provides flexibility to adapt its composition and alliances, to adopt new approaches or medical questions, maximising the participation of existing Programmes, and facilitating interdisciplinary work.

The Medical Genomics Programme will bring together teams that use genetic and genomic approaches (genome regulation, epigenetics, RNA splicing, epi-transcriptomics, systems biology, genetics, and single cell genomics) with teams developing computational and AI methods to uncover new molecular processes that underlie cancer, common chronic and rare diseases. Its ultimate goal is to establish solid ground to develop innovative therapeutic strategies. It will benefit from a targeted reinforcement of CFs and resources, and partnerships with clinical centres and the pharmaceutical sector. The new Programme represents a major institutional initiative, as it seeks to maintain the core nature of CRG research while creating optimal conditions for disruptive innovations to influence clinical practice.

The Medical Genomics Programme will build on the following pillars:

1. PI recruitment. The new programme will include existing CRG PIs with dual affiliation with existing Programmes. We will hire new PIs, one of them potentially supported by private funding (see below). Other CRG groups could join the Programme upon approval by the new Programme coordinator (Ferrer). For the newly hired PIs, we will prioritize outstanding applications that are most likely to synergise with strengths existing at the CRG.

2. Core resources. The CRG will upgrade its CFs to support this new endeavour. A combined effort between the Genomics, Biomolecular screening, and Tissue Engineering Units will create a platform for integrated chemical and genetic screens with single cell genomic and imaging read outs.

3. Clinical Partnerships. The Programme will foster and expand existing partnerships with clinical centres in Spain and Europe. Each group in the transversal Programme will pair with a clinical group at a local hospital working in the same disease area to maximize the translational potential.

The CRG will deploy several instruments to support these partnerships:

1. We will offer two internal grants per year for research projects that forge CRG-clinical collaborations.

2. We will strengthen the PhD4MD programme to embed medical doctors (MDs) in CRG groups. This successful CRG initiative has now been adopted by the Catalan Health Department. Thanks to a recently awarded COFUND programme, we will support at least 4 CRG fellowships for MDs.

3. Public-private partnerships. The Programme will collaborate with TBDO to facilitate collaborations with the private sector, including active searches to co-fund discovery projects, and to bridge gaps between discoveries and commercialization. The CRG will offer yearly grants to support such processes. Ongoing conversations with companies contemplate a scheme to co-fund a junior PI position.

4. Scientific exchange forums. Members of the new Programme will have weekly presentations to discuss ongoing work. Clinical partners and selected teams from the Barcelona Biomedical Research Park (PRBB) will join as regular participants. In parallel, there will be a cycle of ~8 yearly seminars with national and international speakers from academia, clinical centres and companies to cover common interest areas. Finally, the Programme will organize 2 conferences on specific themes (e.g. Progress and Challenges in Gene Regulatory Therapeutic Strategies).

Key actions

- Create the transversal research Programme. Each group will pair with a clinical group at a local Hospital working in the same disease area to maximize the translational potential.
- Hiring two new PIs, one co-funded by a private company.
- Develop new CRG-clinical collaborations with the support of internal yearly seed grants.
- Embed clinically-trained medical doctors in CRG groups by dedicated fellowships, thanks to the launch of the recently awarded international PhD Programme for medical doctors with other EU-LIFE institutes ("EMERALD").
- Develop new collaborations with the private sector, including co-funded discovery projects and a new group co-funded by CRG and the industrial partner.
- Develop a new programme for scientific exchange: yearly seminars and conferences to cover disease and translational research areas of common interest.
- Deployment of the ELIXIR EGA Beacon Network over the world to discover genomic information related to health.

B. STRATEGIC AREAS

To sustain and complement the scientific and technological priorities, we will develop novel initiatives in six strategic areas.

1. Technology infrastructure and development

The CRG Core Facilities (CFs) are key for the implementation of the new research lines. We will reinforce specific units and develop new technologies and services.

GENOMICS AND BIOINFORMATICS. The Medical Genomics Programme and new initiatives in applied genomics (e.g. biodiversity, etc.) will strongly rely on the sequencing and analysis capacities of the Genomics and Bioinformatics Units. The two CFs will participate in large European and worldwide initiatives (e.g. GA4GH, Earth Biogenome Project – EBP, etc.) that can position the CRG at the leading edge in genomics technologies. The Genomics CF will hire a high-level Genomics Head who will foster implementation of new genomic technologies in areas such as spatial transcriptomics, multi-omics, and clinical single molecule sequencing.

PROTEOMICS. Proteomics techniques emerge as a key tool for both the diagnosis and the understanding of the underlying mechanisms of diseases, in line with the new quantitative biology theme. We will develop clinical proteomics with the hospital and clinical research centres with whom we signed a collaboration agreement to buy a new state-of-the-art mass spectrometer (to install in 2021). We will obtain the ISO9001 certification for sample and data management related to clinical cohorts.

TISSUE ENGINEERING. The Tissue Engineering CF will develop genetically engineered stem-cell organoids to model liver (with Vernos lab), pancreas (with Ferrer lab), brain (with Dierssen lab) and lung diseases (with Serrano lab), as well as eye cups (with Serrano, Irimia and Cosma labs), partly through a recently awarded Institute Carlos III grant.

LIGHT MICROSCOPY AND IMAGE ANALYSIS. After the recent departure of Timo Zimmerman to become head of imaging at EMBL, we hired Nadia Halidi (University of Oxford) as new head. She will foster developments and organize workshops on quantitative image analysis (including AI), also in collaboration with CATCAT groups, and on modelling applied to cell biology processes, in collaboration with Surrey and the new joint modelling Centre with the EMBL.

CHEMICAL AND GENETIC SCREENS. Based on previous experience with high-throughput screens at the CRG, and through incorporation of a new Operetta high content screening platform, we will refurbish our screening Unit and integrate it with single cell genomics and imaging read outs in a combined effort involving the Biomolecular screening, Tissue Engineering, Genomics and Microscopy CFs.

COLLABORATIONS WITH INDUSTRY. CFs have already explored collaborations with industry, including for example the production of COVID-19 proteins for a Spanish company, or training on genomic data management. We will reach out to the associations of biotech and pharma companies in Spain to raise awareness of our technologies and services, and we will perform an in-depth analysis of opportunities to develop joint proposals between CRG groups, CFs and industry for the European Innovation Council in Horizon Europe and other funding programmes.

Key actions

- GENOMICS AND BIOINFORMATICS. Development/application of new genomic technologies and analysis in areas such as spatial transcriptomics, multi-omics, and clinical single cell sequencing.
- PROTEOMICS. Development of clinical proteomics in collaboration with hospitals and clinical experts.
- TISSUE ENGINEERING. Development of genetically engineered organoids to model liver, pancreas, brain and lung disease, eye cups and other organs.
- LIGHT MICROSCOPY. Development of quantitative imaging and quantitative image analysis, through internal synergies and other collaborations.
- CHEMICAL AND GENETIC SCREENS. Development of an integrated platform, combining high-content screening with single cell genomics and imaging read-outs.
- Development of new innovation-driven projects across all CFs, in collaboration with industry, with a specific focus on industry in Spain. We will elaborate marketing material to raise awareness of CRG CFs and their state-of-the-art services among Spanish companies.

2. Innovation

The CRG will develop new initiatives to ensure that CRG results, new knowledge and technologies can contribute to the economic growth of our society.

INTELLECTUAL PROPERTY (IP) MANAGEMENT AND ENTREPRENEURSHIP

In the last years, TBDO achieved significant progress, translated in 4 spin-offs in the last 4 years. We aim to expand the scope of CRG innovation initiatives.

i. Update the CRG IP policy under the principles of clarity, simplicity and agility to incentivize innovation.

ii. Technology scouting. TBDO will follow prioritized projects (3-6/year), incorporating the support of external business mentors (1/project) to capture value and chaperone links with investors and industry. We are hiring the first mentor to support a new spin-off by Serrano lab.

iii. Launch 2 new spin-offs in the next 3 years based on existing technologies and set the basis for 2 more.

iv. Support to mature technologies. In addition to the CRG valorisation fund and access to dedicated labs (currently 2 used by Microomics and Pulmobiotics), TBDO will seek access to technological capacities for drug/therapy discovery and collaborations with industry. We have first contacts with LifeArc and the Kaertor Foundation, and we are collaborating with the National Cancer Research Centre. Some pharma have expressed interest to apply for funding with CRG PIs (e.g. Di Croce, Gebauer) on areas of common interest.

v. Technology marketing and licensing. We will do a catalogue of CRG's research and technologies for industry and investors. We will explore marketplaces (e.g Flintbox, Phamalicensing) and participate in pitching events (e.g. BIOCAT, EU-LIFE). Based on the success of the CRG FoldX (foldxsuite.crg.eu/)

software and new developments (ModelX), we expect to sign at least 8 license agreements in the next 4 years.

vi. Education. We will strengthen technology transfer skills in the curriculum of CRG researchers by introducing new lectures by CRG entrepreneurs and TBDO. We will foster visibility and recognition of CRG entrepreneurs in the CRG website and media.

vii. Innovation networks. We will organize 2 workshops on ENTREPRENEURSHIP (2022, 2024), inviting world-leading science entrepreneurs and local stakeholders (e.g. industry, policy makers) to discuss the relevance of science in innovation.

vii. We will strengthen collaboration with other technology transfer offices - TTOs (e.g. SOMMa and EU-LIFE centres) to share good practices and join forces for ambitious projects, e.g. access to seed funding. We will organize a first meeting with TTOs of the Spanish ecosystem.

Key actions

- Develop partnerships with pharmaceutical companies to support joint projects and groups in the new Medical Genomics Programme, working in research areas of common interest.
- Create a minimum of 2 new spin-offs based on the CRG portfolio of mature projects.
- Develop a mentoring programme with entrepreneurs and business leaders to provide mentorship to CRG scientists engaged in innovation projects.
- Strengthen technology transfer skills in the curriculum of CRG junior researchers by introducing new inspiring lectures by entrepreneurs and new courses.
- Organize 2 workshops on entrepreneurship to discuss with multiple actors the issues around company creation in Spain, and the opportunities to stimulate knowledge-based innovation.
- Networking with other technology transfer offices - TTOs (e.g. SOMMa and EU-LIFE centres) and first meeting with TTOs of the Spanish ecosystem.

3. The new science leaders

One of the key goals of the CRG is to attract and nurture talent, through a rich portfolio of academic and training programmes, and career development activities.

TRAINING

The CRG offers a comprehensive training programme (www.crg.eu/en/content/training) for Master and PhD students, Postdocs and technicians, including international and internal courses on science and technology, open and responsible research, technology transfer, and transferable skills.

We will reinforce existing courses and launch new activities:

i. ONLINE COURSES

We will further develop online courses, open to the Spanish and international research community (e.g. SOMMa, EU-LIFE institutes), piloting new methods to introduce virtual spaces and increase learning.

ii. PROBLEM-BASED LEARNING / CRITICAL THINKING

In 2020, we piloted an online PhD course for 1st year PhD students with innovative problem based-learning and modules on critical thinking, which we plan to extend and diversify to Postdocs.

iii. QUANTITATIVE BIOLOGY AND MODELLING

We will leverage on the joint Centre with the EMBL-Barcelona, to include new international courses (Courses@CRG, EMBO – at least 2/year) on digital technologies, such as AI and modelling. We will also jointly organize them with other centres, as the Gulbenkian Institute in Portugal (ongoing collaboration on training).

iv. INNOVATION

Building on the success of the previous Bio-business schools, we will offer short interactive workshops on innovation, patents, IP and spin-off creation twice per year for PhDs and Postdocs.

v. OPEN AND RESPONSIBLE RESEARCH

Since 2017, all new researchers enrol in a certified ethics course. We will develop an internal online-customized course specific to the institute internal policies on research integrity, ethics, and good scientific practice.

vi. TRANSFERABLE SKILLS

We will run a new course on research collaboration and strengthen that on project management, to offer them to the local and international community. In collaboration with the Women for Africa Foundation, we will develop a new open course on leadership for African women researchers.

vii. TRAIN THE TRAINERS

We will implement a "train the trainers" programme, complemented with an interactive online course on the CRG Moodle platform, to equip a higher number of CRG researchers with the competencies to conduct engaging courses.

viii. HANDS-ON NEW OPPORTUNITIES

We will continue the hands-on internship programme for PhDs, Postdocs or technicians at ISA, Communications, Grants, HR and/or TBDO teams, to empower them with additional career skills.

TALENT ATTRACTION AND ACADEMIC PROGRAMMES

The CRG has been very successful in attracting top international PIs (calls in the past 4 years attracted >100 applications per position: around 30% were outstanding and >2/3 non-Spanish). Currently, >60% PIs are non-Spanish and 22 PIs have or have had ERC grants. Similarly, we attract PhDs and Postdoc fellows from all over the world (60% foreigners, >40 nationalities through the years).

Taking advantage of the joint Centre with the EMBL, as well as of the CATCAT initiative for cell and tissue biology, we will organize posters and campaigns to advertise jointly specific international calls with EMBL (modelling) and other institutes (cell/tissue biology) to attract top national and international PhD students to Barcelona and the CRG.

In the next Strategic Plan, we will foster new academic activities.

i. MASTER INTERNSHIP PROGRAMME, to prepare talented Master students for competitive doctoral programmes with an integrated training programme (at least 25 students in the next 4 years).

ii. PhD PROGRAMME. In synergy with the Medical Genomics programme, we will strengthen collaborations with clinicians bringing motivated medical doctors to do their thesis at CRG. We have very recently obtained a new COFUND European Doctoral Programme for MDs in collaboration with other EU-LIFE institutes and >30 associated partners, including research centres, patient associations, pharma and small companies.

Following an agreement with the Guangzhou Regenerative Medicine and Health Guangdong Laboratory (GDL) in China, we will run annual calls of the CRG–GDL International PhD Programme (www.crg.eu/en/content/training-phd-students/crg-gdl-international-phd-fellowship-programme).

We will explore proactively the Industrial Doctorate scheme in Spain and Europe to foster new interactions with industry (our SO aim, 4 joint PhD students).

iii. POSTDOCTORAL PROGRAMME, We will explore a joint Postdoc programme with China, and we will consider submitting a COFUND Fellowship Proposal for Postdocs.

iv. NEW FELLOWS PROGRAMME. Leveraging the new joint CRG-EMBL Centre, we will launch a new Fellows Programme to provide opportunities for exceptionally qualified junior scientists to develop early on academic leadership and independence. The selected candidates should apply to external funding, such as “la Caixa” Junior Leader Programme, while the CRG will provide space, travel budget and access to CFs and computing. They will participate as Faculty members in the Institute´s activities, and they will be able to ask for independent grants.

v. RETAINING EUROPEAN TALENT. Within the EU-LIFE consortium, we will launch a new programme for Postdocs where talented early researchers will be invited to EU-LIFE institutes to give seminars to avoid brain-drain and keep the best talent in Europe.

CAREER DEVELOPMENT AND MENTORSHIP

We will offer new activities.

i. A PROFESSIONAL DEVELOPMENT PLAN (PDP) is already in place for PhD students, technicians, and administration. We will implement a PDP for Postdocs and staff scientists. They will have yearly interviews with their supervisors, with a focus on professional development, using the PDP as guideline.

ii. We will offer an improved MENTORING programme for Postdocs, with training sessions for mentees and mentors, and regular monitoring and evaluation. We will explore diverse mentoring schemes in collaboration with other international institutes from BIST and EU-LIFE.

iii. We will enrich our portfolio of CAREER-FOCUSED EVENTS: “career talks, days or weeks”, in collaboration with local institutes, and finance hands-on internships in CRG management departments (ISA, TBDO, Grants, HR and Communication). We will explore collaborations with local companies to offer internships to junior researchers. As example, we are establishing a partnership with La Caixa Capital Risk, to offer our researchers internships on venture capital.

iv. We will explore how to support junior CRG PIs leaving after their 5+4 years contract who want to stay in Spain in a research centre or University that does not have core funding.

Key actions

- Develop the portfolio of scientific and technological courses (internal and international), on quantitative biology, including online and engaging formats to broaden the audience.
- Develop scientific and technological courses to address the needs of industries in Spain.
- Develop new courses on innovation as well as on responsible and open research, including training on research data management, sex and gender dimension in research, ethics and research integrity.
- Implement a Master Research Internship Programme to prepare talented students for competitive doctoral programmes.
- Implement the newly awarded H2020 COFUND programme, EMERALD, to incorporate medical doctors as PhD researchers and facilitate clinical collaborations (e.g. new Medical Genomics Programme).
- Run the new joint PhD programme with the Guangzhou Regenerative Medicine and Health Guangdong Laboratory (GDL) in China.
- Incorporate new Postdocs to work on the new CRG strategic research areas, through competitive international calls.
- Pilot a new Fellows Programme in the framework of the CRG-EMBL joint Centre on modelling to support early independence of talented junior researchers.
- Renew mentoring offer to CRG Postdocs and other professional categories.
- Offer hands-on internships in some CRG departments (international collaboration, grants and science communication) to empower researchers with additional career skills.
- Explore how to support CRG PIs leaving after their 5+4 years contracts, and who want to stay in Spain in a Research Institute or University that does not provide core funding.

4. Collaboration

The new Strategic Plan will require new synergies and collaboration with researchers and other stakeholders locally and internationally. Moreover, we want to focus on boosting the attractiveness of Barcelona and Spain for research and innovation.

The CRG has multiple international collaborations. Close to 80% of CRG publications (Web of Science, 2016-20) are in collaborations with international centres and universities (e.g. US, UK, Germany, etc.). The CRG stands as the 5th Spanish research organization in securing H2020 funding, the 1st biomedical research centre for ERC grants and the 4th entity in the Health Societal Challenge (H2020 Dashboard). Many researchers are involved in large international consortia; we coordinated 10 H2020 collaborative projects and run 3 COFUNDs (FP7, H2020) for Postdocs.

For the next Strategic Plan, we will implement new actions to increase the international leadership in the novel strategic research areas.

STRENGHTEN COLLABORATIONS

While we expect to maintain a high level of international collaborations, we will place a strong focus on increasing the international visibility and attractiveness of Barcelona and Spain for research and innovation, which will help to attract top talent and external funding. As part of this new strategy, we started to develop and will strengthen new initiatives.

i. CATCAT, Cell and Tissue research in CATalonia. We aim to grow CATCAT into an international programme to increase participation of labs with complementary research goals. We will organize scientific events and explore collaborations with international institutes, such as the EMBL and the Max Planck Institute of Molecular Cell Biology and Genetics.

ii. The goal of the collaborative Centre for Modelling and Predictive Biology with EMBL is to make Barcelona an international hub for modelling of biological processes, and to become an international "collaboratorium" through visiting scientists, the Fellows Programme and workshops.

iii. We will continue collaborating with the Women for Africa Foundation, hosting sabbaticals and developing leadership training for African women scientists.

iv. An important collaboration has recently started with the Bioland Laboratory, a research centre of the Guangdong province in China, to implement a joint PhD programme to allow PhD students carrying out research between the CRG and collaborating Chinese laboratories. We will develop further the joint PhD programme with regular annual calls, strengthen the scientific collaboration, and explore a joint Postdoc programme.

vi. EGA, now jointly run by the CRG and the EBI, will develop into what we call a "federated EGA" with nodes in the main European countries. The CRG will maintain a leading role in strong collaboration with the new European nodes (Scandinavia, Germany, France, Spain, etc.).

INTERNATIONAL RESEARCH CONSORTIA

The CRG participates, often in leading position, in several large global research consortia. We highlight the most relevant projects for the new strategic areas, for the next 4 years.

- Atlas of Variant Effects Alliance (www.varianteffect.org): one of the most relevant international projects in precision medicine to determine the effects of all possible variants in human and pathogen genomes. Lehner is one of the few researchers in Europe invited to participate in this project.

- Earth Biogenome Project (EBP, www.earthbiogenome.org): a moonshot for biology, the international project aims to sequence, catalogue and characterize the genomes of all Earth's eukaryotic biodiversity. Guigó actively participates through the Catalan Initiative for the EBP (mentioned above), which has already funded the sequencing of 8 Catalan endangered species.

- Encyclopedia of DNA Elements Consortium (ENCODE, www.encodeproject.org): an ongoing international collaboration funded by the National Human Genome Research Institute (NHGRI), to build a comprehensive parts list of functional elements in the human genome. Guigó received funding from NHGRI to participate, and 1 additional proposal is under evaluation to continue GENCODE.

- PDBe-KB (Protein Data Bank in Europe - Knowledge Base, www.ebi.ac.uk/pdbe/pdbe-kb): a community-driven resource, collating functional annotations and predictions for structure data in the PDB archive. It is a collaborative effort between PDBe and a diverse group of bioinformatics resources and research teams, including Serrano lab (FoldX).

- Human Cell Atlas (HCA, www.humancellatlas.org): Guigó participates in the initiative to catalogue all human cells and co-chairs the HCA Ethics Working Group.

- BRAIN Initiative (braininitiative.nih.gov, USA): Dierssen is part of this initiative to revolutionize our understanding of the human brain.

- Global Alliance for Genomics and Health (GA4GH, www.ga4gh.org): few CRG groups and the EGA play a fundamental role in policy framing and technical standard setting, contributing to enable responsible genomic data sharing within a human rights framework.

- 1+ Million Genomes Initiative (1+MG), the commitment of 23 European countries to give cross-border access to 1 million sequenced genomes by 2022. In Spain, the CRG Director and Angel Carracedo are involved in the organization of the Spanish working groups and node. The CRG participates as member of the "Beyond 1 Million Genome" project (B1MG, 2020-23) to create a network of genetic and clinical data across Europe to support 1+MG.

PARTICIPATION IN HORIZON EUROPE

The CRG has an impressive record in obtaining European funding, including ERCs (individual and Synergy) and collaborative projects led by CRG PIs. As an example, in 2020 Malhotra and Surrey obtained two ERC collaborative Synergy Grants, LiquOrg and BIOMECANET, respectively, to push forward radical concepts in cell biology.

The CRG has recently obtained a 2-year grant from the Spanish "Europa Redes" programme, to incentivize its leadership and diversify its positioning across the pillars in the upcoming Horizon Europe (HE) and the different European Partnerships. We will foster new initiatives:

i. Match-making events with multiple stakeholders to explore collaborations targeting specific HE calls.

ii. Scouting new collaboration with industry to apply to calls oriented to exploitation. We have already started interviews with CRG PIs to brainstorm about potential industrial partnerships, and we will organize "Idea labs" events to develop innovation-driven HE proposals.

iii. Dedicated support to increase the impact of proposals and funded projects, with a focus on dissemination and communication plans, and compliance with HE Open Science policies.

iv. Reinforce our collaboration with EU-LIFE, BIST and SOMMa institutes to identify potential joint proposals.

Thanks to this new project, the excellence and the increasing interest in innovation of CRG groups, and the dedicated professional teams (Grants and ISA) to support the participation and leadership of CRG PIs, we expect a high return from HE with a high number of CRG-led proposals (e.g. ERCs, H2020 coordinated projects).

PARTICIPATION IN THE EUROPEAN RESEARCH AREA (ERA)

The European Commission has recently released the communication on the new ERA with four priorities: investments and reform in research and innovation, mobility of researchers, open science and boosting market uptake. The CRG Strategy Plan aligns with these objectives and aims to contribute to the ERA at policy and implementation level.

Regarding policy, we will collaborate with EU-LIFE and SOMMa. With EU-LIFE (www.eu-life.eu), the CRG will actively contribute to open science, research assessment, career development and mobility, gender and diversity in research (e.g. position papers, EU-LIFE webinars), and the new ERA Forum. We will promote ERA international visibility as a single voice. With SOMMa (www.somma.es), the CRG will continue pushing the Spanish government to increase national research funding and implement reforms to reduce bureaucracy. The head of ISA is currently representing SOMMa in the committee to develop a Spanish strategy for Open Science.

Regarding implementation, we will target calls from the new European Partnerships for Health, and COFUND schemes (we have just been awarded the new COFUND for medical doctors; we will apply

to a new one for Postdocs) to further boost European cooperation and mobility across countries, disciplines and sectors.

As mentioned previously, a CRG central goal is to train the next generation of researchers, with a commitment to transparency, equality, diversity and inclusion. The institute was one of the first signing the European Charter and Code and obtaining the HR Excellence Award, and has implemented already 3 HRS4R Action Plans. After the evaluation of the ongoing plan, we will apply for renewal with new priorities.

CRG HRS4R Action Plan (2019-21):

www.crg.eu/sites/default/files/crg/crg_hrs4r_action_plan_2019-2021_web_0.pdf.

PARTICIPATION IN SCIENTIFIC SOCIETES

The CRG was founder of new associations at European (EU-LIFE, www.eu-life.eu) and Spanish levels (SOMMa, www.somma.es), to foster excellent science, influence science policy and exchange knowledge and good practices. The CRG director was the first chair of EU-LIFE (2014-15), and afterwards of SOMMa (2018-20). The CRG was also founding member of Core for life (www.coreforlife.eu), an international alliance of institutes coordinating and bundling CF expertise and resources in Europe. The CRG will continue playing a critical role in the three alliances. CRG members from faculty and administration are also actively involved in the working groups, often in leadership positions.

Finally, several CRG PIs are members of diverse scientific society, a few with relevant roles to contribute to push further the ambition and impact of these organizations (e.g. EMBO, Trisomy 21, FEBS, Catalan Society of Biology, EuroStemCell).

Key actions

- Launch the joint CRG-EMBL Centre on modelling and predictive biology to make it a vibrant European hub for modelling of biological processes, facilitating new collaborations through the Fellows and Visiting Scientist Programmes and workshops.
- Strengthen the recently born alliance on “Cell And Tissue research in CATalonia”, CATCAT, by organizing joint seminars, lectures and courses and engaging junior researchers to take an active role across the multiple activities.
- Strengthen the collaboration with Bioland Laboratory, a research centre of the Guangdong province in China, to implement a long-term joint PhD programme to allow PhD students carrying out collaborative research between the CRG and Chinese research laboratories.
- Participate in international collaborative projects (e.g. Atlas of Variant Effects Alliance, ENCODE, Human Cell Atlas, 1+ Million Genomes Initiative, etc.) and lead new ones focusing on the novel strategic research and technology areas.

5. Open and responsible research

Openness and responsibility are core values of CRG research and embrace a broad portfolio of actions to promote equality, diversity and inclusion (EDI), open access to publications and results, science communication, education and outreach to multiple stakeholders.

EQUALITY, DIVERSITY AND INCLUSION

In 2020, the CRG endorsed the Equality, Diversity and Inclusion (EDI, 2020-2023) Plan (www.crg.eu/sites/default/files/crg/crg_edi_plan_en.pdf). We will expand our aims to offer a solid EDI environment to all employees.

We will promote women in positions of leadership. Currently we are close to 50% junior PIs women but no Programme Coordinators. By the end of the 4 years, we aim to have at least 25% women Programme Coordinators and at least 30% in the governing Boards.

We highlight new additional actions.

i. Campaigns to raise awareness about the relevance of gender balance with a new focus on diversity (e.g. “My life in Science” webinar series).

ii. A new Leadership Programme for women scientists, built on the successful pilot within the LIBRA project, and organized together with other EU-LIFE centres.

iii. Monitoring gender-based indicators in publications to detect and improve potential biases.

iv. Monitoring and mechanisms to ensure equal pay for equal jobs.

v. New guidelines and training on how to include the dimensions of sex and gender in research. The guidelines will be a co-creation exercise, engaging the CRG scientific community, followed by broad dissemination, including specific case studies and talks. Regarding training, we piloted a new course for 1st year PhD students that we want to repeat, and eventually extend to other professional categories. We will complement this course with online training through our Moodle platform, and we will organize a train-the-trainer session so that several CRG researchers can deliver the training.

vi. Implementing a new protocol (including training) for prevention and approach to sexual or gender-based harassment.

vii. Training on diversity (sex and gender, but also ethnicity, nationality, sexuality, disabilities, other minorities, etc.) and inclusion of this broad diversity perspective in recruitment.

OPEN SCIENCE

In the next 4 years, we will continue fostering open and responsible research as relevant strategic goal with a strong focus on Open Access to scholarly publications and Open and FAIR research data management. Our priorities will be the following.

OPEN ACCESS

i. Consolidate our open access policy that has already resulted in >80% publications accessible to the community (2019 data). We aim to reach 90% at the end of the SO Award.

ii. Focus on community engagement to share “good” and “new” practices in life sciences publishing, e.g. the PCI (Peer Community In; peercommunityin.org) initiative, in which a few CRG PIs participate.

OPEN FAIR DATA

i. Put in place a new policy on research data management, to ensure data protection as well as broad access and re-usability by the community.

ii. Develop new courses to support our researchers to comply with the European policy on FAIR and Open data. In all these efforts, we will collaborate with other EU-LIFE institutes and will participate as observer in the European Open Science Cloud Association.

iii. Streamline internal processes of compliance on management of personal data, as related ethics requirements are increasing in public-funded projects because of the EU-wide General Data Protection Regulation.

RESEARCH INTEGRITY

Within the PRBB-CRG scientific seminar series, we will introduce one seminar/year on bioethics to trigger debate among the CRG community on the latest ethical dilemmas, as those revolving around AI or genome editing. We will develop a new mandatory online course on research integrity and ethics for new comers. Further, we will continue embedding a participatory session to discuss research integrity and ethics with 1st year PhD students, and we will develop short modules as a plug-in to be integrated in science and technology courses.

ii. WELL-BEING. We aim to make a qualitative jump in promoting well-being in our community, to help them to feel motivated towards their work and professional future, in a supportive and constructive working environment. We are currently discussing different options to offer external professional psychological help to CRG members.

iii. MENTORING. We will establish additional mentoring schemes for various communities, starting by PhD students through a novel peer-mentoring programme that complements the mentoring provided through PhD advisors, Thesis Committees and Academic Office. The programme will be extended to other communities, including Postdocs, technicians, junior PIs and administration staff.

SCIENCE COMMUNICATION, ENGAGEMENT AND CITIZEN SCIENCE

We will promote two main strategic goals with specific activities.

1) Consolidate the CRG's brand as an international biomedical research institute of prestige, promoting cutting-edge quantitative biology and other strategic activities.

a. Create a comprehensive digital communication strategy (2021-24), including the renewal of CRG website.

b. Reach newer, younger audiences including those who do not think, "Science is for us", through native digital platforms (e.g. Twitter, Facebook), creating new compelling content (audio-visual) and storytelling.

c. Promote the value of basic research by proactive engagement with national and international journalists.

d. Launch a new scientific CRG Annual Symposium series gathering alumni, industry, policy-makers and other stakeholders, to boost scientific collaborations and innovation.

f. Offer training in communication skills to CRG researchers, empowering them to use digital channels.

2) Place science at the heart of ongoing public debates by re-designing our portfolio of public engagement, citizen science and science education activities, using innovative engagement methods grounded on the principles of Open Science and the success of our ORION project.

a. Launch and manage the new citizen science project Genigma (Martí-Renom group): a game app contributing to cancer research.

b. Develop new actions to ground citizen science at the CRG (workshops, webinar, guidelines, policies, etc.) by participating in the new H2020 project TIME4CS (Supporting Sustainable Institutional Changes to Promote Citizen Science in Science and Technology).

c. Organize new public dialogues where citizens can directly debate with our researchers ethical and societal aspects of new CRG strategic research areas (e.g. AI, medical genomics).

d. Synergize with national initiatives, such as "Science in the Parliament".

Key actions

- Implement a new EDI plan, including actions to prevent harassment and bullying, monitoring gender in publications, a new Women Leadership Programme to empower women scientists in advancing their career and developing training on diversity.
- Increase the participation of women in the CRG governance.
- Organize new seminars and courses on bioethics adapted to CRG research and context.
- Boost Open Access of publications to 90% by 2024.
- Implement a new policy, guidelines and training for FAIR Research Data Management.
- Consolidate the CRG's brand as a biomedical research institute of international prestige, through a new digital communication strategy, renewing the CRG website and creating new engaging contents and storytelling.
- Launch of the Genigma app to engage citizens in cancer research and new actions to ground citizen science approaches in more CRG research projects.
- Organize new public dialogues where citizens can debate ethical and societal aspects of new strategic research areas (e.g. AI, Medical Genomics, etc.) directly with CRG researchers.

6. Sustainability

We want to implement new initiatives to reduce the CRG's environmental impact, favouring a safer working environment. We will develop active communication campaigns, towards improved energy saving and sustainability practices, while identifying and engaging "lab eco-representatives" and implement new policies and procedures on energy, waste and travelling. We will produce a Sustainability Handbook, and develop and make mandatory Sustainability training for all CRG staff.

Key actions

- Launch awareness campaigns and seminars to raise sensibility about environmental issues.
- Develop a Sustainability Handbook with good practice and clear guidelines (e.g. measures for the responsible use of equipment and for minimizing waste and energy consumption), and provide Sustainability training for all researchers, staff and newcomers.
- Implement new measures for the responsible use of equipment and for minimizing waste and energy consumption.
- Incorporate a financial sustainability plan in the risk management plans of the Institute (see below). We will monitor the risks of not obtaining sufficient funding to deliver the strategy and elaborate the corresponding contingency plans. Such plans shall explore diverse funding opportunities from the public and private sector.

C. GOVERNANCE AND MANAGEMENT

The CRG has kept the same management structure for the past 20 years with an Executive Board where all managerial and scientific matters are discussed. With time, due to the growth of the institute and the increase in legal and administrative issues, there is the collective perception of reduced time for scientific discussions at Executive Board meetings and their follow up. Moreover, the committee is not gender balanced, as the Director, Coordinators of research Programmes are men.

To improve the CRG governance, gender equality, diversity and inclusion, and have a body dedicated to scientific strategy and hiring, we will divide the tasks of the Executive Board in two separate Boards, including women senior scientists in both, and nominating at least one woman as Programme Coordinator.

i. Direction Board (former Executive Board), to coordinate the management activities, budget, human resources polices, space refurbishment, logistics, and execution of the overall strategic plan (e.g. alliances with other institutions).

ii. Scientific Board, to discuss, coordinate and deliver the institute's scientific strategy, including new recruitment of PIs and heads of CFs.

Both boards will meet twice a year for joint discussions.

Regarding the SAB, up to now it was composed of two members linked thematically to the research of each Programme, two for CNAG-CRG and a Chairperson. The SAB meets in full once every 4-5 years to evaluate the Institute and the Director. Only the Chair of the SAB is present in the evaluations of the Programmes, administration and CFs, as well as in the hiring committees for new PIs. We will change the SAB mission and structure, making it smaller, composed of 4-5 scientists with broad scientific expertise, extensive experience in the management of research Institutes, including one member with experience in technology transfer. The SAB will visit the institute once a year with an advisory role. They will receive the yearly evaluation reports by international panels about the research Programmes, administration and CFs, and based on those elaborate, working closely with CRG direction, a joint report for the Board of Trustees. One member of the SAB will be present in evaluation panels, to ensure uniformity of criteria in the evaluations.

Key actions

- Implement the new CRG governance through the creation of two Boards, while increasing gender balance and diversity, including women senior scientists in both.
- Re-organize the SAB, implement annual advisory meetings and establish follow-up mechanisms for SAB feedback and reviews.
- Further, engage with SOMMa and other stakeholders to ensure an adequate regulatory framework for science at the national and regional level.
- Improve efficiency in operations (i.e. digitalisation, teleworking, lean management principles and Key Performance Indicators).
- Design competitive operations metrics for benchmarking in future external evaluations of the Administration and incorporate recommendations from the past evaluation (2019). Recommendations range from specific improvements in each department to general feedback across departments (e.g. enhanced collaboration among the teams, streamlined processes and tools, improved recognition and appreciation of the Administration staff).
- Promote good practise sharing and community building (EU-LIFE, SOMMa, BIST, CERCA), and in particular, launch a pilot Admin Staff Exchange Programme that enables CRG staff with less opportunities for good practise exchange to visit other institutes for a few weeks.
- Develop a risk management map to provide effective response to global threats that can compromise research and operations (strategic, financial, physical risks and compliance).

D. EXPECTED SCIENTIFIC, ECONOMIC AND SOCIAL IMPACT

We will devote significant efforts to collaborate with the productive and social environment and with other research and innovation centers, to increase the social and economic impact of science in Spain and internationally. As highlighted above, we contemplate **several actions**.

- Promote new collaborations with Spanish biotech and pharma companies, scouting for joint projects, developing training on CRG technologies, and facilitating access to CRG services.
- Collaborate with clinicians and local Hospitals on biomedical research projects leading to new possible therapies to diseases.
- Launch public dialogue initiatives to discuss the societal/ethical aspects of science with citizens, and show them the importance of science for our society.

Impact on Science

- Conceptualization of biological problems in quantitative terms, increased ability to predict and engineer living organisms
- New quantitative methods and technologies to tackle biological and medical problems
- New interdisciplinary collaborations with Spanish and international centres and Universities

Impact on Economy

- New collaborations with the private sectors leading to joint projects, grants and research groups to drive innovation and technology development
- New collaborations among CRG groups and CFs with Spanish industry
- Higher entrepreneurship spirit among researchers to create new spin-offs and jobs

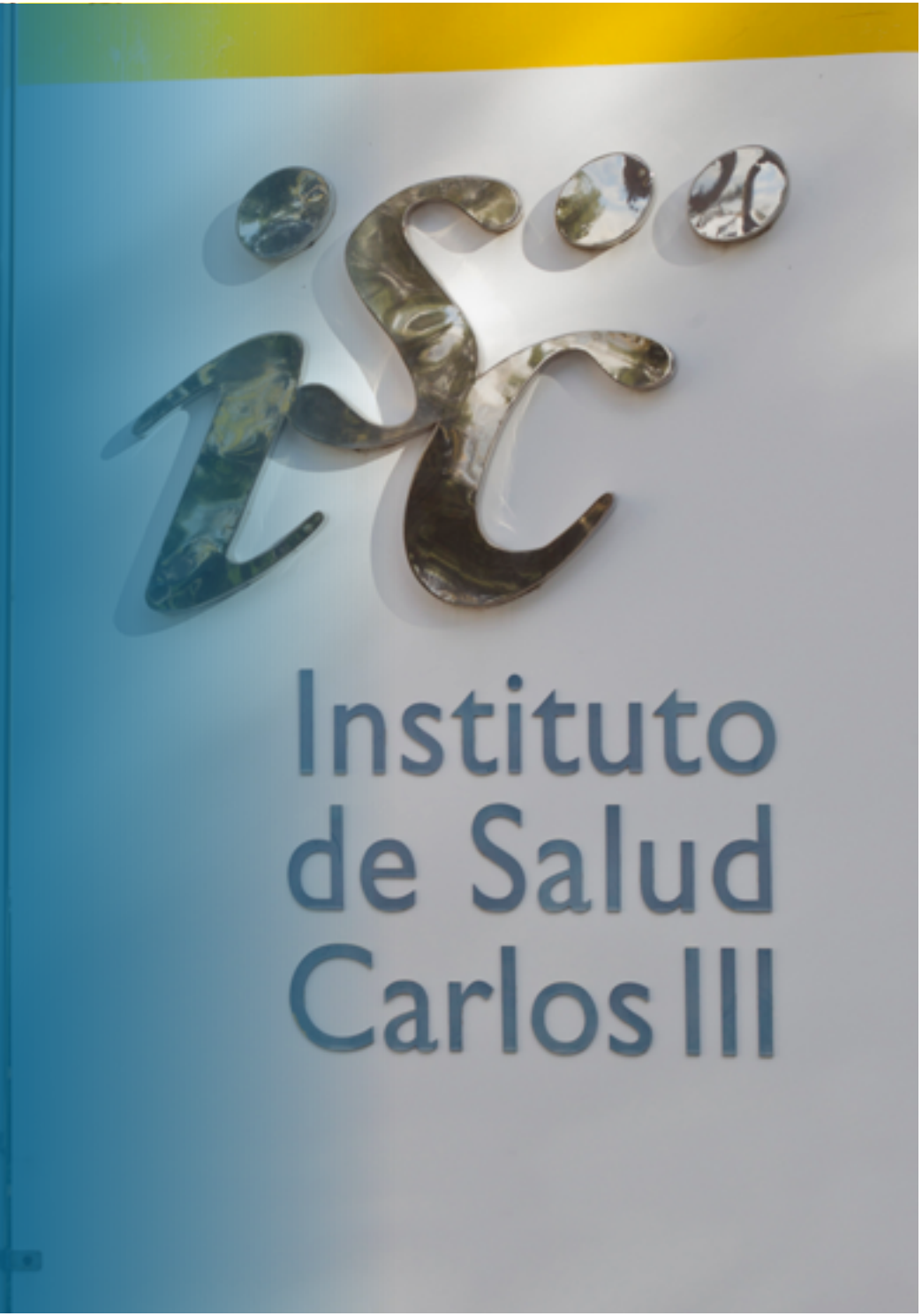
Impact on Society

- New knowledge and tools to drive forward personalized medicine
- Contribution to the Sustainable Development Goals (e.g. good health and wellbeing, gender equality, industry, innovation and infrastructure)
- Promoting fundamental values such as equality, diversity and inclusion
- Contribute to a science-educated society.

Overall, the new ambitious CRG Strategic Plan aims for multiple impacts on science, economy and society, with a strong focus on the Spanish ecosystem, while continuing the international ambition and projection of the CRG.

GOBIERNO DE ESPAÑA
MINISTERIO DE CIENCIA E INNOVACIÓN
Instituto de Salud Carlos III

Plan Estratégico 2021-2025



Índice

Abreviaturas utilizadas en el documento

A

ACI: Area de Coordinación de la Investigación
AEI: Agencia Estatal de Investigación
AEMPS: Agencia Española de Medicamentos y Productos Sanitarios
AETS: Agencia de Evaluación de Tecnologías Sanitarias
AES: Acción Estratégica en Salud
AESI: Acción Estratégica en Salud Intramural
AGE: Administración General del Estado

B

BNCS: Biblioteca Nacional de Ciencias de la Salud

C

CAD: Comité Asesor de la Dirección del ISCIII
CCAA: Comunidades Autónomas
CCAEDI: Comité Científico Asesor Extramural para la Docencia y la Investigación Intramural del ISCIII
CCISCIII: Claustro Científico del ISCIII
CDTI: Centro para el Desarrollo Tecnológico Industrial
CIBER: Centro de Investigación Biomédica en Red
CNE: Centro Nacional de Epidemiología
CNIC: Centro Nacional de Investigaciones Cardiovasculares
CNIO: Centro Nacional de Investigaciones Oncológicas
CNM: Centro Nacional de Microbiología
CNMT: Centro Nacional de Medicina Tropical
CNSA: Centro Nacional de Sanidad Ambiental
COVID-19: Enfermedad por Coronavirus 2019, SARS-CoV-2

D

DAFO: Debilidades, Amenazas, Fortalezas, Oportunidades

E

ECDC: Centro Europeo para el Control y Prevención de Enfermedades
EJE: Ejes Estratégicos
EJP: Programas Europeos Conjuntos (European Joint Programmes)
ENS: Escuela Nacional de Sanidad
ENMT: Escuela Nacional de Medicina del Trabajo
ERANET: Redes Europeas de Area de Investigación (European Research Area Networks)

F

FECYT: Fundacion Española para la Ciencia y la Tecnología
FEDER: Fondo Europeo de Desarrollo Regional
FIISCIII: Foro Estable de Participación Conjunta IIS-ISCIII
FSE: Fondo Social Europeo

I

IBECS: Índice Bibliográfico Español en Ciencias de la Salud
IFMS: Sistema Integrado de Gestión Financiera (Integrated Financial Management System)
IGAE: Intervención General de la Administración del Estado
IIER: Instituto de Investigación en Enfermedades Raras
IIS: Institutos de Investigación Sanitaria
INVESTEN: Unidad de Investigación en Cuidados en Salud
IMIENS: Instituto Mixto de Investigación ENS-UNED
ISCIII: Instituto de Salud Carlos III
I+D+i: Investigación, Desarrollo e Innovación

J

JPI: Iniciativas de Programacion Conjunta (Joint Programming Iniatitives)

L

LCSP: Ley de Contratos del Sector Público
LET: Lineas Estratégicas Transversales

M

MCI: Ministerio de Ciencia e Innovación
MS: Ministerio de Sanidad

N

NEDAES: Nómina Estándar Descentralizada de la Adminitración del Estado

O

ODS: Objetivos de Desarrollo Sostenible
OE: Objetivos Estratégicos
OEP : Oferta Empleo Publico
OMS: Organización Mundial de la Salud
ONA: Oficina Nacional de Auditoria
OTC: Oficina de Transferencia de Conocimiento
OTRI: Oficina de Transferencia de Resultados de la Investigación

P

PEISCIII: Plan Estratégico del ISCIII
PIB: Producto Interior Bruto

R

RECOLECTA: Recolector de Ciencia Abierta
RedETS: Red Española de Agencias de Evaluación de Tecnologías Sanitarias
REPISALUD: Repositorio Institucional en Salud
RETICs: Redes Temáticas de Investigación Cooperativa en Salud
RPT: Relación de Puestos de Trabajo
RRHH: Recursos Humanos
RRI: Investigación e Innovación Responsables (Responsible Research and Innovation)

S

SAU: Servicio de Atención al Usuario
SGPIIRI: Subdirección General de Programas Internacionales de Investigación y Relaciones Institucionales
SIC: Sistema de Información Contable
SIVIES: Sistema para la Vigilancia en España
SNS: Sistema Nacional de Salud

T

TFM: Trabajo Fin de Máster
TICs: Tecnologías de la Información y la Comunicación
TRL: Grado de Madurez Tecnológica (Technological Readiness Level)

U

UE: Unión Europea
UFIEC: Unidad Funcional de Investigación en Enfermedades Crónicas
UITeS: Unidad de Investigación en Salud Digital
UNED: Universidad Nacional de Educación a Distancia
UTIC: Unidad de Tecnologias de la Información y Comunicación

1.

Introducción

1.1. Justificación y Oportunidad

El Plan Estratégico 2021-2025 del Instituto de Salud Carlos III (en adelante ISCIII) se presenta como una oportunidad para seguir mejorando la eficiencia y solvencia del organismo, y de abordar los nuevos retos para mejorar la salud de la ciudadanía y luchar contra las enfermedades. Este **Plan Estratégico 2021-2025 (PEISCIII)** pretende impulsar la mejora del servicio que el ISCIII presta a la sociedad, garantizando, desde una perspectiva de responsabilidad pública, la misión que tiene encomendada.

Hasta la fecha de aprobación del PEISCIII, la actividad del organismo se ha regido por planes de actuación anuales aprobados por el Consejo Rector. En una organización con gran complejidad funcional como es el ISCIII, el PEISCIII surge como una herramienta de gestión que ayudará a tomar decisiones sobre la **priorización de los objetivos, problemas y necesidades**, así como a seleccionar las intervenciones que se prevén más eficaces. Por otro lado, la rápida evolución y transformación en el ámbito de la ciencia y de la salud, unidas a las singularidades y necesidades específicas del sector sanitario, requieren de una planificación estratégica adecuada y sostenida en el tiempo, que permita que la organización mantenga su actual posición de liderazgo en salud pública y en la financiación de la investigación biomédica, y que **estas capacidades se incrementen cuando se vayan cumpliendo los objetivos estratégicos** que recoge el PEISCIII.

Para ello es imprescindible disponer de **una estrategia global**, que contemple las líneas de actuación en torno a las cuales girará la **actividad de la organización en los próximos años**, y defina los objetivos a alcanzar durante el período de vigencia. Además, el PEISCIII se ha elaborado para dar cumplimiento al requerimiento legal contemplado en el artículo 85 de la Ley 40/2015, de 1 de octubre, de Régimen Jurídico del Sector Público, sobre control de eficacia y supervisión de las entidades integrantes del sector público.

La primera versión de este plan fue elaborada en 2019 con la intención de ser aplicado en el quinquenio 2020-2024. La **pandemia por COVID-19** ha retrasado su implantación y desarrollo, modificando algunos de sus objetivos para adaptarlos a la situación creada por la pandemia. El Instituto de Salud Carlos III ha desarrollado una intensa labor en la lucha contra la COVID-19 desde el inicio de la pandemia, focalizando en esta tarea gran parte de los esfuerzos de la organización. A lo largo de los últimos meses el papel de la investigación en salud, y la necesidad de disponer de sólidas estructuras científico-técnicas para dar soporte a las decisiones de salud pública han cobrado una **relevancia social sin precedentes.**

En particular, se ha focalizado la atención en la investigación en enfermedades infecciosas, un área de conocimiento en la que el ISCIII es referencia. Aunque durante la segunda mitad del siglo xx se pensó que las enfermedades infecciosas estaban cerca de su erradicación, la aparición del SIDA y de las infecciones oportunistas, el desarrollo de resistencias antimicrobianas, la emergencia y re-emergencia de infecciones, y el aumento de las enfermedades infecciosas importadas, asociadas al fenómeno de la globalización, ya habían modificado completamente nuestros conceptos. La pandemia por COVID-19 ha demostrado que las enfermedades **infecciosas** siguen siendo una de las **principales amenazas** para el ser humano. El PEISCIII no sólo recoge el papel fundamental de la **investigación para el control de la pandemia por COVID-19**, promoviendo programas multidisciplinares basados en la innovación en técnicas diagnósticas, los nuevos tratamientos y el desarrollo de los sistemas de vigilancia y control, sino que y además, incluye la necesidad estratégica de reforzar las capacidades del organismo para hacer frente a la lucha contra las **enfermedades infecciosas y otras amenazas globales** contra la salud humana.

EL PEISCIII se ha elaborado de forma armónica con las líneas de acción de la **Estrategia Española de Ciencia, Tecnología e Innovación 2021-2027** y del Programa Marco Europeo de Investigación e Innovación, **Horizonte Europa 2021-2027**. Además, incorpora acciones vinculadas al Plan de Choque para la Ciencia presentado por el Gobierno en julio de 2020, y se apoya en el plan de inversiones previsto en el Plan de Recuperación y Resilencia de la Unión Europea.

El ISCIII reconoce la **relevancia que tienen los avances científicos** y tecnológicos en el progreso de la **sociedad**. También es preciso colaborar en crear una sociedad abierta a la innovación, que **se interese por la ciencia** y por los avances en biomedicina. Por tanto, el PEISCIII quiere que sus acciones se consideren **políticas públicas** abiertas a todos los actores, promoviendo la coordinación entre los mismos, así como su internacionalización, e impulsando la búsqueda de soluciones orientadas a resolver los principales problemas de la sociedad. Este plan se ha elaborado en consonancia con los Objetivos de Desarrollo Sostenible (ODS) de la Agenda 2030, basados en las prácticas de **gobierno abierto, participación ciudadana, transparencia y rendición de cuentas**. La salud y el bienestar constituyen el núcleo del tercer ODS de la Agenda 2030. Con la elaboración del PEISCIII, la organización quiere contribuir a la consecución de los ODS, generando **bienestar en la ciudadanía, así como crecimiento económico** mediante

la consolidación y fortalecimiento de las estructuras científicas biomédicas y sanitarias españolas. Esto debe conllevar su utilización eficiente y el desarrollo de las capacidades y recursos existentes, focalizando los esfuerzos en **garantizar la sostenibilidad** del sistema y aumentando la **competitividad internacional**.

En esta misma línea, el PEISCIII quiere incluir entre sus actuaciones, el fomento de la **Investigación e Innovación Responsables (RRI)**. Bajo este amplio concepto se incluyen iniciativas que tratan de reducir la distancia entre la ciencia y la sociedad, lo que conlleva la implicación activa de todos los actores gracias a metodologías de trabajo inclusivas y participativas. Con esta orientación, el ISCIII desea contribuir a reforzar la transparencia y la confianza ciudadana en las instituciones, fomentar la igualdad de género y la diversidad, y llevar a cabo una evaluación rigurosa del impacto de los resultados obtenidos.

El PEISCIII 2021-2025 también supone un **reto para el personal de la organización**. Sus objetivos se han planteado tras un proceso de reflexión interna y de trabajo en equipo, por lo que se ha generado un instrumento de gestión que refleja el grado de madurez de la organización, así como el compromiso con los objetivos y acciones que se describen a continuación. Es un plan que se afronta con el convencimiento de que supondrá una mejora de su funcionamiento y, por tanto, del servicio público que presta a la sociedad.

1.2. Método de elaboración del plan estratégico

El ISCIII presenta unas peculiaridades que lo convierten en un **organismo singular dentro de la Administración General del Estado (AGE)**. Su complejidad deriva no sólo de la pluralidad de sus actividades, centradas en el fomento y coordinación de la investigación biomédica, la prestación de apoyo científico-técnico al Sistema Nacional de Salud (SNS) y la docencia, sino también de sus recursos, tanto humanos como materiales, distribuidos en numerosos centros, unidades, fundaciones y consorcios.

La elaboración del PEISCIII ha sido un proceso liderado por la propia organización, a través de las siguientes etapas:

1) **Fase de organización del proceso y de análisis de situación**, que comenzó en el segundo semestre del año 2018 e incluyó: 1) la evaluación de la oportunidad y factibilidad, 2) la programación de actividades de participación y puesta en común en el seno de la organización, 3) el análisis del entorno y reuniones con agentes externos y 4) la elaboración del DAFO. Entre las actividades orientadas a realizar un análisis interno, destaca la iniciativa *Conociendo el ISCIII,* jornadas de encuentro y reflexión en las que se invitó a participar a todo el personal de la organización. Entre las actividades orientadas al análisis del entorno y a recabar las aportaciones de los agentes externos, destacan las reuniones con personal directivo de Institutos de Investigación Sanitaria (IIS), encuentros con directores y directoras científicos de áreas temáticas del Consorcio CIBER, de las Redes Temáticas de Investigación Cooperativa en Salud (RETICs) y de las Plataformas de Apoyo a la Investigación. También deben mencionarse las reuniones con directores y directoras de otros organismos públicos de investigación, la participación en grupos de trabajo en el Ministerio de Ciencia e Innovación (MCI), y el Ministerio de Sanidad (MS), así como las interacciones con las CCAA, y la participación en foros de reflexión y elaboración de ideas de la industria farmacéutica y biotecnológica.

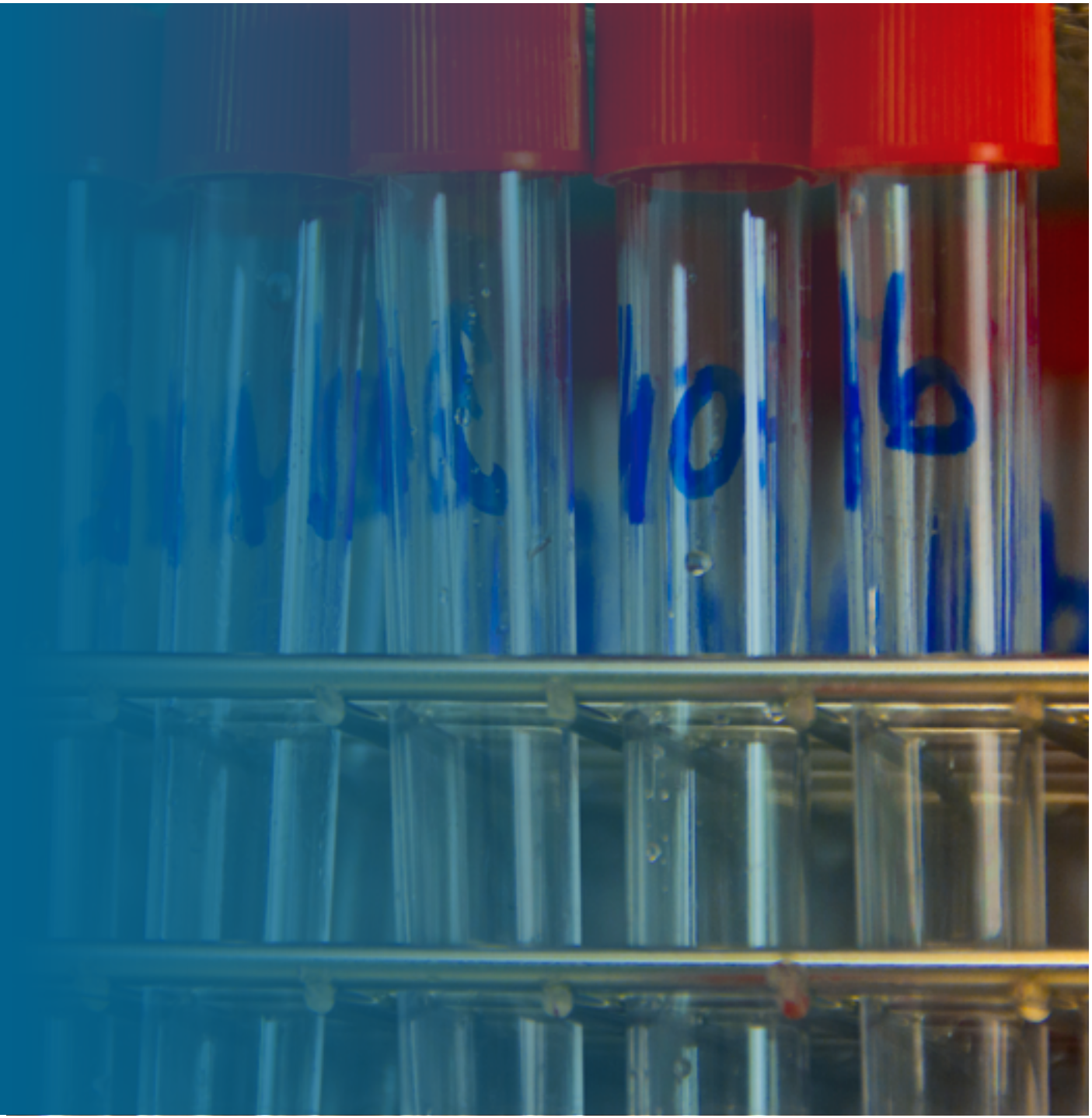
2) **Fase de identificación de estrategias,** que incluyó la definición de la misión, visión y valores, líneas estratégicas y sus metas, los objetivos estratégicos, así como las acciones concretas a desarrollar. Esta fase se desarrolló a lo largo del segundo semestre de 2019. Tras la elaboración de un primer borrador en diciembre de 2019, el documento **se remitió a todas las organizaciones mencionadas en el párrafo anterior, así como a todas las unidades del ISCIII**. Este **proceso de participación** permitió recoger comentarios, sugerencias y revisiones, que fueron de gran utilidad para el planteamiento de la versión final del PEISCIII**.**

En el **año 2020**, ante el profundo impacto sanitario, económico y social causado por la pandemia por **SARS-CoV-2**, ha sido necesario revisar el documento previamente elaborado. A lo largo del segundo semestre de 2020 se ha realizado un nuevo análisis del entorno, se ha confirmado la vigencia de las líneas estratégicas previamente definidas, y se han modificado algunos de los objetivos incluyendo actuaciones que pretenden dar respuesta a las necesidades identificadas durante la pandemia.

La ejecución del PEISCIII requiere del esfuerzo y la participación activa de todas las personas implicadas. Su **aprobación definitiva** debe realizarse en el Consejo Rector del ISCIII. La **fase de implementación, monitorización y evaluación** está previsto que comience en enero de 2021.

2.

Análisis **S**ituacional



2.1. Marco Legislativo y Competencial

El ISCIII es un **Organismo Público de Investigación** (OPI), con naturaleza jurídica de organismo autónomo (Ley 14/1986 General de Sanidad, Ley 37/1988 de Presupuestos Generales del Estado y Ley 13/1986 de Fomento y Coordinación General de la Investigación Científica y Técnica).

De acuerdo con la disposición adicional cuarta del Real Decreto 404/2020, por el que se desarrolla la **estructura orgánica básica del MCI**, el ISCIII está adscrito orgánicamente a este ministerio, aunque se le otorga también una **dependencia funcional del MS**, debido a sus funciones dentro del sector sanitario. En particular, el ISCIII depende funcionalmente del MS para la realización de aquellas actividades que desarrolle en relación con la planificación y la asistencia sanitaria y, en coordinación con el MCI, de aquellas otras de investigación aplicada cuando tengan traslación al SNS. Para la realización del resto de actividades dependerá funcionalmente del MCI, en concreto de la Secretaría General de Investigación.

Los órganos directivos del ISCIII son el Consejo Rector y la Dirección, como se recoge en el estatuto del ISCIII (RD 375/2001, de 6 de abril), en el que se definen también las funciones, objetivos y la estructura organizativa del organismo.

2.2. Funciones del ISCIII

Las funciones del ISCIII están recogidas en el **Real Decreto 375/2001**, por el que se aprueba su estatuto. El ISCIII tiene entre sus objetivos el **fomento, desarrollo y prestación de apoyo científico-técnico al SNS y de investigación en el ámbito de la salud, mediante la realización de investigación básica y aplicada, evaluación, acreditación científica y técnica, control sanitario, asesoramiento científico-técnico y formación y educación sanitaria en el ámbito de la biomedicina y ciencias de la salud**.

Sus funciones indican las especiales características del ISCIII, puesto que además de asesorar y prestar servicios al SNS es un OPI que realiza la doble función de productor de ciencia y de financiador del sistema de ciencia y tecnología, asumiendo **la planificación, fomento y coordinación de la investigación y la innovación biomédica y sanitaria**, conforme a las directrices y objetivos propuestos por el Gobierno en materia de política científica. Esta función se realiza fundamentalmente mediante la gestión de las convocatorias de subvenciones asociadas a la **Acción Estratégica en Salud (AES)**. Asimismo, participa en los **programas de investigación de la Unión Europea y de las CCAA,** mediante convenios y contratos apropiados. En la figura 1 se muestra un esquema de las funciones del ISCIII.

Figura 1. Funciones del ISCIII

RD 375/2001, de 6 de Abril. Estatuto del Instituto de Salud "Carlos III" BOE-A-2001-8157, Artículo 4

2.3. Presupuesto del ISCIII

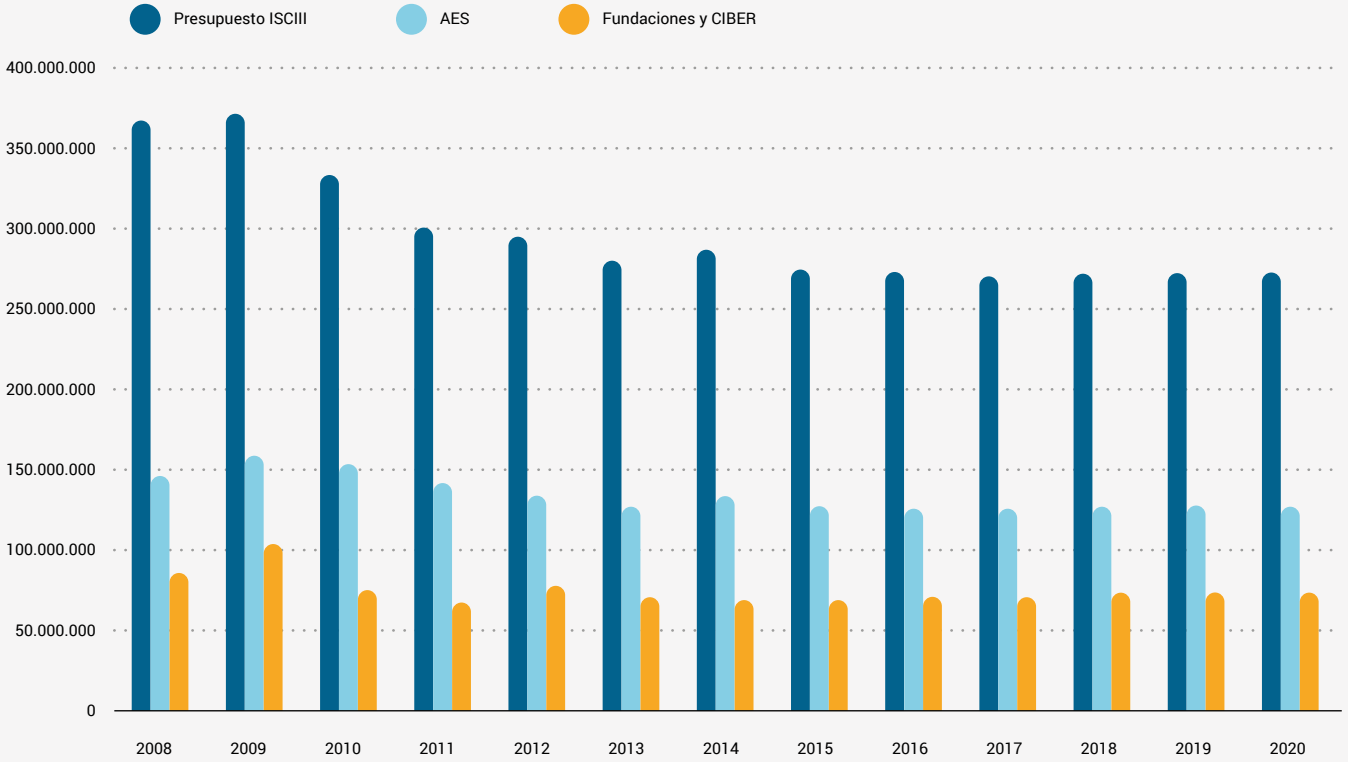
El presupuesto prorrogado para 2020 aprobado para el ISCIII **fue de 271.339.180 €**. Esta cantidad es un 0,5% más que en el año 2017 (269.957.380 €), y como referencia **cabe destacar que es un 26% menor que en 2008** (367.246.840 €), y 5,4% menor que el presupuesto de 2014 (286.762.840 €). Las principales fuentes de **ingresos** son las transferencias del departamento (actualmente Ministerio de Ciencia e Innovación), prestación de apoyo científico-técnico al SNS a entidades públicas y privadas, ingresos obtenidos en planes estatales de investigación científica, técnica y de innovación, la industria farmacéutica (principalmente en virtud de la aplicación de la Disposición Adicional Sexta de la Ley de Garantías y Uso Racional de Medicamentos), convenios de investigación y fondos europeos (Fondo Europeo de Desarrollo Regional y Fondo Social Europeo). El presupuesto de **gastos**, de carácter limitativo, destina un 75% del presupuesto a los capítulos 4 y 7, que consisten en transferencias nominativas destinadas a instituciones como CNIO, CNIC, CIBER (fundaciones y consorcios del sector público) y subvenciones destinadas a la AES. El **porcentaje de ejecución** de gastos se mantiene en un elevado nivel, en consonancia con ejercicios anteriores, que alcanza en término medio el 95% del presupuesto.

Merece una mención especial el presupuesto extraordinario de 25.200.000 € recibido en el organismo para la gestión de la pandemia. De estos fondos, 24.000.000 € se destinaron a una convocatoria extraordinaria de subvenciones directas para proyectos de investigación e innovación para luchar contra la COVID-19 desarrollados en todo el país (Fondo COVID), y 1.200.000 € han sido gestionados por el organismo para adquirir material fungible para diagnóstico microbiológico (PCR), reforzar los sistemas de vigilancia epidemiológica, y adquirir equipamiento necesario para abordar las líneas de investigación frente al SARS-CoV-2 desarrolladas por el Centro Nacional de Microbiología y Centro Nacional de Epidemiología. Asimismo, el organismo ha recibido más de un millón de euros en concepto de donación que han sido generados y destinados a la investigación contra la COVID-19.

El presupuesto aprobado para el ISCIII durante los últimos años se detalla en la figura 2.

En el siguiente gráfico se observa la evolución del presupuesto en relación con las principales fuentes de financiación en el periodo 2008-2020.

Figura 2. Evolución del presupuesto aprobado para el ISCIII en los últimos años 2008-2020

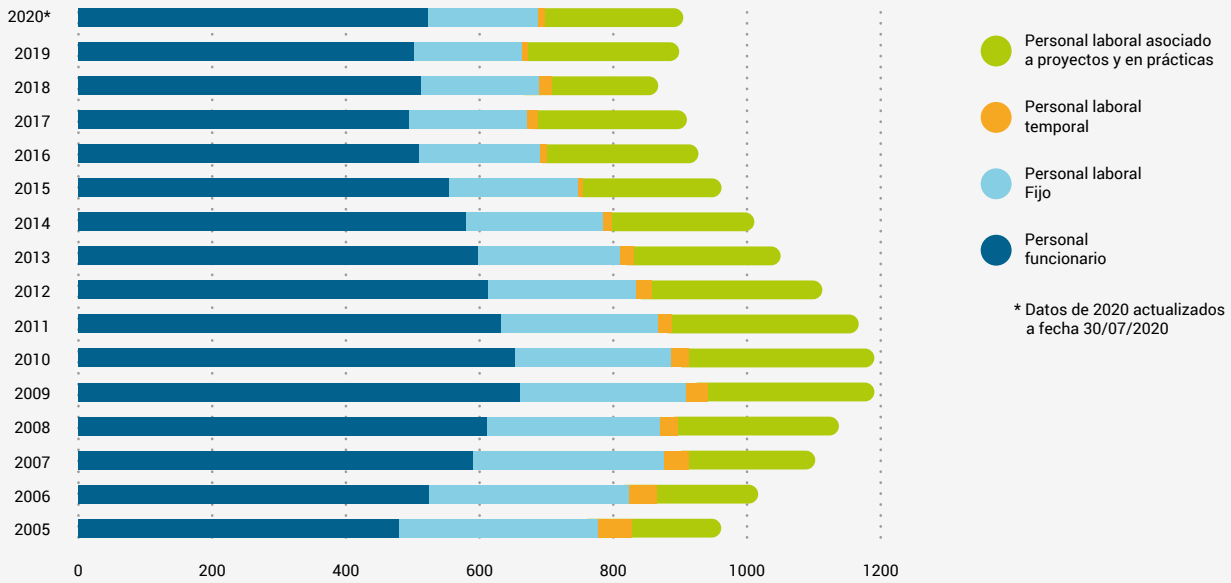


2.4. Recursos Humanos del ISCIII

A lo largo de la última década se ha producido una disminución progresiva en los recursos humanos del ISCIII. Sin embargo, en los años 2019 y 2020 se ha producido un cambio de tendencia con una ligera recuperación de efectivos. El número total de efectivos del año 2020 ha sido de **903**, lo cual supone un incremento del 3,91 % respecto del año 2019 (869). La Figura 3 muestra la evolución del personal del ISCIII en los últimos años. Cabe destacar que la tendencia ascendente se ha producido por la gradual incorporación del personal de la oferta pública de empleo 2017 y previsiblemente continuará el ascenso con la ejecución e incorporación de la oferta de empleo público 2018 y 2019 (previsto en 2021). En estas tres ofertas se han convocado alrededor de 180 plazas de personal funcionario en el turno libre y 85 de promoción interna.

En 2020, la **distribución del personal** del ISCIII por área de actividad muestra que el 21,70% es personal científico, el 30,67% personal de apoyo a la investigación, el 12,84% personal tecnólogo, y el 34,79% es personal de gestión y otros servicios. El 69 % del personal son mujeres y el 31% hombres.

Figura 3. Personal del ISCIII en las últimas anualidades



2.5. Descripción del Entorno

El ISCIII es un organismo de la AGE con una clara vocación de **servicio público** abierto a toda la sociedad. Para el desarrollo de sus funciones tiene **interacciones** con un gran número de entidades, entre las que podemos destacar diversos ministerios, CCAA, otras organizaciones e instituciones de la AGE, universidades, empresas farmacéuticas y de investigación, sociedades científicas, médicas y de otros ámbitos sanitarios, órganos colegiados, equipos de investigación nacionales e internacionales, profesionales sanitarios y representantes de la ciudadanía.

A nivel internacional, el ISCIII desarrolla sus funciones en contacto con sus homólogos europeos y de otros países, así como instituciones europeas como la Comisión Europea, el Centro Europeo para el Control y Prevención de Enfermedades (ECDC), la Organización Mundial de la Salud (OMS), y otros organismos, instituciones y fundaciones internacionales relacionadas con el sector de la salud.

2.6. Análisis DAFO

Debilidades

- **Dificultades** para **captar, contratar y retener recursos humanos** adecuados para las necesidades del organismo, además de la pérdida de efectivos como consecuencia de las jubilaciones, en una plantilla con edad media elevada.
- Pérdida de personal técnico y de gestión en la institución debido a la **ausencia** de mecanismos de **promoción profesional y de incentivos económicos.**
- Sistema de gestión **administrativa poco compatible** con la singularidad de la actividad realizada desde el ISCIII, muy **burocratizado** e inadaptado a las necesidades del sector.
- **Diseño anticuado** de la organización y no adaptado a la actividad actual del ISCIII.
- Sistemas y **aplicaciones informáticas** obsoletas y **poco flexibles** que no dan respuesta a las necesidades de la organización tanto en el ámbito de la investigación como de los servicios científico-técnicos, incluida la vigilancia epidemiológica.
- **Escasa comunicación** interna y **cultura** de colaboración en algunas estructuras y centros del ISCIII.
- **Modelo de gobernanza** con un limitado número de **canales** para que la comunidad científica y la ciudadanía puedan **asesorar y comunicarse** con la organización.
- **Poca visibilidad** social de la actividad realizada por el organismo y por sus centros vinculados.
- **Limitada transferencia** de la investigación que se realiza en el ISCIII a la práctica clínica, al SNS en general y otras entidades públicas y privadas en su ámbito de competencias.
- **Limitada proyección internacional de la investigación intramural** del ISCIII.

Amenazas

- **Precariedad** laboral del personal investigador y técnico, falta de desarrollo de la carrera del personal investigador joven en el Sistema Nacional de Salud, escasa visibilidad y liderazgo **de las mujeres** y ausencia de planes de **recambio** generacional para investigadores del SNS.
- Carencia de una **carrera profesional de tecnólogos** que posibilite su promoción profesional.
- **Baja financiación** de la ciencia en España (1,2% del PIB), e incertidumbre con respecto a los compromisos presupuestarios para el periodo 2021-2025.
- Elevada **carga burocrática** y gran complejidad del sistema de control de ayudas en I+D+i financiadas con fondos externos nacionales e internacionales, que dificulta su ejecución, el cumplimiento de compromisos y **desincentiva** la **consecución** de nuevas actividades o proyectos.
- Dificultad para captar y retener el talento en el ISCIII y organizaciones vinculadas en una situación de **gran competitividad internacional** y con una legislación que favorece poco al sector.
- **Ausencia** de **estrategia** científica compartida y de corresponsabilidad por parte de muchas **CCAA** en la financiación de los recursos humanos científicos y de los grupos de investigación.
- Aparición de **centros públicos y privados de excelencia que compiten** con los centros del ISCIII para ser centros de referencia en las mismas áreas de conocimiento.

Fortalezas

- Profesionalidad y compromiso del capital humano que desarrolla su labor profesional en el ISCIII.
- Reconocimiento del ISCIII como principal organismo **financiador y coordinador** de la **investigación en salud** a nivel nacional (gestor de la AES).
- Papel relevante como **entidad acreditadora** única del cumplimiento de estándares de excelencia en la investigación biomédica en los IIS.
- Elevada reputación como proveedor de **servicios de salud pública de referencia acreditados según normas internacionales** y único para la vigilancia de enfermedades a nivel nacional.

- Aumento de la **visibilidad del organismo** durante la pandemia y reconocimiento público de su labor de asesoría científico-técnica.
- **Prestigio de los centros** de investigación monográficos de **excelencia en enfermedades oncológicas (CNIO) y cardiovasculares (CNIC) vinculados al ISCIII**.
- **Gestión** transparente, eficiente y consolidada de la **AES**.
- **Capacidad** para establecer **alianzas** con otros organismos públicos (universidades, agencias regulatorias, administraciones) y privados (industria).
- Estructuras de investigación colaborativa financiadas y coordinadas desde el ISCIII con **producción científica** de impacto y con participación destacada de profesionales del SNS.
- Participación creciente de los investigadores del ISCIII en **programas internacionales.**
- Participación consolidada como **Organismo Intermedio en Fondos Estructurales** y de Inversión Europeos**.**
- **Presupuesto** bien **estructurado** y consolidado.
- **Experiencia adquirida** en el desempeño del trabajo deslocalizado durante la pandemia, y en la **utilización de sistemas remotos** para reuniones y otras actividades rutinarias.
- **Incorporación** a la organización de la **Administración Electrónica.**
- **Instalaciones** y **grandes equipos** renovados y de alta calidad en el campus de Majadahonda.

Oportunidades

- **Alto** nivel **profesional** del SNS, muy especializado y con reconocimiento internacional.
- Buen posicionamiento de los centros financiados por el ISCIII y del SNS en **programas internacionales** y en particular a nivel **europeo**.
- **Alineamiento** de la organización con la **Estrategia de Ciencia, Tecnología e Innovación 2021-2027** y con el nuevo programa marco de investigación **Horizonte Europa**.
- Identificación de la **investigación e innovación en salud como una prioridad estratégica** para España que precisa de un incremento en la inversión y reformas (Plan de Choque para la Ciencia y la Innovación, y Plan de Recuperación, Transformación y Resiliencia).
- **Compromiso** del Gobierno **para reforzar las capacidades humanas y materiales del ISCIII**, que han sufrido importantes retrocesos en financiación y en políticas transformativas en la última década (Plan de Choque para la Ciencia y la Innovación; Eje 1).
- **Compromiso** del Gobierno para abordar la transformación del Sistema de Ciencia y atracción de talento, implementando reformas estructurales para **dotar de estabilidad a la carrera profesional del personal científico** (Plan de Choque para la Ciencia y la Innovación: Eje 2).
- **Impulso de la transformación digital**, como uno de los ejes transversales y línea directriz del Plan de Recuperación, Transformación y Resiliencia, que incluye como una de la políticas palanca la digitalización de los servicios y funciones de la Administración.
- Impulso al desarrollo de la **Estrategia Española de Medicina de Precisión**.
- **Consideración** de la **salud** como sector transversal y factor nuclear en la **Agenda 2030.**
- **Concienciación** en el sector de la ciencia de la necesidad de elaborar **propuestas** para modificar y **mejorar** la **gestión administrativa**, basadas en sistemas ya existentes (sector de investigación de la defensa, agencias y empresas públicas).
- Proyectos **legislativos** para la contratación de **RRHH** en los OPIs como las convocatorias de la OEP 2018/2019 y los procesos de **estabilización** del personal laboral temporal de la AGE.

Resumen del análisis DAFO

Debilidades

- **Dificultades** para **captar y retener RRHH** y elevado número de **jubilaciones.**
- **Ausencia** de mecanismos de **promoción profesional y de incentivos económicos para técnicos y gestores.**
- Sistema de gestión **administrativa no adecuado a las necesidades y muy burocratizado.**
- **Diseño anticuado** de la organización.
- Sistemas y **aplicaciones informáticas** obsoletas y poco flexibles.
- **Escasa comunicación** interna y **fragmentación.**
- **Gobernanza** con escasa participación y asesoría de la comunidad científica y de los ciudadanos.
- **Escasa visibilidad** social.
- **Limitada transferencia** a la práctica clínica.
- **Limitada proyección internacional de la investigación intramural** del ISCIII.

Amenazas

- **Precariedad laboral**, escaso **liderazgo femenino** y ausencia de planes de **recambio generacional** para investigadores en el SNS.
- Carencia de una **carrera profesional de tecnólogos.**
- **Baja financiación** de la ciencia en España.
- Elevada **carga burocrática** y gran complejidad del sistema de control de ayudas en I+D+i.
- **Gran competitividad internacional** y legislación que favorece poco al sector.
- **Ausencia** de **estrategia** científica compartida, y corresponsabilidad por parte de muchas **CCAA.**
- **Competidores a nivel nacional.**

Fortalezas

- Profesionalidad y compromiso del **capital humano.**
- Reconocimiento como **financiador y coordinador** de la investigación en salud.
- **Entidad acreditadora** única de IIS.
- Reputación como proveedor de **servicios de salud pública de referencia y centros** de investigación **monográficos** de excelencia.
- Aumento de la **visibilidad del organismo** durante la pandemia y reconocimiento público de su labor.
- Participación consolidada como **Organismo Intermedio en Fondos Estructurales** y de Inversión Europeos.
- Capacidad de **establecer alianzas** con organismos públicos y privados.
- **Producción científica** ascendente financiada por el ISCIII.
- Participación creciente en **programas internacionales.**
- **Presupuesto** bien **estructurado** y consolidado.
- Experiencia en trabajo deslocalizado, y en la **utilización de sistemas remotos.**
- **Incorporación** a la **Administración Electrónica.**
- **Instalaciones** y **grandes equipos** de alta calidad.

Oportunidades

- **Sistema Nacional de Salud en España**: alto nivel profesional, muy especializado y reconocimiento internacional.
- Buen posicionamiento de los centros financiados por el ISCIII y del SNS en **programas internacionales y europeos.**
- Alineamiento con la **EECTI 2021-2027** y con **Horizonte Europa.**
- **Investigación e innovación en salud como prioridad estratégica.**
- **Compromiso para dotar de estabilidad a la carrera profesional del personal científico**.
- **Compromisos para reforzar las capacidades humanas y materiales del ISCIII**, y para abordar la **transformación del Sistema de Ciencia y atracción de talento.**
- **Impulso de la transformación digital.**
- Impulso al desarrollo de la **Estrategia Española de Medicina de Precisión.**
- **Salud** como sector transversal en la **Agenda 2030.**
- **Concienciación** para **mejorar** la **gestión administrativa.**
- Proyectos **legislativos** para la contratación de **RRHH** en los OPIs.

3.

Misión, **V**isión y **V**alores

3.1. Misión

La misión del ISCIII es contribuir a mejorar la salud de toda la ciudadanía por medio de la ciencia y la generación de conocimiento

En relación con esta misión, el ISCIII desarrolla las siguientes funciones:

- **Fomentar la investigación dirigida a proteger y mejorar la salud,** financiando la investigación de excelencia y altamente competitiva por medio de la AES del Plan Estatal de I+D+i, y facilitando una mayor participación nacional en programas y proyectos internacionales de I+D+i.

- **Desarrollar,** a través de los centros e institutos gestionados directamente por el ISCIII, **investigación del más alto nivel orientada** a resolver problemas de salud.

- **Vertebrar la investigación en el ámbito del SNS**, a través de los centros gestionados por el ISCIII, los institutos de investigación, fundaciones, redes, consorcios y plataformas de servicios.

- Gestionar, desarrollar y ofrecer al conjunto del Estado **apoyo científico-técnico de referencia** para la prevención y el control de enfermedades transmisibles y no transmisibles, y para la salud ambiental.

- Ofrecer **servicios de asesoramiento científico-técnico** para fundamentar la toma de decisiones en tecnologías sanitarias, productos biológicos y servicios de salud en el SNS.

- Desarrollar **programas docentes** dirigidos al conjunto del SNS, y proporcionar servicios de **información sanitaria y documentación científica.**

3.2. Visión

La visión del ISCIII es ser entidad de referencia nacional e internacional en salud pública y en el desarrollo y la financiación de la investigación biomédica y de la salud en España

3.3. Valores

Los **valores** principales en los que se fundamenta la actividad del ISCIII son:

- El **compromiso social, sanitario y medioambiental**, entendido como la aplicación de la ciencia para la consecución de los objetivos del Pilar Europeo de Derechos Sociales y los objetivos de desarrollo sostenible (ODS) para toda la humanidad, con especial atención a los objetivos relacionados con la salud, la igualdad de género y la protección del medioambiente.

- La **responsabilidad pública,** entendida como un compromiso ético hacia la ciudadanía y que se materializa en la gestión transparente, la participación ciudadana, la **igualdad de género**, la educación de la ciudadanía, el fomento de la cultura científica, y la ciencia abierta y disponible para toda la comunidad (**principios RRI**).

- La **integridad científica,** que garantiza el cumplimiento de principios bioéticos, la confidencialidad, el control de los conflictos de intereses, la veracidad de los resultados, y el respeto a la autoría y propiedad intelectual.

- La **profesionalidad,** que implica el compromiso con la formación continuada, responsabilidad con la calidad de nuestros servicios y la apertura a la innovación y a la mejora continuada.

- La **colaboración** y el **trabajo en equipo**, formando y participando proactivamente en equipos multidisciplinares, multi-céntricos, nacionales e internacionales.

4.

Definición de **E**jes **E**stratégicos y **L**íneas **E**stratégicas **T**ransversales del **P**EISCIII

Ejes Estratégicos y Líneas Estratégicas Transversales

4.1. Ejes Estratégicos

La identificación de ejes estratégicos se ha realizado teniendo en cuenta la misión, visión, valores enunciados en el apartado anterior. Se han considerado también factores relacionados con los productos y servicios que proporciona la organización, la cultura y estructura organizativa y a la gestión del ISCIII. En el análisis realizado tras la pandemia, se han mantenido los mismos ejes estratégicos confirmando que mantienen plena vigencia, y se han incorporado acciones específicas dirigidas a colaborar en el control de la pandemia por COVID-19, mientras ésta continúe.

EJE1: Fomento, coordinación y ejecución de la investigación e innovación en Salud

El fomento, coordinación y ejecución de la investigación e innovación en salud incluye los ámbitos de actuación relacionados con las siguientes funciones del ISCIII:

1) **planificación**, **coordinación** y **apoyo** a la investigación en el SNS.
2) **concesión** de **ayudas** y **subvenciones** a la investigación y su seguimiento.
3) **gestión** y **fomento** de programas de investigación nacionales e internacionales.
4) **acreditación** y **seguimiento** de entidades y centros que alcancen el nivel de excelencia en investigación que se determine reglamentariamente.
5) **diseño** de la **estrategia científica** y **desarrollo de líneas de investigación propias** en los centros nacionales de investigación gestionados por el ISCIII.
6) **colaboración en el diseño de la estrategia científica** en institutos de investigación, fundaciones, consorcios y plataformas de servicios dependientes del ISCIII.
7) **asesoramiento científico-técnico para fundamentar la toma de decisiones** en tecnologías sanitarias y servicios de salud.

EJE2: Vigilancia, prevención y control de enfermedades basada en la excelencia científica

Este eje estratégico se enfoca en las funciones del ISCIII como **instituto de salud pública responsable de actividades de vigilancia, prevención y control sanitario** a través de la investigación dirigida a la provisión de servicios sanitarios y de recomendaciones científico-técnicas en el ámbito de las enfermedades transmisibles y no transmisibles, enfermedades raras, salud ambiental y ocupacional. Estas funciones están sustentadas necesariamente y vinculadas de forma indivisible al **desarrollo de programas de investigación de excelencia** en estas áreas de conocimiento.

EJE3: Docencia y documentación científica

Este eje estratégico abarca el desarrollo y consolidación de los **programas docentes** dirigidos al conjunto del SNS, así como los servicios de información sanitaria y documentación científica. El SNS como empleador más importante de profesionales sanitarios y elemento clave en el mantenimiento de la salud de la población, necesita, como pilar estratégico, una estructura potente y ambiciosa que puede asumir la formación permanente de sus recursos humanos actuales y la preparación adecuada de los futuros. La Escuela Nacional de Sanidad debe constituirse como su principal proveedor de formación.

EJE4: Gobernanza y participación estratégica

Este eje estratégico incluye todos los ámbitos de actuación relacionados con el modelo de **gobernanza y gestión** del ISCIII. Este eje quiere promover la **innovación** en la gestión de la organización, incluyendo la creación de nuevas estructuras de gobernanza horizontal y **participación** científica y ciudadana. Su finalidad es ayudar a **fomentar la excelencia** científica en los centros de investigación del ISCIII.

4.2. Líneas Estratégicas Transversales (LET)

Las líneas estratégicas transversales están constituidas por **acciones** que deben **aplicarse** a **todos los ejes** descritos en el apartado anterior y responden a la necesidad de incorporar de forma organizada actuaciones estratégicas que ayuden a **cohesionar** el PEISCIII.

LET1. Gestión transparente, ágil y ajustada a las necesidades

Esta línea estratégica transversal incluye las acciones relacionadas con la gestión **financiera**, gestión de **RRHH** y gestión de equipos e **infraestructuras**. El ISCIII de acuerdo a su naturaleza jurídica de OPI está sujeto a un marco normativo de funcionamiento que no siempre se adapta bien a las actividades que desarrolla. Es necesario que la organización funcione eficazmente dentro de este marco legislativo, pero también que proponga acciones **pioneras que modifiquen** el sistema administrativo que rige el Sistema Español de Ciencia y Tecnología.

LET2. Orientación hacia la sociedad y Objetivos de Desarrollo Sostenible

Esta línea incorpora la orientación del ISCIII hacia la sociedad e incluye acciones alineadas con los principios de **investigación e innovación responsable**, como la gestión transparente, la igualdad de género, la ética en la investigación, el acceso abierto a la ciencia, la educación y cultura científica y la participación ciudadana. Además, y en sintonía con las estrategias nacionales e internacionales de investigación, está comprometido en la consecución de los ODS de la Agenda 2030, con especial atención al ODS3: **garantizar una vida sana y promover el bienestar para todos en todas las edades**. En relación al **ODS5 (igualdad de género)**, el ISCIII impulsará y fomentará las medidas necesarias para conseguir una igualdad efectiva tanto a nivel interno como en las actuaciones que deriven de sus funciones.

LET3. Transformación digital

Esta línea incluye acciones encaminadas a conseguir la **transformación digital e incorporación de nuevas tecnologías** de la información, que afecta de forma transversal al ISCIII y a su entorno, constituyendo un elemento clave de éxito para obtener los resultados esperados en cada eje estratégico. A su vez, la labor de investigación, innovación y coordinación que realiza el ISCIII puede contribuir a generar **nuevas herramientas**, tecnologías y soluciones digitales para la salud y los cuidados.

LET4. Internacionalización

La **visión global** de la ciencia y la salud, así como la coordinación de programas y capacidades forman parte de la **política científica y de salud** de todos los países desarrollados y muy especialmente dentro de la UE. La globalización amplifica el impacto de los resultados obtenidos, pero también conlleva que las organizaciones tengan que realizar la actividad investigadora de manera muy diferente a como se planteaba hace unos años. Esta línea describe las acciones encaminadas a aumentar la internacionalización de la actividad del ISCIII, y se considera un elemento fundamental para que el PEISCIII tenga éxito en la **transformación y fortalecimiento** de la organización. El reforzamiento de la posición del ISCIII provocará además efectos **sinérgicos** en el entorno, que redundarán en un aumento de la financiación externa para nuestro sistema científico y tecnológico.

5.

Objetivos **E**stratégicos y **A**cciones

A continuación se **numeran** y **detallan** los Objetivos Estratégicos (OE) incluidos en cada uno de los Ejes Estratégico y Líneas Estratégicas Transversales, así como las **acciones diseñadas en cada uno de los OE en el periodo 2021-2025**. En cada acción se incluye un listado de **actuaciones**, con su **cronograma**.

EJE 1. Fomento, coordinación y ejecución de investigación e innovación en Salud

OE1

Potenciar la captación de talento y las carreras científicas.

OE2

Definir y fomentar estándares de calidad en el ámbito de la investigación sanitaria, y contribuir a la vertebración y cohesión del SNS.

OE3

Mejorar y modernizar la gestión de la Acción Estratégica en Salud.

OE4

Fomentar la investigación colaborativa real y adecuarla a las necesidades de la sociedad.

OE5

Desarrollar y fortalecer grandes programas multidisciplinares transversales con participación de los centros/escuelas/unidades intramurales del ISCIII.

OE6

Favorecer la transferencia del conocimiento y la innovación en salud.

EJE 1. Fomento, coordinación y ejecución de investigación e innovación en Salud

OE1. Potenciar la captación de talento y las carreras científicas

1. Facilitar la incorporación efectiva de **personal científico** en los centros asistenciales del SNS y en los IIS, y desarrollar la **carrera profesional** basada en el mérito y en la excelencia.

1. a. Vincular la concesión de contratos Miguel Servet al compromiso de crear plazas de investigadores con contratos indefinidos por parte de las CCAA y otras organizaciones. **Fechas**: Se ha incorporado por vez primera en la AES 2020, que implica compromiso de aplicación a partir de 2025.

1. b. Colaborar con el Ministerio de Ciencia e Innovación y el Ministerio de Sanidad para impulsar los **cambios normativos a nivel estatal** que amparen el desarrollo de un itinerario profesional (*tenure-track*) en el ámbito sanitario. **Fechas**: Propuesta de cambio normativo de la Ley de Investigación Biomédica que se abordará en 2021.

1. c. Establecer un foro estable de trabajo y comunicación con las CCAA para facilitar el desarrollo del marco normativo necesario. Este foro estable de colaboración permitirá tratar otros asuntos de interés para los que se elaborarían actuaciones específicas en cada caso. **Fechas**: Enero 2021-2025.

1. d. Elevación de compromisos compartidos al **Consejo Interterritorial del MS. Fechas**: Segundo semestre 2021. Desarrollo 2021-2025.

2. Fomentar la formación y proteger la actividad de clínicos científicos/investigadores en el SNS.

2. a. Designar una **Comisión Asesora para el Fomento de las Carreras del personal clínico científico/investigador**, que colabore en la identificación de posibles barreras y plantee soluciones y medidas a tomar. **Fechas**: 2021.

2. b. Elaborar y financiar programas para f**omentar la vocación científica de forma temprana** durante el grado o primeros años de formación especializada, en colaboración con universidades, centros de investigación e IIS. **Fechas**: 2021-2025.

2. c. Reforzar el impacto social y dentro del propio sector científico de los programas para clínicos-investigadores del ISCIII (investigadores con contratos Río Hortega y Juan Rodés). **Fechas**: 2021-2025.

2. d. Impulsar el desarrollo normativo en las CCAA que garantice la incorporación, la estabilidad y el reconocimiento de la labor investigadora en el marco estatutario de los hospitales y otros centros asistenciales. **Fechas**: 2021-2023.

EJE 1

3. Adoptar medidas para apoyar el **talento joven** con acciones de formación, incorporación y movilidad en la AES (y en las acciones intramurales AESI correspondientes), así como el requerimiento formal de planes de **recambio generacional** en los grupos de investigación y de innovación del SNS.

3. a. Incorporar medidas en la AES, que también se aplicarán a la AESI. **Fechas**: Incorporación a convocatorias AES 2021.

4. Incentivar el **papel de la mujer en la ciencia española**, implementando medidas que protejan las carreras científicas de las investigadoras, con especial atención a las más jóvenes.

4. a. Incorporar medidas de incentivación en la AES y en la AESI. **Fechas**: análisis de situación en 2020, incorporación a convocatorias AES 2021-2025.

4. b. Analizar la financiación concedida (solicitudes, porcentaje de éxito etc…) de forma desagregada por sexo. **Fechas**: AES 2021-2025.

4. c. Garantizar la **paridad** en los paneles de evaluación de la AES. **Fechas**: AES 2021-2025.

4. d. Evaluación de la i**mplementación de planes de igualdad** en el proceso de seguimiento y acreditación de los IIS. **Fechas**: 2021-2025.

EJE 1

OE2. Definir y fomentar estándares de calidad en el ámbito de la investigación sanitaria, y contribuir a la vertebración y cohesión del SNS

5. Evaluar anualmente la actividad de los IIS acreditados mediante indicadores estandarizados, que permitan desarrollar herramientas de evaluación comparativa.

5. a. Establecer un sistema de indicadores anuales en colaboración con los IIS. **Fechas**: Elaboración durante 2021. Implementación a partir del enero de 2022.

5. b. Mejorar el espacio virtual disponible para el seguimiento, evaluación y acreditación de IIS. **Fechas**: 2021.

6. Identificar y **reconocer** formalmente las **buenas prácticas en el ámbito de la investigación e innovación responsable** en los centros públicos asistenciales del SNS.

6. a. Conceder un **premio** de Investigación e Innovación Responsable para IIS. **Fechas:** 2021.

6. b. Diseñar nuevas acciones dirigidas a todo el SNS e inclusión en la AES. **Fechas**: 2022-2025.

7. Promover la investigación e innovación en **atención primaria y cuidados de salud**, dentro del nuevo Marco Estratégico de Atención Primaria.

7. a. Incorporar medidas en la AES. **Fechas**: Incorporación a convocatorias AES 2021-2025.

8. Diseñar un **Plan de Cohesión de la I+D+i Sanitaria** en colaboración con las CCAA y los ministerios con competencias en ciencia y sanidad, que garantice la financiación estructural básica de la I+D+i en salud en todas las CCAA con especial atención a los centros sanitarios públicos.

8. a. Crear grupo de trabajo y proponer un plan de acción. **Fechas**: análisis de situación en primer semestre de 2021.

9. Desarrollar un **programa de acompañamiento y asesoría para los IIS no acreditados** encaminado a favorecer y reconocer formalmente su adecuación progresiva a los criterios de acreditación.

9. a. Diseñar el programa y asignar recursos. **Fechas**: elaboración y puesta en marcha en 2021. Despliegue del programa en toda España en 2022.

EJE 1

OE3. Mejorar y modernizar la gestión de la Acción Estratégica en Salud

10. Incorporar las **aportaciones de la ciudadanía y asociaciones de pacientes** en el proceso de evaluación de la AES.

10. a. Elaborar un plan en colaboración con todos los actores implicados, incluyendo acciones formativas. **Fechas**: elaboración del plan en el primer trimestre de 2021.

11. Modernizar las plataformas informáticas de evaluación y seguimiento de proyectos de investigación.

11. a. Poner en marcha nuevas plataformas. **Fechas:** diciembre de 2020 y aplicación en la convocatoria AES 2021.

12. Incorporar expertos internacionales en el proceso de evaluación de ayudas, especialmente en proyectos con alto impacto económico o con posible conflicto de interés, así como en proyectos con participación internacional.

12. a. Iniciar proyecto piloto en evaluación. **Fechas**: implantación en AES 2021.

12. b. Normalizar la incorporación tras la adopción de las nuevas plataformas informáticas de evaluación y seguimiento. **Fechas**: AES 2022-2025.

13. Revisar el proceso de evaluación, aplicando la experiencia adquirida durante la pandemia en los paneles no presenciales, y el diseño de un procedimiento público basado en la libre competencia y el mérito para la elaboración de paneles de evaluadores y comisiones temáticas de evaluación.

13. a. Elaborar un procedimiento de evaluación consensuado con actores clave. **Fechas**: elaboración en 2021 y su aplicación en evaluación de la convocatoria AES de 2022.

13. b. Elaborar y poner en marcha un procedimiento público para la creación de paneles de evaluadores y comisiones temáticas de evaluación. **Fechas**: AES 2022.

14. Rediseñar y poner marcha una **plataforma on-line abierta** a toda la ciudadanía que permita **visibilizar las acciones financiadas** en el marco de la AES y de la AESI, con la cuantía de la ayuda y los objetivos de los proyectos, incorporando una visión de **género**.

14. a. Analizar la estructura del Portal FIS, **https://portalfis.isciii.es. Fechas**: primer trimestre de 2021.

14. b. Diseñar el nuevo portal y puesta en marcha. **Fechas**: diseño en 2021 y lanzamiento en 2022.

14. c. Proponer la integración en el portal de información sobre las ayudas concedidas por la AEI y el CDTI, en un proyecto liderado por el Ministerio de Ciencia. **Fechas**: 2023-2025.

15. Poner en marcha un **sistema de evaluación de resultados** de las ayudas AES**, vinculado a su aplicabilidad** para resolver los problemas de salud de nuestra sociedad.

15. a. Realizar un proyecto piloto. **Fechas**: 2021.

15. b. Incorporar la evaluación a los procedimientos normalizados de seguimiento de ayudas, en colaboración con el MCI. **Fechas**: 2022.

16. Poner en marcha la **certificación de la gestión de subvenciones** a través de la norma ISO.

16. a. Elaborar un plan de actuación y cronograma. **Fechas**: primer trimestre 2021.

EJE 1

OE4. Fomentar la investigación colaborativa real y adecuarla a las necesidades de la sociedad

17. Elaborar un **plan estratégico para el CIBER 2021-2025** que lo consolide como un centro de investigación de excelencia, con mayor distribución geográfica, y enfocado al desarrollo de grandes proyectos de proyección internacional.

17. a. Realizar una evaluación externa y análisis de situación actual. **Fechas**: 2021.

17. b. Establecer políticas comunes de promoción del talento joven, recambio generacional, evaluación de grupos, discontinuidad de grupos, nuevas colaboraciones, y detección y respuesta a las necesidades de la sociedad en coordinación con las instituciones que forman parte del consorcio. **Fechas**: 2021.

17. c. Desplegar el Plan Estratégico CIBER 2022-2025, incluyendo medidas de igualdad. **Fechas**: 2022-2025.

18. Evaluar las **RETICs** del ISCIII con una orientación a resultados en salud y abordar su redefinición estratégica para cubrir las principales necesidades de la sociedad.

18. a. Diseñar un sistema de evaluación basado en resultados en salud y nuevas herramientas de seguimiento científico basadas en indicadores clave, e incluirlas formalmente en la nueva convocatoria. **Fechas**: inclusión en la AES de 2021. Despliegue en 2022.

19. Rediseñar las **Plataformas de Apoyo a la Investigación** financiadas a través de la AES y aplicar un **sistema de indicadores de obligado cumplimiento** que permita garantizar que la inversión realizada se dirige a facilitar la I+D+i en el conjunto del SNS.

19. a. Elaborar los indicadores para la evaluación e incorporarlos a las convocatorias. **Fechas**: incluidos en la convocatoria de la AES 2020. Despliegue del nuevo sistema de evaluación e indicadores en 2021.

20. Facilitar la solicitud de **proyectos colaborativo**s entre los centros/escuelas/unidades directamente dependientes del ISCIII y los IIS, así como otras organizaciones del sector público consideradas de excelencia en la investigación sanitaria.[1]

20. a. Identificar las áreas **prioritarias** de los diferentes centros/escuelas/unidades y de los IIS con potencial para articular colaboraciones. **Fechas**: aplicación en las convocatorias AES-AESI 2021-2025.

20. b. Promover la creación de unidades mixtas entre los centros/escuelas/unidades ISCIII y organizaciones externas alineadas con los objetivos del ISCIII. **Fechas**: 2021-2022.

21. Establecer una interconexión **estratégica** entre CIBER, RETICs, Plataformas y centros/escuelas/unidades propios del ISCIII para conseguir que el ISCIII tenga una estructura de investigación biomédica **coherente**, evitando duplicidades y permitiendo sinergias.

21. a. Identificar las áreas prioritarias de las diferentes estructuras del ISCIII. **Fechas**: 2021.

21. b. Incluir en la AES/AESI priorización de estos proyectos coordinados. **Fechas**: Incluir en la convocatoria AES 2021-2025.

1 Para ello será necesario planificar y priorizar estratégicamente la financiación de la investigación de los centros propios del ISCIII, y que ésta se **alinee** con los objetivos estratégicos de la organización (OE5).

EJE 1

OE5. Desarrollar y fortalecer grandes programas multidisciplinares transversales con participación de los centros/escuelas/unidades intramurales del ISCIII

Se pretende que los programas de investigación favorezcan **sinergias** entre centros ISCIII y faciliten la **colaboración** con el resto de centros de investigación españoles, europeos y con países de otros continentes. Las áreas estratégicas de investigación se han determinado en función de las capacidades y las prioridades del nuevo programa marco de investigación Horizonte Europa. También se incluye una acción coordinada para la lucha frente al COVID que se ha articulado de forma urgente durante la pandemia con la participación de diferentes centros, y que debe mantenerse al menos hasta que persista la pandemia. Todos estos programas tendrán en consideración la perspectiva de género y los principios de RRI.

22. Implementar y completar el programa transversal COVID-19. Este programa se mantendrá mientras dure la pandemia y participan en él todos los centros/escuelas/unidades del ISCIII, con especial dedicación en CNM y CNE.

22. a. Mantener las acciones en marcha. **Fechas:** 2021.

22. b. Elaborar informes periódicos de actividad y resultados. **Fechas**: 2021.

22. c. Evaluar necesidades y recursos periódicamente. **Fechas**: 2021. Ampliable mientras dure la pandemia.

23. Desarrollar el **programa transversal de Salud Global** mediante la coordinación de los diferentes actores ISCIII (en especial CNMT, CNE, CNM, CNSA, ENS y SGPIIRI) en el área de salud global y medicina tropical.[2]

23. a. Diseñar el programa con un plan de acción y designar un coordinador. **Fechas**: 2021.

23. b. Implantar el programa y desarrollar masa crítica y alianzas nacionales e internacionales. **Fecha**: 2021-2025.

24. Desarrollar el **programa transversal en Salud Digital**, con especial aplicación a la cronicidad y los cuidados en salud.[3]

24. a. Diseñar el programa con un plan de acción y designar un coordinador. **Fechas**: 2021.

24. b. Implantar el programa y desarrollar masa crítica y alianzas nacionales e internacionales en coordinación con la Secretaría de Salud Digital, Información e Innovación del Ministerio de Sanidad. **Fecha**: 2021-2025.

24. c. Desarrollar medidas de apoyo a la investigación en medicina de precisión. **Fechas**: Elaborar plan de medidas específicas en 2021. AES 2021-2025.

2 Debe basarse en colaborar para resolver los problemas y desafíos que afectan a los países de ingresos bajos y medianos, con **especial hincapié en las enfermedades infecciosas, incluyendo enfermedades olvidadas y de la pobreza,** así como enfermedades no transmisibles muy prevalentes en estos países.

3 El programa se enfocará a nuevos servicios, herramientas, tecnologías y soluciones **digitales** y basadas en la **inteligencia artificial,** para la salud y cuidados, incluyendo medicina personalizada, promocionando la investigación, el desarrollo y el uso de tecnologías innovadoras dirigidas a mejorar la calidad de vida y la sostenibilidad del SNS, con especial participación de UFIEC, INVESTEN, UITeS, CNE y ENS. Su despliegue se apoyará en la puesta en marcha de un master en salud digital.

EJE 1

25. Fortalecer los programas transversales de investigación en **determinantes ambientales y sociales de la salud**,[4] incluidas actuaciones relativas a la **salud mental**.

25. a. Desarrollar masa crítica y alianzas nacionales e internacionales para el programa de determinantes ambientales de la salud, incluyendo el cambio climático y el medio ambiente urbano. **Fechas**: 2021-2025.

25. b. Desarrollar masa crítica y alianzas nacionales e internacionales para el programa de determinantes sociales. **Fechas**: 2021-2025.

25. c. Poner en marcha en colaboración con el Ministerio de Sanidad un sistema de vigilancia de salud mental, fortalecer los sistemas de información en salud mental, prevención del suicidio y formación en salud mental. **Fechas**: 2022-2025.

26. Desarrollar el programa transversal de investigación en **Terapias Avanzadas**.[5]

26. a. Diseñar el programa con un plan de acción. **Fechas**: 2021.

26. b. Abordar la compra de equipamiento y creación de infraestructuras dentro del ISCIII para dar soporte a la investigación en terapias avanzadas, incluida la creación del Centro Nacional de Terapias Avanzadas. **Fechas**: Definición estratégica del Centro Nacional de Terapias Avanzadas en 2021. Comienzo de las obras en segundo semestre de 2021 con fecha de finalización en 2023.

26. c. Implantar el programa y desarrollar masa crítica y alianzas nacionales e internacionales. **Fecha**: 2021-2025.

26. d. Integrar las iniciativas en **terapias avanzadas** dentro de la **Estrategia Española de Medicina de Precisión** con acciones específicas basadas en proyectos coordinados. **Fechas:** 2021.

4 Este programa incluye actuaciones relacionadas con la identificación, análisis e intervención sobre **factores medioambientales, socioeconómicos, culturales y de comportamiento** que impactan en la salud física y mental de la ciudadanía, con especial atención a los grupos más vulnerables. En este marco se impulsará también la creación de una línea de colaboración que agrupe a todos los investigadores que trabajan en cambio climático y salud (fundamentalmente CNSA, CNE, ENS, CNM, UITeS y UFIEC).

5 Debe incluir las líneas que abordan la terapia de **enfermedades raras, neoplasias**, enfermedades neurodegenerativas, y otras enfermedades crónicas a través de la investigación en medicamentos de terapia avanzada (**terapia celular, terapia génica e ingeniería tisular**). Además, se analizará la puesta de marcha de las infraestructuras necesarias, de acuerdo con la normativa vigente, para la futura producción de terapias avanzadas y su distribución a centros del SNS.

EJE 1

OE6. Favorecer la transferencia del conocimiento y la innovación en salud

27. Rediseñar estratégicamente la Oficina de Transferencia de Resultados de la Investigación (**OTRI**).

27. a. Valorar el cambio de nombre a Oficina de Transferencia del Conocimiento (OTC). **Fechas**: primer trimestre de 2021.

27. b. Elaborar un plan de mejora que incluya una mayor presencia de la OTRI en los dos campus del ISCIII. **Fechas**: presentación del plan en 2021.

27. c. Elaborar un plan de acción que indique medidas a tomar y posicionamiento del ISCIII sobre **patentes** y otras formas de propiedad industrial, contratos/convenios con **empresas** diagnósticas y farmacéuticas y sobre la creación y alojamiento de empresas de **base tecnológica**. **Fechas**: presentación del plan último trimestre de 2021.

27. d. Diseñar una agenda de reuniones entre investigadores y la OTRI para definir la cartera y la oferta tecnológica del ISCIII, así como con empresas para establecer alianzas, en aquellos proyectos con productos o tecnologías con un **grado de madurez tecnológica** (TRL) elevado, con objeto de facilitar su transferencia y obtención de fondos en convocatorias orientadas al desarrollo tecnológico. **Fechas**: elaboración de la agenda en 2021.

28. Desarrollar programas específicos de valorización y acercamiento al mercado de tecnologías con posible desarrollo industrial.

28. a. Elaborar los programas y aplicarlos. **Fechas**: 2022-2025.

29. Implantar un **programa formativo en la ENS** dirigido a investigadores y emprendedores del SNS sobre **innovación, transferencia de resultados de la investigación** y creación de empresas de base tecnológica.

29. a. **Elaborar** el programa docente. **Fechas**: 2021.

30. Reforzar el papel de la **Agencia de Evaluación de Tecnologías Sanitarias (AETS) del ISCIII,** dentro de la Red Española de Agencias de Evaluación de Tecnologías Sanitarias **(RedETS),** destacando su posición como única agencia de ámbito estatal y conexión natural internacional.

30. a. Puesta en marcha del **Plan de Acción** de la AETS 2021-2025. **Fechas**: enero 2021.

30. b. Puesta en marcha del **Plan Operativo** AETS 2021-2022. **Fechas**: enero 2021.

30. c. Evaluación del Plan Operativo AETS (primeros 18 meses). **Fechas:** tercer trimestre 2022.

30. d. Puesta en marcha del Plan Operativo AETS 2023-2025. **Fechas:** Enero 2023.

31. Impulsar una **visión corporativa de la actividad de transferencia en el ISCIII y su entorno,** incluyendo las fundaciones, CIBER y la Plataforma ISCIII de Dinamización e Innovación de las capacidades industriales del SNS y su transferencia efectiva al sector productivo.

31. a. Desarrollar imagen de marca de la organización sobre su papel en la transferencia. **Fechas**: 2021-2025.

31. b. Fomentar proyectos colaborativos e intercambio de buenas prácticas, así como participación conjunta en grandes eventos y ferias del sector. **Fechas:** 2021-2025.

EJE 2. Vigilancia, Prevención y Control de Enfermedades basada en la excelencia científica

La pandemia por COVID-19 en 2020 ha causado 35 millones de casos por el momento, paralizando gran parte de la actividad mundial y modificando nuestro comportamiento y usos sociales. El impacto de la infección ha sido devastador, ya que muestra una tasa de letalidad relevante y podrían producirse nuevas ondas epidémicas. Para detectar precozmente estas nuevas ondas y controlar eficazmente sus efectos deben desarrollarse e implementarse sistemas epidemiológicos y biológicos de vigilancia. Es imprescindible que estos sistemas de vigilancia puedan incorporar de forma ágil los hallazgos de las numerosas iniciativas de investigación desarrolladas en todo el mundo.

OE7

Mejorar los sistemas de vigilancia de las enfermedades transmisibles y desarrollar nuevos sistemas de vigilancia para las enfermedades crónicas y para las enfermedades relacionadas con la exposición ambiental.

OE8

Fortalecer los servicios de referencia diagnósticos y epidemiológicos del ISCIII para normalizar su función de asesoría científico-técnica dirigida al SNS.

OE9

Fortalecer y apoyar la investigación de excelencia en los centros/escuelas/unidades gestionados por el ISCIII y promover su interrelación y sinergia con las actividades de asesoría científico-técnica.

EJE 2. Vigilancia, Prevención y Control de Enfermedades basada en la excelencia científica

OE7. Mejorar los sistemas de vigilancia de las enfermedades transmisibles y desarrollar nuevos sistemas de vigilancia para las enfermedades crónicas y para las enfermedades relacionadas con la exposición ambiental

32. Mejorar los **sistemas y plataformas de notificación electrónica** para la vigilancia de las enfermedades de declaración obligatoria.

32. a. Reformar y mejorar el sistema SIVIES del CNE, priorizando la revisión y mejora continua del procedimiento de vigilancia y notificación de casos de COVID-19. **Fechas**: 2021.

32. b. Adaptar el sistema de vigilancia centinela de gripe y virus respiratorios a las necesidades creadas por la pandemia por COVID-19. **Fechas**: 2021.

33. Mejorar la interacción entre el **CNE** y **CNM** para el diseño de nuevos programas de vigilancia epidemiológica molecular alineados con programas de OMS y ECDC, así como de otras actividades que permitan controlar las enfermedades transmisibles. Se priorizará el programa de vigilancia de COVID-19 mientras dure la pandemia.

33. a. Desarrollar y **coordinar** las rondas del Estudio Nacional de Seroprevalencia COVID-19 (ENE-COVID). **Fechas**: 2020-2021.

33. b. Programar e implementar actividades y reuniones conjuntas entre el CNE y el CNM. **Fechas**: 2021.

33. c. Diseñar y establecer los programas de vigilancia molecular no activos actualmente. **Fechas**: 2021-2025.

EJE 2

34. Desarrollar un programa público estatal para la **vigilancia de las enfermedades oncológicas** que reúna la información de todas las CCAA.[6]

34. a. Elaborar un plan para el desarrollo del sistema en coordinación con el Ministerio de Sanidad. **Fechas**: primer semestre 2021.

34. b. Analizar bases de datos ya existentes y su posible integración en el sistema. **Fechas**: 2021.

34. c. Poner en marcha el sistema de vigilancia. **Fechas**: enero 2022.

34. d. Publicar primeros informes epidemiológicos. **Fechas**: enero 2023.

35. Crear el **Nodo Español de Biomonitorización Humana**, para mejorar la vigilancia y control sobre la exposición ambiental a agentes químicos, e identificar grupos de población altamente expuestos o especialmente vulnerables.

35. a. Nombrar el comité asesor multidisciplinar del nodo: **Fechas**: 2021.

35. b. Desarrollar la normativa para la creación oficial del nodo, e inclusión en el borrador de la Ley de Salud Pública. **Fechas**: 2021.

35. c. Crear efectivamente el nodo en el CNSA. **Fechas**: Antes del fin de 2021.

35. d. Establecer las redes de laboratorios de biomonitorización humana. **Fechas**: 2022.

35. e. Analizar la integración con el **partenariado europeo** en biomonitorización humana **Fechas**: 2022.

6 Este programa será pionero en la vigilancia de las enfermedades no transmisibles y está incluido en el borrador de la Ley de Salud Pública.

EJE 2

OE8. Fortalecer los servicios de referencia diagnósticos y epidemiológicos del ISCIII para normalizar su función de asesoría científico-técnica dirigida al SNS

36. Desarrollar un sistema de consulta en el CNM para el **análisis de secuencias completas de ácidos nucleicos** de microorganismos que esté a disposición del SNS.[7]

36. a. Desarrollar el sistema y la plataforma informática. **Fechas**: 2021.

36. b. Prestar servicios al SNS. **Fechas**: 2022.

37. Aumentar la participación del ISCIII en el **Plan de Resistencias Antimicrobianas.**

37. a. Crear un grupo de trabajo con la AEMPS. **Fechas**: 2021.

37. b. Asumir las funciones otorgadas por el plan al ISCIII. **Fechas**: 2021.

37. c. Crear un registro con datos clínicos, epidemiológicos y moleculares sobre infecciones por bacterias multi-resistentes. **Fechas**: 2022.

38. Establecer el **Registro Nacional de Enfermedades Raras** y coordinación con el registro IIER.

38. a. Poner en marcha el registro nacional en conjunción con el MS. **Fechas**: 2021.

38. b. Elaborar procedimientos de coordinación del registro nacional con el registro del IIER. **Fechas**: 2021.

39. Fortalecer los servicios de **diagnóstico genético** especializado del IIER.

39. a. Analizar la situación actual y necesidades del SNS. **Fechas**: 2021.

39. b. Elaborar un plan de mejora. **Fechas**: 2021.

39. c. Desarrollar un sistema de consulta de mutaciones genéticas asociadas a enfermedades raras y cánceres hereditarios a disposición del SNS. **Fechas**: 2022.

40. Fortalecer el **Laboratorio Nacional de Referencia de Calidad del Aire y del Patrón Nacional de Ozono** del CNSA.

40. a. Analizar sus funciones. **Fechas**: 2021.

40. b. Elaborar un plan de mejora para que sus actividades se alineen totalmente con los objetivos del ISCIII sobre el control de enfermedades y la salud pública humana. **Fechas**: 2021.

41. Fortalecer la participación de los expertos del ISCIII en los grupos asesores técnicos nacionales e internacionales sobre epidemiología y diagnóstico de las enfermedades.

41. a. Elaborar un plan específico. **Fechas**: 2021.

7 Este sistema permitirá la inclusión de secuencias completas de microrganismos, su análisis y comparación con el resto de secuencias disponibles en el sistema. Fortalecerá el análisis de brotes, estudios de clonalidad y de cadena de infección.

EJE 2

42. Fomentar la creación de redes nacionales e internacionales de laboratorios con servicios diagnósticos de referencia, liderados por centros del ISCIII, priorizando aquellas relacionadas con el control de la pandemia por COVID-19.

42. a. Colaborar en la redacción de la Ley de Salud Pública, en el capítulo sobre laboratorios de referencia. **Fechas**: 2021.

42. b. Elaborar un plan específico que incluya la participación en los EJPs y en proyectos de infraestructuras europeas. **Fechas** 2021-2022.

43. Reforzar las instalaciones, sistemas y personal dedicados a la conservación y gestión de repositorios, incluyendo cepas, muestras clínicas, tejidos y fuentes de datos.

43. a. Analizar el funcionamiento de los biobancos existentes en el ISCIII. **Fechas:** Enero 2021.

43. b. Elaborar un plan de mejora de su gestión, que incluya inversiones, su ubicación en una única instalación y configuración como un servicio central.

43. c. Incorporación de un biobanco de **muestras humanas** obtenidas en **estudios poblacionales** a gran escala en los que participe el ISCIII (estudio ENE-COVID, y proyecto de Medicina Predictiva IMPaCT). **Fechas**: 2021-2022.

43. d. Asegurar la calidad de los procedimientos para que todos se adapten a la política de protección de datos y observación de los principios éticos. **Fechas**: 2021.

43. e. Mejorar la gestión de las grandes fuentes de datos alojadas en el ISCIII, adaptándolas a estándares internacionales, creando info-bancos en aquellos casos en los que sea posible. **Fechas**: 2021-2025.

EJE 2

OE9. Fortalecer y apoyar la investigación de excelencia en los centros/escuelas/unidades gestionados por el ISCIII y promover su interrelación y sinergia con las actividades de asesoría científico-técnica

El objetivo general sería desarrollar **la investigación intramural del ISCIII**, para que se alinee completamente con las funciones de apoyo al SNS y de asesoría científico técnica y que mejore sus indicadores, priorizando la participación internacional y el control de la pandemia por COVID-19 mientras ésta continúe.

44. **Mejorar** la consecución y los indicadores de proyectos de investigación, contratos y convenios de los centros/escuelas/unidades.

44. a. Realizar el análisis de resultados (publicaciones, comunicaciones a congresos, informes, etc.) de cada proyecto, contrato y convenio. **Fechas**: 2021-2025.

44. b. Elaborar un plan para aumentar el número de proyectos, convenios y contratos con financiación externa sin incrementar la financiación concurrente. **Fechas**: 2021.

44. c. Elaborar una estrategia para aumentar la consecución de fondos en convocatorias internacionales. **Fechas:** 2021-2025.

44. d. Elaborar una estrategia para aumentar la consecución de fondos del sector privado (fundaciones, empresas y otros actores del sector). **Fechas:** 2021-2025.

44. e. Mejorar los indicadores bibliométricos y científicos de los centros/escuelas/unidades del ISCIII. **Fechas**: Definir los indicadores en 2021 e implantar las estrategias en 2022-2025.

45. **Planificar** y **priorizar** estratégicamente la financiación intramural.

45. a. Analizar las subvenciones recibidas en cada área de conocimiento y sus resultados. **Fechas:** 2021.

45. b. Incrementar las zonas y unidades comunes, reduciendo el aislamiento de los laboratorios de investigación. **Fechas**: 2021-2025.

45. c. Consultar con el Claustro Científico del ISCIII las posibles formas de priorización. **Fechas**: 2021.

46. **Implantar** medidas específicas de apoyo a la investigación preclínica orientada a la resolución de problemas de salud.

46. a. Elaborar un plan para i**ncrementar** la contratación de personal de apoyo y auxiliar para mejorar la eficacia de los resultados obtenidos con las subvenciones concedidas. **Fechas**: Enero 2021.

46. b. Diseñar una estrategia para mejorar la relación entre los proyectos financiados y la **transferencia** de tecnología para mejorar los servicios de los centros de referencia. **Fechas**: 2021.

47. **Promover** medidas de mejora destinadas al personal investigador en formación.

47. a. Instaurar medidas de mejora en la gestión del personal en formación (plan de mentores y medidas de apoyo a contratados pre y postdoctorales). **Fechas**: 2021-2025.

47. b. Crear premios a las mejores publicaciones y trabajos de investigación. **Fechas**: 2021-2025.

47. c. Organizar jornadas científicas y actividades comunes periódicas en las que participen personal investigador en formación. **Fechas**: 2021-2025.

47. d. Implantar medidas de apoyo a la movilidad, dirigidas a investigadores en formación, para realizar estancias formativas en organizaciones externas. **Fechas**: aplicar en AESI 2021.

EJE 3. Docencia y Documentación Científica

OE10

Modernizar los programas docentes, la gestión y las infraestructuras de las escuelas nacionales de salud pública (ENS y ENMT) y de los centros/unidades del ISCIII.

OE11

Mejorar la difusión de la investigación en ciencias de la salud y facilitar el acceso abierto a la ciencia.

EJE 3. Docencia y Documentación Científica

OE10. Modernizar los programas docentes, la gestión y las infraestructuras de las escuelas nacionales de salud pública (ENS y ENMT) y de los centros/unidades del ISCIII

48. Ampliar el **alcance y la accesibilidad** de los programas docentes invirtiendo en **estrategias flexibles de enseñanza y aprendizaje** que aprovechen las tecnologías digitales y las nuevas modalidades educativas.

48. a. Elaborar un plan estratégico de la ENS y la ENMT, que incluya establecer un listado de proveedores asociados colaboradores y sus criterios de acreditación, los mecanismos de financiación, la incorporación de docentes del más alto nivel, la revisión de todos los aspectos docentes, los baremos retributivos para profesores y las órdenes de precios públicos y privados. **Fechas**: 2021.

48. b. Modernizar las plataformas online para docencia. **Fechas**: 2021-2022.

49. Reforzar las capacidades y recursos necesarios para incrementar la eficiencia de la **gestión administrativa** de programas docentes, de forma que puedan llegar al máximo número de profesionales con la rapidez que exigen las nuevas necesidades de formación.

49. a. Aumentar los RRHH involucrados en la gestión de la docencia: **Fechas**: 2022.

49. b. Revisar los procedimientos de gestión administrativa y económica de las escuelas y proponer mejoras. **Fechas**: 2021.

49. c. Incorporar **nuevas fuentes de financiación** a través de programas nacionales y europeos, y proponer alternativas de mejora en la captación y uso de los recursos. **Fechas**: 2021-2025.

50. Actualizar la oferta docente de las escuelas, adaptándola a las necesidades de formación del sector, con un énfasis especial en lo que respecta a **liderazgo y transformación digital**, y ofreciendo títulos **oficiales** universitarios en todos los casos en que esto sea **posible**.

50. a. Desarrollar el programa de doctorado UNED/ISCIII. **Fechas**: aprobación en 2020 y matrícula primera promoción en 2021.

50. b. Crear nuevos programas para la **capacitación en tecnología digital** de los profesionales sanitarios, incluyendo un nuevo máster en **salud digital y bioinformática**. **Fechas**: 2021.

50. c. Identificar las necesidades y desarrollo de nuevas propuestas, teniendo en cuenta el marco general de la Ciencia en los Sistemas de Salud (Health Systems Science) mejorando específicamente el programa docente **centrado en la investigación** interdisciplinar orientada a la solución de problemas de salud pública. **Fechas**: 2021-2025.

50. d. Aplicar la perspectiva de **género** en las actividades docentes del ISCIII. **Fechas**: análisis de situación en 2021 e implantar medidas de mejora en 2021.

50. e. Desarrollar **programas dirigidos a fomentar el liderazgo, no sólo en las posiciones de gestión sanitaria, sino en todos los niveles asistenciales**. Para ello es necesario formación en pensamiento crítico, trabajo interdisciplinar, cultura organizativa y habilidades operacionales, como herramientas para mejorar los resultados de la actividad clínica y aumentar la eficiencia y la satisfacción profesional.

EJE 3

51. Diseñar una **estructura departamental** de las escuelas similar a la que tiene centros docentes considerados de excelencia, con departamentos académicos en diferentes áreas básicas de la salud pública.

51. a. Elaborar un plan de reforma y analizar la incorporación formal de investigadores de otros centros y unidades del ISCIII en el claustro académico de las escuelas. **Fechas**: 2021.

52. Establecer alianzas formales con las CCAA para fortalecer el programa de formación en administración y gestión sanitarias de la ENS, así como las actividades docentes en género y salud.

52. a. Elaborar agenda de reuniones y estrategia que incluya un plan de RRHH para el programa. **Fechas**: Primer trimestre 2021.

53. Aumentar la formalización de **convenios o acuerdos con otras instituciones o entidades** para facilitar la colaboración en actividades docentes o de desarrollo de estudios y trabajos técnicos por parte de la ENS.[8]

53. a. Elaborar plan y cronograma de convenios. **Fechas** 2021-2022.

54. Favorecer la participación de los investigadores del ISCIII en la docencia universitaria y de post-grado.

54. a. Analizar todas las actividades **docentes**, seminarios internos y externos, cursos, rotaciones, TFM y estancias en los centros/unidades del ISCIII. **Fechas**: 2021.

54. b. Aumentar las actividades ligadas a organismos **internacionales**, **convenios** docentes y programas **universitarios**. **Fechas** 2022.

54 c. Desarrollar una oferta docente en los centro/unidades **alineada** con los objetivos de la organización, favoreciendo las actividades docentes **universitarias**. **Fechas**: 2022-2025.

8 Entre estos acuerdos destaca el **IMIENS** (Instituto Mixto de Investigación ENS-UNED), que debe tener gran relevancia para el desarrollo de estas iniciativas.

EJE 3

OE11. Mejorar la difusión de la investigación en ciencias de la salud y facilitar el acceso abierto a la ciencia

55. Fortalecer REPISALUD, repositorio institucional en salud del ISCIII, CNIO y CNIC, y abrirlo a todos los investigadores y las entidades beneficiarias de las ayudas de la AES con el objetivo de aumentar la visibilidad, el impacto y la transferencia del conocimiento abierto de la investigación financiada desde el ISCIII.

55. a. Abrir el repositorio a los IIS. **Fechas**: primer semestre de 2021.

55. b. Abrir a otras instituciones. **Fechas**: segundo semestre de 2021 y 2022.

55. c. Elaborar un plan para crear un recolector propio o la integración en RECOLECTA de la FECYT, para reunir en un único punto la producción científica de investigadores españoles del área de la salud. **Fechas**: 2021.

56. Impulsar las políticas de acceso abierto y su implantación a través de **cursos de formación** dirigidos a personal bibliotecario del SNS en colaboración con la ENS, impulsando la formación de formadores.

56. a. Elaborar un programa docente. **Fechas**: primer semestre 2021.

57. Mantener, **ampliar** y **mejorar** el **catálogo en red de fondos bibliográficos del SNS**, ampliando los fondos y abriéndolo a nuevas organizaciones.

57. a. Ampliar los fondos y búsqueda activa de organizaciones interesadas. **Fechas**: primer trimestre de 2021.

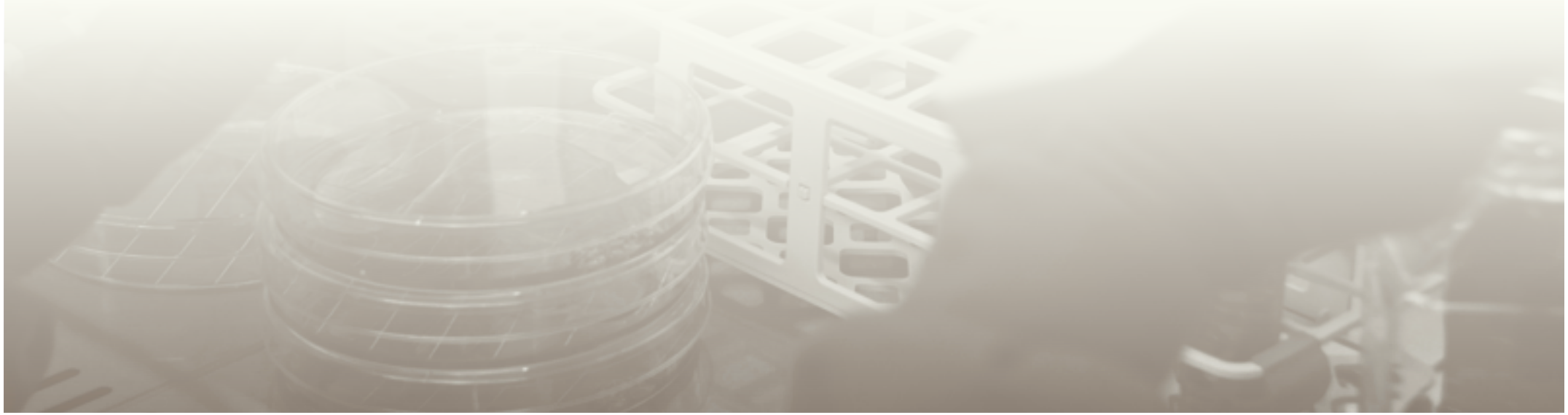
EJE 4. Gobernanza y participación estratégica

OE12

Establecer formalmente órganos de participación y asesoramiento para las actividades de investigación y de apoyo científico-técnico en salud pública en los centros propios del ISCIII.

OE13

Facilitar la participación de la comunidad científica y la ciudadanía en el fomento y coordinación de la I+D+i en el conjunto del SNS.



EJE 4. Gobernanza y participación estratégica

OE12. Establecer formalmente órganos de participación y asesoramiento para las actividades de investigación y de apoyo científico-técnico en salud pública en los centros propios del ISCIII

58. Incorporar de forma normalizada el **Claustro Científico del ISCIII (CCISCIII)** creado a finales de 2019, en las tareas de asesoramiento a la Dirección General en relación a la investigación intramural, contribuyendo a avanzar en la transparencia y en el desarrollo de la gobernanza horizontal.

58. a. Elaborar las normas de funcionamiento del CCISCIII y comenzar reuniones periódicas. **Fechas**: 2021.

58. b. Valorar la incorporación de los contratados temporales pre y postdoctorales del ISCIII como miembros del claustro. **Fechas**: análisis en el CC y toma de decisión en 2021.

59. Designar un **Comité Científico Asesor Externo para la Docencia y la Investigación Intramural del ISCIII (CCAEDI)** que colabore con la orientación estratégica como organismo público de investigación y como organización que presta servicios y asesoramiento científico-técnico.

59. a. Aprobar su creación por el Consejo Rector. **Fechas**: 2021.

59. b. Modificar el Estatuto del ISCIII para la inclusión formal del CCAEDI en el modelo de gobernanza. **Fechas**: 2021.

EJE 4

OE13. Facilitar la participación de la comunidad científica y la ciudadanía en el fomento y coordinación de la I+D+i en el conjunto del SNS

60. Crear el **Comité Asesor de la Dirección** (**CAD**) del ISCIII. Su función será la de asesorar a la Dirección, mediante **recomendaciones** no vinculantes para el fomento y coordinación de la investigación biomédica nacional. Se incorporarán representantes de la comunidad científica, representantes de instituciones académicas, representantes de asociaciones de pacientes, la ciudadanía, y fundaciones de filantropía científica que tengan **relación estratégica con el ISCIII**. El CAD podrá asesorar en otras funciones del ISCIII, cuando esto se considere indicado.

60. a. Elaborar el reglamento de funcionamiento y designación de miembros mediante resolución de la Dirección del ISCIII. **Fechas**: primer trimestre de 2021.

60. b. Iniciar actividades. **Fechas**: 2021.

61. Crear **foros estables de participación y reflexión** conjunta entre el ISCIII y las CCAA.

61. a. Crear y mantener un foro estable con los IIS, con documentos de trabajo y dos reuniones anuales (la primera se celebró en noviembre de 2019). **Fechas**: 2021-2025.

61. b. Crear otros foros de reflexión con las CCAA, sobre aspectos en los que sea necesario contar con el consenso de las CCAA. **Fechas**: 2021-2025.

LET1. Gestión transparente, ágil y ajustada a las necesidades

OE14

Incrementar la financiación de la investigación biomédica y sanitaria a través de la AES y de las alianzas con entidades privadas sin ánimo de lucro.

OE15

Desarrollar un plan de gestión de RRHH que permita adaptar la plantilla a las necesidades del organismo y favorezca la productividad y satisfacción de los trabajadores, incluida la conciliación familiar.

OE16

Promover y proteger la salud física y mental de los trabajadores del ISCIII.

OE17

Avanzar en la calidad de la gestión en las unidades administrativas, centrales y de apoyo, simplificando los procedimientos y mejorando la transparencia y la rendición de cuentas.

OE18

Mejorar las infraestructuras y equipamientos, y adaptar los protocolos de seguridad a las necesidades del organismo.

LET1. Gestión transparente, ágil y ajustada a las necesidades

OE14. Incrementar la financiación de la investigación biomédica y sanitaria a través de la AES y de las alianzas con entidades privadas sin ánimo de lucro

62. Incrementar y proteger la financiación de la investigación en salud a través del incremento de fondos que se dedican a la AES.

62. a. Incorporar las necesidades de financiación de la investigación e innovación en salud a través de la AES en el Plan de Recuperación y Resilencia. **Fechas**: 2021-2022.

62. b. Poner en marcha procedimientos que permitan **aumentar la generación de créditos** presupuestarios asociados a los ingresos que obtiene el ISCIII (contratos, convenios y fondos FEDER, Fondo Social Europeo, etc.) e incorporación a la plataforma SOROLLA OPIS desarrollada por la Intervención General de la Administración del Estado. **Fechas**: 2021-2022.

62. c. Colaborar con el MS para aumentar y optimizar la recepción y utilización de fondos obtenidos de acuerdo con la **Disposición Adicional Sexta** de la Ley 29/2006 de Garantías y Uso Racional de Medicamentos. **Fechas**: 2021-2025.

63. Desarrollar una **red de alianzas estratégicas con organizaciones sin ánimo de lucro y fundaciones** de filantropía científica que permita cofinanciar programas estratégicos para España.

63. a. Analizar la situación y proponer una estrategia de alianzas. **Fechas**: 2021.

LET 1

OE15. Desarrollar un plan de gestión de RRHH que permita adaptar la plantilla a las necesidades del organismo y favorezca la productividad y satisfacción de los trabajadores, incluida la conciliación familiar

64. Negociar una nueva **Relación de Puestos de Trabajo** que se ajuste a las necesidades del organismo, con especial atención a las necesidades de la organización en cuanto a personal técnico de apoyo, personal de servicios centrales y escalas de gestión y generales.

64. a. Adecuar la relación de puestos de trabajo de personal laboral al IV Convenio único. **Fechas**: 2021.

64. b. Analizar las necesidades de personal destinado a prestación de servicios en salud pública, tareas de administración, gestión y de apoyo técnico, a partir del estudio de cargas de trabajo y diseño de un plan para incorporar los recursos necesarios. **Fechas**: 2021-2022.

64. c. Promover el desarrollo de la carrera profesional para tecnólogos según lo recogido en la Ley de la Ciencia de 2014. **Fechas**: 2021-2025.

64. d. Promover medidas para mejorar las retribuciones y situación profesional de los ayudantes y auxiliares de investigación, y otro personal de apoyo. **Fechas**: 2021-2025.

65. Implementar las retribuciones asociadas a la **carrera investigadora.**

65. a. Abonar los atrasos correspondientes a las nuevas retribuciones (quinquenios y sexenios). **Fechas**: 2020-2021. Ejecutado parcialmente.

65. b. Realizar las modificaciones presupuestarias necesarias para su implementación e incorporación en los próximos presupuestos. **Fechas**: 2021.

66. Diseñar y **compartir** en la organización un **plan de incorporación de personal a través de la OEP**,[9] incluyendo específicamente **personal sanitario para la prestación de servicios en salud pública** y de gestión de I+D+i. Se tendrá en consideración también el personal que presta servicio y que tiene otras titulaciones (físicos, químicos, estadísticos, etc.).

66. a. Incorporar el personal que consiguió plaza en la OEP 2017. **Fechas**: Se han iniciado los procesos selectivos en las escalas de investigadores. Está previsto que el resto se realice en 2021.

66. b. Desarrollar las OEPs de 2018 y 2019. **Fechas**: 2020-2021.

66. c. Elaborar las OEPs de 2020, 2021 y 2022. **Fechas**: 2021-2023.

9 Se realizará teniendo en cuenta la **estabilización** de puestos de carácter estructural en el ISCIII. Se **planificarán** y revisarán las necesidades, considerando las incorporaciones, las edades de jubilación y las líneas de actuación que se quieren reforzar, especialmente las **sanitarias**. Es necesario contabilizar el porcentaje y distribución de puestos, así como **tasas** de cobertura y de rotación en los puestos de trabajo.

LET 1

67. Poner en marcha acciones dirigidas a facilitar la gestión de los **contratos laborales temporales vinculados a proyectos y programas de investigación, así como a contratos y convenios**.

67. a. Impulsar la **adaptación** del marco normativo para permitir la **autorización genérica** de la contratación del personal laboral temporal con financiación externa y contratos predoctorales, independientemente de las autorizaciones de contratación con cargo al cupo. **Fechas**: 2021.

67. b. Desarrollar un sistema de contratación asociado a **bolsas de trabajo. Fechas:** desarrollo del sistema informático y puesta en funcionamiento de la bolsa en primer semestre 2021; desarrollo de la segunda fase con digitalización completa en cuarto trimestre de 2021.

67. c. Fortalecer los recursos que se dedican a la provisión y gestión de Recursos Humanos. **Fechas**: 2021-2022.

68. Implementar la **contratación indefinida no fija** de acuerdo a los criterios recogidos en el RD 3/2019, de 8 de febrero, de medidas urgentes en el ámbito de la Ciencia, la Tecnología, la Innovación y la Universidad.

68. a. Elaborar la planificación de las incorporaciones asociadas a las convocatorias de estabilización del personal temporal. **Fechas**: 2021-2022.

69. Introducir nuevas formas de gestión del conocimiento, **organización** de **tareas**, así como elementos de **evaluación de cargas de trabajo** para avanzar en la eficiencia, la equidad y la igualdad de **género**, aprovechando la experiencia adquirida durante la pandemia en la realización de trabajo no presencial.

69. a. Realizar un plan de transferencia del conocimiento. **Fechas**: 2021.

69. b. Certificar mediante ISO 9001 los procesos de gestión económica y de RRHH de Secretaría. **Fechas**: 2021-2025.

69. c. Desarrollar un programa de evaluación del desempeño, basado en la evaluación sistemática de los resultados. **Fechas**: 2021.

69. d. Elaborar un plan de asignación de tareas y aplicarlo. **Fechas**: 2021-2025.

70. Implantar un **programa de tele-trabajo** con el objetivo de mejorar la conciliación, mejorar la eficiencia y facilitar medidas de distanciamiento social cuando sean requeridas por las autoridades sanitarias.

70. a. Implementar los desarrollos tecnológicos, ya iniciados, en las aplicaciones de permisos y control horario. Seguir impulsando la administración electrónica reforzando la tramitación, creación y gestión del expediente electrónico[10]. **Fechas**: 2021-2022.

70. b. Elaborar una propuesta y **negociar** con las organizaciones sindicales. **Fechas**: 2021-2022.

70. c. Desarrollar un programa de teletrabajo e incorporación al calendario laboral. **Fechas**: primer trimestre 2022.

71. Establecer un nuevo **sistema de productividad**.

71. a. Elaborar un sistema específico para la plantilla con funciones estructurales y de prestación de servicios. **Fechas**: 2021-2022.

71. b. Diseñar el nuevo sistema de cálculo de productividad por objetivos y solicitar autorización del Departamento de Costes de Personal del Ministerio de Hacienda. **Fechas**: 2021-2022.

71. c. Negociar con organizaciones sindicales y aprobación por la Dirección General del ISCIII. **Fechas**: 2021-2022.

10 El impulso de la administración electrónica facilita una gestión trazable y electrónica de los expedientes y por tanto su tramitación telemática. Ya ha sido impulsada durante el periodo 2018-2020 y está previsto continuar con NOTIFICA y la carpeta del ciudadano.

LET 1

OE16. Promover y proteger la salud física y mental de los trabajadores del ISCIII

72. Elaborar, revisar y desplegar los protocolos necesarios para garantizar la protección de los trabajadores del ISCIII frente al **SARS-CoV-2.**

72. a. Desarrollo y actualización del **Plan de Contingencia** elaborado por el organismo y aprobado con el acuerdo del Comité de Seguridad y Salud Laboral. **Fechas:** 2020-2021.

72. b. Diseño de un **protocolo para la detección precoz de COVID-19 en el ámbito laboral** conforme a las recomendaciones de las autoridades sanitarias, que incluya criterios para realización de PCR y otras pruebas de detección de infección activa. **Fechas**: 2020-2021.

73. Desplegar el **Plan de Promoción de la Salud** para trabajadores del ISCIII y programar acciones concretas.

73. a. Conseguir un **ISCIII libre de humo**, mediante la declaración de los dos campus como áreas sanitarias y la aplicación de la normativa correspondiente. **Fechas**: 2021.

73. b. Implantar medidas para la detección y control de la **hipertensión arterial** en los trabajadores del ISCIII. **Fechas**: 2022.

73. c. Fomentar la práctica de ejercicio físico y mejora de las instalaciones necesarias (duchas, vestuarios, gimnasio, etc.). Se valorará la creación de algún tipo de instalación deportiva adicional, como rutas para salir a caminar o correr en ambos campus. **Fechas**: 2021-2023.

73. d. Reducir el estrés laboral y prevenir riesgos psicosociales incluyendo cursos y actividades en el programa docente ISCIII (yoga, actividades físicas, etc.) y **proponer** actividades conjuntas (deportivas, culturales, etc.). **Fechas**: 2021-2025.

73. e. Fomentar la alimentación **saludable** y equilibrada, con jornadas y actividades para los trabajadores y sus familias. **Fechas**: 2022-2025.

73. f. Implantar medidas de control para que los alimentos ofrecidos por las cafeterías de los campus y las máquinas expendedoras de comida sean lo más saludables posible. **Fechas**: 2021-2025.

74. Conseguir una **actuación rápida y eficaz en caso de emergencia y coordinar los Planes de Autoprotección** de cada uno de los pabellones/edificios de los campus de Chamartín y Majadahonda.

74. a. Revisar los Planes de Autoprotección de los pabellones. **Fechas**: Enero 2021.

74. b. Elaborar el Plan Director de Emergencias de los campus de Chamartín y Majadahonda. **Fechas**: 2021-2023.

75. Evaluar todos los **riesgos laborales de forma integral,** incluyendo riesgos psicosociales y de bioseguridad.

75. a. Revisar las evaluaciones de riesgos laborales del personal que trabaja en los diferentes edificios del ISCIII. **Fechas**: 2021.

LET 1

OE17. Avanzar en la calidad de la gestión en las unidades administrativas, centrales y de apoyo, simplificando los procedimientos y mejorando la transparencia y la rendición de cuentas

76. Optimizar e integrar las aplicaciones informáticas de los servicios centrales y de gestión de I+D+I (RRHH, gestión económica, administración electrónica, ACI, etc.).

76. a. Integrar los programas informáticos OPENLAB e IFMS, así como otras herramientas de gestión. **Fechas**: 2021.

76. b. Desarrollar procedimiento de carga automática de las facturas ingresadas en el módulo de contraído previo de la aplicación SIC (IGAE). **Fechas**: Realizado en diciembre de 2020. Implementación, regularización de su ejecución y emisión de informes por parte de contabilidad en 2021.

76. c. Incorporar el módulo de gestión para OPIs del sistema SOROLLA. **Fechas**: 2021-2022.

76. d. Sustituir la aplicación actual de ingresos, **revisar** la funcionalidad de la aplicación PLYCA y **analizar** el procedimiento para la incorporación de los expedientes a SOROLLA, a fin de unificar la documentación en una sola aplicación. **Fechas**: 2021.

77. Agilizar los **procedimientos de contratación pública**.

77. a. Elaborar e **implantar** un plan de compras que incremente la adquisición de suministros por el sistema de concursos públicos. **Fechas**: segundo semestre de 2021.

77. b. Planificar las necesidades del organismo en consonancia con la nueva Ley de Contratos del Sector Público (LCSP) y con las recomendaciones de la ONA y la IGAE sobre control financiero. **Fechas**: primer trimestre 2021.

77. c. Implantar un sistema de archivo digital de los expedientes de contratación. **Fechas**: 2021.

LET 1

OE18. Mejorar las infraestructuras y equipamientos, y adaptar los protocolos de seguridad a las necesidades del organismo

78. Reformar el edificio de la **ENS** y de la **BNCS.**

78. a. Ampliar y **reformar** los pabellones 7 y 8. **Fechas**: 2021-2023.[11]

79. Elaborar y **aplicar** el **plan de urbanización del campus de Chamartín** para mejorar la seguridad, el control de acceso a las instalaciones y reducir impacto ambiental.

79. a. Realizar las actuaciones incluidas en los proyectos de urbanización del campus (tres fases), y las obras de infraestructura necesarias, incluyendo la renovación de instalaciones eléctricas y fibra general del campus. **Fechas**: 2021-2025.

80. Finalizar el plan de modernización del **campus de Majadahonda**.

80. a. Finalizar la urbanización del campus y obras programadas para la mejora del edificio 51. **Fechas**: 2021-2023.

80. b. Elaborar los **proyectos para la construcción de nuevas instalaciones** en el campus de Majadahonda (instalaciones según puntos 80 c, d, e). **Fechas**: 2021.

80. c. Realizar las obras para la puesta en marcha de del Centro Nacional de Investigación en Terapias Avanzadas (CNITA). **Fechas:** 2022-2024.

80. d. Realizar las obras para la puesta en marcha de un laboratorio de alta seguridad biológica (LSB-4) en el CNM. **Fechas:** 2022-2024.

80. e. Realizar las obras para la creación de una instalación centralizada para el Biobanco del ISCIII. **Fechas:** 2021-2024.

81. Renovar los grandes **equipos inventariables** de los centros propios ISCIII.

81. a. Definir el papel de la Comisión Intercentros del ISCIII en las recomendaciones sobre adquisición de grandes equipos: **Fechas**: 2021.

81. b. Diseñar la planificación de compras de grandes equipos. **Fechas** 2021-2025.

82. Modernizar los sistemas y **equipamientos informáticos** y **audiovisuales**.

82. a. Diseñar una estrategia de modernización de equipamientos asociada al Plan Director de TICs. **Fechas**: 2020-2025.

83. Desarrollar el **concepto de seguridad integral** por medio del trabajo multidisciplinar de toda la organización.

83. a. Impulsar el funcionamiento de la Comisión de Seguridad del ISCIII, creada en 2019, tras la reforma de la antigua Comisión de Seguridad Informática, planificando al menos 4 reuniones al año. **Fechas**: 2021-2025.

83. b. Renovar la política de seguridad del ISCIII y actualizar la política de privacidad. **Fechas**: enero 2021.

83. c. Elaborar un plan de protección de datos. **Fechas**: 2020-2021.

83. d. Establecer un protocolo de notificación de brechas en la seguridad de los datos personales. **Fechas**: 2020-2021.

83. e. Establecer procedimientos para garantizar la seguridad integral de las redes y sistemas de información. **Fechas** 2021-2022.

83. f. Elaborar planes de formación para todo el personal que trate con datos personales en el ISCIII. **Fechas**: 2021-2025.

83. g. Garantizar el cumplimiento de las medidas de protección exigidas de acuerdo a la designación del organismo como **Infraestructura Crítica del Estado**. **Fechas**: 2021-2025.

11 Se pretende que el centenario de la ENS, en 2024, pueda coincidir con la apertura de las nuevas instalaciones.

LET2. Orientación hacia la sociedad y Objetivos de Desarrollo Sostenible

OE19

Desarrollo de un Plan integrado de Comunicación y Cultura Científica orientado a la sociedad.

OE20

Impulsar el cumplimiento de los Objetivos de Desarrollo Sostenible.

LET2. Orientación hacia la sociedad y Objetivos de Desarrollo Sostenible

OE19. Desarrollo de un Plan integrado de Comunicación y Cultura Científica orientado a la sociedad

84. Mejorar los canales de comunicación: nueva **página web moderna y accesible**, orientada a los investigadores y a la ciudadanía, y despliegue de **redes sociales.**

84. a. Incluir mejoras operativas en la página web actual. **Fechas**: 2021.

84. b. Desarrollar una nueva página web (versión 2.0). **Fechas**: 2022.

85. Desplegar un **programa de contenidos digitales** con materiales divulgativos sobre la labor de la organización y sus investigadores.

85. a. Incorporar el programa como parte integral de la organización, dotándolo de los **recursos humanos y materiales suficientes y estables**: **Fechas**: 2021.

85. b. Incorporar a los trabajadores del ISCIII como colaboradores del programa. **Fechas**: 2021.

85. c. Reformar los programas de seminarios de los centros/escuelas/unidades del ISCIII para que sean difundidos e incorporen actividades divulgativas. **Fechas**: 2021-2022.

85. d. Evaluar su impacto en la sociedad. **Fechas**: 2023.

86. Reforzar la Unidad de Cultura Científica.

86. a. Incorporar a una persona con dedicación exclusiva y vincular su actividad con la unidad comunicación dependiente de la Unidad de Apoyo a la Dirección. **Fechas:** 2021.

86. b. Elaborar un plan de colaboración de los centros/escuelas/unidades del ISCIII con la unidad. **Fechas:** segundo semestre de 2021.

87. Elaborar e implementar una **estrategia global de marca e imagen corporativa,** que se extienda a centros/escuelas/unidades (logos, etc.).

87. a. Analizar la situación, a través de una evaluación externa. **Fechas**: segundo semestre de 2021.

87. b. Implementar medidas que consoliden la imagen de marca a nivel nacional e internacional. **Fechas**: segundo semestre de 2022-2024.

LET 2

OE20. Impulsar el cumplimiento de los Objetivos de Desarrollo Sostenible

88. Revisar y **actualizar** el **Plan de Igualdad del ISCIII** e incorporar en todos los ejes estratégicos la perspectiva de género y medidas para garantizar la **igualdad de género** y el empoderamiento de las mujeres y las niñas (ODS5).

88. a. Potenciar y **desarrollar** las actividades de la Unidad de Igualdad del ISCIII, y elaborar el nuevo **Plan de Igualdad**. **Fechas**: 2021.

88. b. Analizar los indicadores de la organización incorporando una perspectiva de género. **Fechas**: 2021-2025.

88. c. Creación de la **Unidad de Igualdad** o de **Mujer y Ciencia** del ISCIII, dentro de su diseño organizativo. **Fechas**: 2021.

89. Actualizar el Plan Integral de Gestión Ambiental del ISCIII incorporando elementos de sostenibilidad y resiliencia en el diseño de las infraestructuras, en la adquisición de bienes y servicios, y en el consumo de agua y energía (ODS9).

89. a. Reformar el Plan e **incluir** indicadores adecuados para su evaluación. **Fechas**: reformar el Plan en enero 2021 y evaluar en 2021-2025.

89. b. Registrar y reducir la huella de carbono. **Fechas**: 2021-2025.

89. c. Promover medidas para que los trabajadores utilicen más el transporte público. **Fechas:** análisis de situación en primer trimestre de 2021 y proponer medidas a los trabajadores y sindicatos en 2021-2022.

89. d. Analizar la posibilidad de implantar puntos de recarga para motocicletas y coches eléctricos en ambos campus del ISCIII. **Fechas**: 2021.

LET3. Transformación Digital

En esta línea estratégica se incluyen sólo las **acciones no recogidas en apartados anteriores.** Los EJES y LET descritos previamente contienen algunas acciones de renovación y transformación digital[12].

12 El Plan de Recuperación, Transformación y Resiliencia incluye como una de sus líneas directrices (eje transversal) la "España Digital", que implica la transformación digital, y como una de sus políticas palanca "Una Administración para el siglo xxi", basada en la digitalización de los servicios y del funcionamiento de la administración".

OE21

Elaborar un plan integral de transformación digital del ISCIII que permita modernizar las infraestructuras, el desarrollo de aplicaciones informáticas y la mejora de la atención al usuario.

LET3. Transformación Digital

OE21. Elaborar un plan integral de transformación digital del ISCIII que permita modernizar las infraestructuras, el desarrollo de aplicaciones informáticas y la mejora de la atención al usuario

90. Definir los **estándares tecnológicos** del ISCIII y elaborar un **plan de calidad.**

90. a. Describir los estándares. **Fechas**: primer trimestre 2021.

90. b. Elaborar y desplegar un plan de calidad propio de la UTIC con sus indicadores (Plan Director de TICs). **Fechas**: 2021.

90. c. Seleccionar los indicadores más relevantes para ser incluidos en el PEISCIII. **Fechas**: 2021-2022.

91. Impulsar la **orientación a servicios y procesos** en la UTIC y mejorar la atención a usuarios.

91. a. Elaborar un catálogo de servicios de la UTIC. **Fechas**: 2021.

91. b. Implantar la gestión por procesos en la UTIC. **Fechas**: 2021-2022.

91. c. Diseñar un plan de formación y de comunicación de la UTIC. **Fechas**: 2021.

91. d. Elaborar un plan para mejorar el desempeño del SAU. **Fechas:** 2021-2022.

92. Mejorar el procedimiento de compra, gestión y renovación de aplicaciones informáticas.

92. a. Revisar la cartera de aplicaciones disponibles en el ISCIII. **Fechas**: 2020-2021.

92. b. Diseñar los procedimientos para la compra y renovaciones de licencia de aplicaciones y difundirlos en la organización. **Fechas**: 2020-2021.

92. c. Modernizar la Intranet (Sirena), integrándose en el proceso de renovación de la página web (versión 2.0). **Fechas**: 2021.

93. Avanzar en la implantación de la **administración electrónica**.

93. a. Impulsar la utilización de registros tanto de entrada como de salida, portafirmas, expedientes electrónicos y procedimientos digitales en toda la organización. **Fechas**: 2020-2022.

93. b. Poner en marcha un archivo electrónico único para la gestión de documentos electrónicos. **Fechas**: 2021-2022.

93. c. Mejorar la gestión de las grandes **fuentes de datos** alojadas en el ISCIII, adaptándolas a los estándares internacionales, incluyendo datos de secuenciación genómica, datos sobre enfermedades de declaración obligatoria y otros registros ISCIII. **Fechas**: 2020-2025.

94. Renovar y modernizar los **recursos de hardware**.

94. a. Diseñar una estrategia de acuerdo con el Plan Director de TICs: **Fechas**: 2021-2025.

95. Renovar la **electrónica de red** y revisar la capacidad de la infraestructura de red.

95. a. Elaborar los expedientes correspondientes. **Fechas**: segundo semestre de 2021.

LET4. Internacionalización

OE22

Potenciar, priorizando iniciativas europeas, la internacionalización del ISCIII y de toda la investigación biomédica y sanitaria española.

OE23

Alineación europea e internacional con la programación de la investigación biomédica y sanitaria española.

LET4. Internacionalización

OE22. Potenciar, priorizando iniciativas europeas, la internacionalización del ISCIII y de toda la investigación biomédica y sanitaria española

96. Promocionar el Programa Marco **Horizonte Europa** (2021-2027) en el SNS.

96. a. Organizar jornadas de difusión cada dos años. **Fechas**: primeros trimestres de 2021, 2023 y 2025.

96. b. Fortalecer un marco estable de colaboración con las CCAA para promocionar la investigación e innovación internacional, mediante reuniones periódicas con los puntos de contacto para Horizonte Europa. **Fechas**: 10 reuniones semestrales entre 2021 y 2025.

96. c. Implicar al SNS en las nuevas iniciativas del Programa Marco, las Misiones y los Partenariados/Asociaciones, mediante la difusión de información, reuniones y jornadas específicas. **Fechas**: 2021.

96. d. Incluir la participación y especialmente la coordinación de proyectos Horizonte Europa entre los criterios de evaluación para que investigadores del SNS puedan acceder a determinadas ayudas ISCIII. **Fechas**: 2021-2025.

97. Fomentar la **participación** y en particular la **coordinación** de **proyectos** internacionales del personal investigador del ISCIII.

97. a. Establecer un punto de referencia en la SGPIIRI para cada centro del ISCIII y organizar una sesión específica anual sobre oportunidades de financiación. **Fechas**: marzo de 2021.

97. b. Elaborar un plan de mejora para aumentar otras colaboraciones internacionales, particularmente con Sudamérica y África. **Fechas**: segundo semestre 2021.

98. Mejorar la **asistencia técnica del ISCIII** a los investigadores del SNS en la elaboración y revisión de propuestas para proyectos internacionales de investigación.

98. a. Diseñar una estrategia de colaboración entre todas las estructuras implicadas, puntos focales e investigadores. **Fechas**: primer semestre 2021.

98. b. Evaluar el impacto de la estrategia. **Fechas**: 2023-2025.

99. Promover la internacionalización de los centros/escuelas/unidades del ISCIII.

99. a. Diseñar un plan de captación de talento para la incorporación de investigadores de nivel internacional en los centros/escuelas/unidades. **Fechas**: 2021-2025.

99. b. Promover la reincorporación de investigadores formados en el ISCIII tras su estancia en centros de excelencia internacionales. **Fechas**: 2021-2025.

LET 4

OE23. Alineación europea e internacional con la programación de la investigación biomédica y sanitaria española

100. Incrementar la alineación entre la financiación de la AES y las fuentes de **financiación europeas**, especialmente a través de los grandes partenariados o asociaciones y las respectivas convocatorias conjuntas europeas.

100. a. Introducción de nuevas medidas simplificadoras al amparo del RD 20/2020 para la concesión de subvenciones directas en los Proyectos de Programación Conjunta Internacional. **Fechas**: 2021.

100. b. Planificar medidas de coordinación entre la AES y los EJP, JPI, ERANETs y Partenariados (Asociaciones Horizonte Europa). **Fechas**: 2021-2025.

101. Alinear la estrategia con otras agencias financiadoras europeas en el seno de Science Europe.

101. a. Solicitud de ingreso en Science Europe y gestión de cuotas internacionales. Fechas: 2021.

101. b. Fomentar la participación activa en foros y reuniones internacionales asociadas a Science Europe. **Fechas:** 2022-2025.

102. Fomentar el **uso de las infraestructuras europeas de investigación del sector de la salud** en las que participa España y donde el ISCIII colabora en su gobernanza y/o financiación.

102. a. Impulsar el alineamiento con las estrategias y plataformas nacionales. **Fechas**: 2021-2025.

103. Promover la alineación de los objetivos de investigación de los centros/escuelas/unidades con los objetivos de las organizaciones internacionales referentes en salud pública (ECDC, OMS, etc.).

103. a. Analizar la situación actual y proponer priorizaciones a los centros/escuelas/unidades. **Fechas**: 2021-2025.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MDC MAX-DELBRÜCK-CENTRUM FÜR MOLEKULARE MEDIZIN IN DER HELMHOLTZ-GEMEINSCHAFT

OUR PATH TO A SUSTAINABLE MDC

Version:	9.0
Date:	19.08. 2021
Erstellt durch:	Michael Hinz

Change History

Date	Version	Change description
18.09.2020	1.0	First version
12.10. 2020	2.0	Feedback HG
08.11.2020	3.0	Feedback of different colleagues (administration and science)
04.01.2021	4.0	Feedback based on VC (23.11.2020) different colleagues (administration and science); discussion with HG
30.01. 2021	5.0	Feedback (Members of SC)
15.03. 2021	6.0	Presentation in SC (25.02.2021); Feedback
11.06. 2021	7.0	Integration of leadership project results; Innovation and agile organization; roadmap for a greenhouse gas neutral MDC; Feedback from leadership culture project
04.08. 2021	8.0	Feedback from discussion with the Board and other representatives of the administration
19.08. 2021	9.0	Approval of the Board of Directors

Table of contents

1. Sustainable development - the MDC's concept

The MDC is part of the Helmholtz Association of German Research Centers (HGF). With their research activities, the centers of the HGF aim to secure the basis of human life in the long term, to continuously improve living conditions and to preserve an intact environment for future generations.

Through its mission, the HGF is committed to the aims of the 2030 Agenda adopted by the United Nations in 2016, which defines 17 goals (Sustainable Development Goals, SDGs) for socially, economically and ecologically sustainable development (Fig. 1)[1] [2]. In breaking down the complex topic of sustainability, the HGF is guided by the handbook "Sustainability Management for Non-University Research Organizations" (LeNa)[3]. Through its commitment to sustainable development, the HGF calls on all centers to develop, actively implement and report on appropriate measures and goals.

At the MDC, we seek to understand the molecular basis of health and disease and translate our findings into clinical applications as quickly as possible. Through our research program "System-wide and Cardiovascular Diseases," we aim to better understand complex systemic disorders and develop new diagnostic, preventive and therapeutic approaches. In this way, we are making a very concrete contribution to the 2030 Agenda: *SDG 3 - Ensure healthy lives for all people at all ages and promote their well-being.*

Fig. 1: Agenda 2030 - 17 Sustainable Development Goals (1)

In addition, we particularly support the following goals in our day-to-day work:

- SDG 4 - Enable inclusive, equitable and quality education and lifelong learning
- SDG 5 - Achieve gender equality and empower all women and girls
- SDG 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- SDG 9 - Build resilient infrastructures, promote inclusive and sustainable industrialization, and support innovation
- SDG 12 - Ensure sustainable consumption and production patterns
- SDG 13 - Take urgent action to combat climate change and its impacts
- SDG 17 - Strengthen the implementation of and breathe new life into the Global Partnership for Sustainable Development

[1] https://www.helmholtz.de/ueber-uns/die-gemeinschaft/nachhaltigkeit/
[2] https://news.un.org/en/story/2015/09/509732-un-adopts-new-global-goals-charting-sustainable-development-people-and-planet
[3] https://www.nachhaltig-forschen.de/startseite/

We view sustainable development not only as a social obligation, but also as an opportunity to ensure the long-term success and attractiveness of MDC.

2. Where we want to go – the MDC's strategy

The MDC strives to achieve excellent results in research while fulfilling its responsibility towards the environment and society as well as its employees. The basis for successful work is a common understanding of leadership, which was defined in the Leadership Guideline 2021[4]. All employees are required to consider research activities, structures and processes in the context of the MDC, but also in relation to their impact on society and the environment. Sustainable action offers the opportunity to advance the organizational and technological development of the MDC and thus create a basis for scientific success.

In accordance with the HGF's commitment (see Chapter 1), **we are guided by the LeNa handbook and aim to develop the MDC sustainably in the following areas of action**:

- **Organizational development**
- **Research**
- **Personnel**
- **Building and infrastructures**
- **Support processes**

At the same time, we aim to make a meaningful contribution to climate protection. Following the recommendations of the German Advisory Council on the Environment,[5] we intend to make

- **work at the MDC greenhouse gas neutral by 2038.**

In Chapter 4, we present concrete goals and measures in the individual areas of action.

We aim to harmonize excellent research, sustainable development and greenhouse gas-neutral work in order to establish the MDC as a successful, attractive and responsible research center over the long term.

3. How we develop the MDC sustainably

The sustainable development of the MDC in the sense of the HGF's commitment (see Chapter 1) can only be successful if it is understood as a joint task (Fig. 2). Every employee is called upon to actively participate in contributing to positive change.

The **Board of Directors** is responsible for creating the best possible conditions for excellent research and in combination with developing the MDC in a sustainable way. It will ensure that the goals

[4] Approval by the Board of Directors; publication in November 2021

[5] https://www.umweltrat.de/SharedDocs/Downloads/DE/01_Umweltgutachten/2016_2020/2020_Umweltgutachten_Entschlossene_Umweltpolitik.html

described in Chapter 4 are integrated into a new, comprehensive strategy and anchored within the tasks, duties and responsibilities transferred to the leaders.

Leaders take on the tasks, duties and responsibilities delegated by the Board and ensure that staff act sustainably, for example by ensuring that resources are used sparingly. To support their task, they appoint sustainability ambassadors whopromote sustainable behavior in everyday work (e.g. separating and avoiding waste, saving energy, using recyclable products) and try to sensitize their colleagues accordingly.

All employees are encouraged to familiarize themselves with the goals and measures described here (chapter 4) and to act in a sustainable and responsible manner. New employees will receive an information sheet at the beginning of their contract which conveys the essential goals and expectations of this concept.

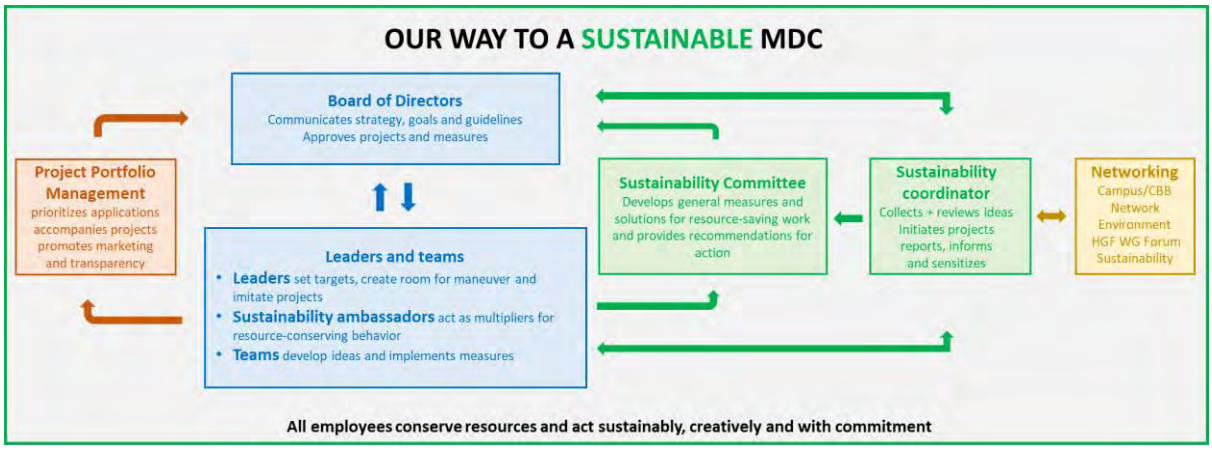

Fig2: How we develop the MDC sustainably

3.1 Sustainability Coordinator

To strengthen sustainable development, the MDC 2020 has established a staff position entitled "Coordinator for Sustainability". The main areas of responsibility are idea management, coordination and communication and reporting in the context of sustainability. The Coordinator maintains a close cooperative exchange with those responsible for each field of action. Externally, he/she represents the MDC in the HGF working group Forum Sustainability and other sustainability networks. A budget, which is determined annually with the Board of Directors, is provided for the fulfillment of the tasks.

Ideas management

The Sustainability Coordinator collects and reviews new ideas and clarifies whether they can be implemented in collaboration with specialists from individual departments. Another task is to regularly inform employees about new developments.

Communication and reporting

The Sustainability Coordinator is a member of various committees (Admin. Boards, Scientific Council, Project Planning Conference) and aims to ensure that the sustainable development goals described here are incorporated into decision-making processes. Another task is to establish the formats of events and organize campaigns with colleagues to sensitize the staff.

In order to make the sustainable development of the MDC visible, the Sustainability Coordinator will regularly prepare a sustainability report in accordance with the criteria of the German Sustainability Code (DNK)[6]. The departments will provide the necessary input. If the HGF establishes its own reporting standards, this will be applied in the future.

HGF Sustainability Forum Working Group / Network Activities

The Sustainability Coordinator represents the MDC in the HGF Sustainability Forum working group. This working group promotes exchange between the centers and contributes to the sustainable development of the Helmholtz community by organizing events, including the Helmholtz Sustainability Summits in Berlin (2019) and Hamburg (2021), by publishing the brochure "Helmholtz Sustainably Active", and providing input to the management of the HGF, in the development of the commitment to sustainability and other areas.

In addition, the Sustainability Coordinator will maintain networking activities at the local and regional levels (e.g. Network Environment) to integrate best practice examples and to achieve synergy effects wherever possible.

3.2 Project development and Project Portfolio Management

Administrative departments and scientific working groups are invited to develop proposals for projects that improve work processes and framework conditions at the MDC and contribute to sustainable development. Both complete proposals and preliminary outlines will be presented in the Project Planning Conference, which is composed of representatives from science and administration. The project planning conference evaluates applications with regard to their strategic and legal relevance and makes a recommendation to the board of directors. It also clarifies which resources are necessary to achieve the projects. The Board of Directors then makes a final decision based on these criteria. The operational Project Portfolio Management (PPM), which is organizationally a part of the administrative Executive Board, coordinates the process, defines binding standards for project management and supports and monitors the development of ongoing projects. If required, tailored practical training will be provided for project managers. In addition, the operational PPM provides information to employees to promote transparency and the marketing of ongoing projects.

[6] https://www.deutscher-nachhaltigkeitskodex.de/en-gb/

3.3 Sustainability Committee

The MDC is establishing a Sustainability Committee in which representatives from science and administration develop measures for the conservation of resources and, where possible, CO2-free work. The committee will propose recommendations for action to the Board of Directors. To optimize decision-making, the Sustainability Commission will be integrated into the new governance structure to be established at the MDC.

The goals and measures proposed in the following Chapter will serve as the basis for the commission's work. The focus is on the responsible use of existing resources, the effective use of space, intelligent energy-saving measures, sustainable concepts for purchasing, logistics and mobility, and forward-looking office and laboratory management. The commission consists of scientists, technical assistants and representatives from the departments of Purchasing & Logistics, IT, Communication, TFM-Operation and TFM-Construction and is headed by the Sustainability Coordinator.

4. Fields of action, goals and measures

As a part of becoming a sustainable research center, in recent years the MDC has initiated concrete measures in all LeNa fields of action and in the area of climate protection. To further advance the process of sustainable development, numerous goals and measures were proposed in 2020/21 in a dialog between the Board of Directors, the Sustainability Coordinator, and representatives from science and administration (4.1 - 4.6.).
In parallel, the project "Development and Establishment of an MDC Leadership Culture" was initiated in 2020 to establish a common understanding of leadership. As results, guidelines, a catalog of standard tools for leaders, and perspectives for the future attractiveness of the MDC were developed[7]. Since these topics overlap with the LeNa fields of action, some of the results were integrated into the present concept.
The following chapters summarize the established activities as well as the newly formulated goals and measures. Further sharpening of our goals as well as the concrete planning and development of associated measures (in the appendix) will take place in the Sustainability Commission (see 3.3) and in specific projects of the specialist departments.

4.1. Organizational development

Long-term scientific success requires a value-oriented and effective organizational and leadership culture that clearly defines roles and processes, creates opportunities for creativity, and encourages employees to be innovative.

[7] Publication of the project results is targeted for the fourth quarter of 2021.

Establishing a common understanding of leadership

The MDC published leadership guidelines in 2021 and defined a common understanding of leadership on the basis of six principles:

- Excellence requires leadership
- Leadership is performance
- Courage to innovate
- Promoting diversity and thinking diversely
- Trust through honesty and appreciation
- Assume responsibility and act responsibly

Like a compass, the leadership guidelines offer employees orientation in their daily interactions with each other and thus establishes a basis for successful cooperation. To support leaders in their tasks, standard leadership tools have been defined that are used and tracked at MDC. The Board of Directors communicates its expectations, ensures that they are implemented accordingly, and ensures that there are regular training opportunities for leadership skills.

Design organizational structures and decision-making processes in a participatory manner and communicate them in a transparent manner

Cooperation, openness, trust and recognition of the diversity of achievements in science and administration are core values for the MDC. The Board of Directors ensures that mutual understanding is strengthened by promoting exchange between science and administration and by establishing participatory governance that involves all leaders. It ensures that tasks, competencies and responsibilities, starting with the Board of Directors and extending to committees, functionaries, leaders and their employees are presented in a comprehensible manner in a function diagram.

To make the best possible use of the diverse strengths of the employees, representatives from the various MDC areas are involved in operational change and development processes (e.g., the development of new service agreements, and the planning of new construction and renovation projects). Employee surveys are used to identify needs for change. In the new MDC governance, formats are being developed for a regular exchange with representatives from science and administration, in which new perspectives are discussed and recommendations are made to the board.

The MDC attaches great importance to transparent communication and the creation of trust through an open feedback culture. Internally, the Board of Directors, the scientific divisions and the administrative departments regularly inform each other about new developments, goals and plans, e.g. in town hall meetings. Externally, the Board of Directors fulfills its accountability to the funding agencies and the Supervisory Board as well as the Scientific Advisory Board, pays attention to potential organizational risks and regularly prepares a risk report. Management Board reports are visibly supplemented with aspects of sustainability.

Communicate rules and guidelines and ensure compliance

To ensure respectful and fair treatment in everyday work, all MDC employees are required to comply with legal regulations and organization-specific standards of conduct (compliance). As an organization, we respect the basic principles of good and responsible corporate governance[8]. The Management Board ensures that all employees are well informed about applicable rules through the transparent communication of valid service agreements, guidelines and legal regulations. All employees are required to familiarize themselves with the applicable regulations and to act accordingly. Compliance with the rules is supported by positive reinforcement measures (nudging, incentivization). Any non-compliance with the rules is sanctioned by internally defined or legally prescribed measures.

4.2. Research

The MDC is committed to socially responsible research and strives to create a work environment that provides opportunities for innovation while allowing its employees to maintain a healthy work-life balance.

Adhering to good scientific practice

Mutual trust is the prerequisite for successful scientific work. The MDC ensures compliance with the rules of good scientific practice by publishing documents on ethical standards on the homepage[9] and by regularly carrying out qualification events for staff members. Everyone has the opportunity to report observed scientific misconduct to an ombudsperson in confidence. Sanctions regarding proven misconduct are carried out by the Board of Directors[10].

Sustainable use of research data - Open Science

At the MDC, research data is documented transparently to secure and further develop scientific findings and to make processes traceable. Scientists are encouraged to document experimental work using electronic laboratory notebooks and to handle data according to discipline-specific standards, from collection to publication and subsequent provision[11, 12].We support the "Berlin Declaration on Open Access to Scientific Knowledge"[13] and are committed to making the data generated at the MDC available to interested researchers, taking into account the interests of our employees and compliance with legal and ethical framework conditions. We support the international exchange of research materials by making plasmids, cell lines, etc. accessible via suitable platforms. In addition, the MDC encourages the publication of research software as open source and supports corresponding

[8] https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Press_Room/Publications/Brochures/principles-good-corporate-governance.html
[9] https://www.mdc-berlin.de/good-scientific-practice
[10] https://www.mdc-berlin.de/media/16006
[11] https://doi.org/10.2312/os.helmholtz.002
[12] https://www.go-fair.org/fair-principles/
[13] https://os.helmholtz.de/en/open-science-in-the-helmholtz-association/eng-open-access/berlin-declaration-on-open-access-to-knowledge-in-the-sciences-and-humanities/

recommendations of the HGF Open Science Working Group[14]. The newly established Research Data Management team develops guidelines for the structured storage of research data and helps scientists manage their data efficiently. To increase the quality, reproducibility, and utility of its research, the MDC provides a research data infrastructure that meets the latest technical and environmental standards.

Responsible research

Research tasks often require a holistic view. In addition to interdisciplinary or transdisciplinary approaches, ethical issues, an assessment of potential impact and questions of applicability must be taken into account. To prepare young scientists for the complexity of research processes, we teach competencies for responsible action. One example is our participation in the social dialogue concerning animal experimentation. The MDC has signed the "Basel Declaration on Animal Experimental Research,"[15] addresses ethical issues and communicates transparently about research activities. Our scientists and animal caretakers ensure the consistent implementation of the 3R principle[16]. To provide the most resource-efficient and fair use of the animal house, its capacities are regularly evaluated by the animal house commission.

Communicating and discussing scientific findings in an understandable way

The MDC communicates its research activities to target groups outside the scientific community and strives to position itself in societal debates in a fact-based and comprehensible manner. Our activities include dialogues with representatives from the domains of business and politics, the use of social media, participation in the "Long Night of Science" and the "Berlin Science Week," programs for teachers, and our support for the student laboratory "Gläsernes Labor" on the Campus Buch.

4.3. Human resources

The MDC fulfills its legal duty of care towards its employees, promotes their professional development and formulates goals for sustainable human resources strategies, management and development as well as for corporate culture. The relevant areas were merged in 2021 to form the department “People and Culture,” creating an agile organizational unit that develops innovative and sustainable concepts.

Protecting and promoting employee safety and health

With regard to the safety and health of employees, specific departments at the MDC ensure our compliance with statutory regulations and provide advice on health, occupational and fire safety and accident prevention. Through the delegation of duties and appropriate training measures, the Board of Directors ensures that leaders are aware of and act responsibly with regards to the legal regulations

[14] https://os.helmholtz.de/de/open-science-in-der-helmholtz-gemeinschaft/stakeholder-und-ihre-rollen/task-groups/task-group-forschungssoftware/empfehlungen-zur-implementierung-von-leit-und-richtlinien-zum-umgang-mit-forschungssoftware-an-den-helmholtz-zentren/

[15] https://de.basel-declaration.org/basel-declaration/

[16] https://www.mdc-berlin.de/research-animal-experiments-3r/3r-principles

on occupational health and safety. The MDC attempts to adapt working conditions to the needs of employees and strives to ensure a high level of performance and satisfaction. The center offers occupational integration and health management[17] as well as psychosocial counseling[18].

Ensuring equal opportunities, valuing diversity and promoting inclusion

The MDC values the diversity of its employees as an important resource for innovative research and sustainable organizational development. We respect aspects of diversity as defined in the General Equal Treatment Act (AGG)[19] and cultivate a corporate culture characterized by respect, fairness, appreciation and openness. Our claim is manifested by numerous measures, including bilingual communication, the Welcome & Family Office,[20] the "berufundfamilie" Audit[21], and published Guidelines against discrimination, mobbing and harassment at MDC[22]. To ensure gender equality, we are committed to the fair participation in committees and in leadership positions and formulate reliable targets and indicators in the equality plan[23]. Both the proportion of women (approx. 60% in science and administration, as of 2021) and the proportion of foreign female scientists (56.2%, as of 2021) show that diversity is well established at the MDC. Nevertheless, there is a need for development in some areas. We aim to further promote diversity in the administrative departments and increase the proportion of women in scientific leadership positions. To make our commitment to diversity visible, the MDC will sign the Diversity Charter[24].

The MDC strives to design framework conditions and modify existing structures accordingly so that each person in his/her individual diversity feel integrated from the very beginning. In particular, we want to promote the integration of people with disabilities and proactively consider their needs regarding participation in work processes.

Developing potential and promoting lifelong learning

Motivated, qualified and satisfied employees are the basis for productivity and excellence. In order to meet this demand and to remain internationally competitive, the MDC relies on long-term personnel planning and development, to establish appropriate measures for the entire career of employees (recruitment, on-boarding, qualification and development, off-boarding, alumni management). The personnel development guidelines, as drawn up through an interdisciplinary project, serve as the basis for the structured planning of personnel development[25]. The quality of the personnel development measures that have been implemented is regularly evaluated.

[17] http://www.campusvital.de/en/bgm_modellprojekt
[18] https://www.mdc-berlin.de/news/news/sometimes-it-helps-analyze-things-together
[19] https://www.gesetze-im-internet.de/agg/BJNR189710006.html
[20] https://www.mdc-berlin.de/welcome-center
[21] https://www.mdc-berlin.de/content/work-and-family
[22] https://www.mdc-berlin.de/media/34875
[23] https://www.mdc-berlin.de/media/33741
[24] https://www.charta-der-vielfalt.de/
[25] https://www.mdc-berlin.info/36093844/de/organisation/staff_development/personnel_development/Leitlinien_der_Personalentwicklung

We ensure that new employees feel welcome and provide them with the necessary orientation for processes at the MDC, with the help of training programs and other measures. We want to deploy employees in a strength-oriented manner, promote their potential and retain successful employees for as long as possible.

Leaders are encouraged to continue to pursue regular training in their leadership skills and are supported by standardized leadership tools (see also 4.1). Junior group leaders, junior team leaders and postdocs are supported in planning their next career steps through a career development plan with qualified mentoring programs and specific training (in areas such as technology transfer). PhD students are offered a clearly structured PhD program with documented project planning and regular evaluations by a committee. The scope of the PhD thesis is chosen so that it can be completed in four years. The training of specialists in research and administration is based on the MDC's own needs. The MDC strives to provide trainees with a permanent career option after successful completion of their programs. All employees are encouraged to develop professionally. Leaders support their commitment by addressing career perspectives in annual reviews and facilitating appropriate qualification measures.

Simplifying administrative processes and making them transparent

The MDC strives to organize administrative processes in a transparent and service-oriented manner. We use the possibilities of digitalization to establish smart working tools such as an E-Learning platform, electronic travel expense accounting and a cross-departmental document management system. In order to make mutual wishes and requirements understandable, the Board of Directors ensures a regular and constructive exchange between administration and science (e.g. through "Lunch and Learn" events).

4.4. Construction and infrastructure

When constructing, renovating and operating its buildings, MDC aims to harmonize functionality, user satisfaction, efficiency in energy and resources, cost-effectiveness and the quality of designs.

Designing and operating research buildings in a resource-efficient and sustainable manner

The MDC determines its needs for research space on the basis of a long-term scientific strategy. In order to minimize soil sealing and construction-related emissions (gray emissions), we will use existing space as effectively as possible and avoid new construction wherever possible. Building development planning is carried out in a participatory dialogue process that involves not only the relevant departments and the Board of Directors, but also the employees concerned and the Sustainability Coordinator. If new buildings are necessary, we are guided by the "Sustainable Building for Federal Buildings" (BNB) rating system and aim for a gold certificate[26]. In line with the new building energy

[26] https://www.bnb-nachhaltigesbauen.de/

law[27], in future construction projects and renovations, the MDC will invest in measures that reduce the energy consumption of buildings or permit independent CO2-free energy production (e.g. photovoltaics, ice storage and solar air absorbers, cold heat networks or hydrogen technology). In addition, we plan to take advantage of building greening in the future[28]. The MDC already produces about one-third of its own energy needs with the help of a high-efficiency cogeneration plant and the installation of solar panels. Certified green electricity is used for the remaining electricity requirements. Further heat supply is provided by a climate-friendly gas and steam turbine plant of the local energy supplier. The MDC is committed to achieving a climate-neutral building stock by 2038 through the increased use of renewable energy and the application of innovative technologies, and will seek to take advantage of available funding opportunities.

Creating spaces for creative collaboration and innovation

Communication is an important basis for innovation. The MDC provides an inspiring working atmosphere and creates spaces that promote interaction and communication between employees.* In addition to designing attractive offices and research laboratories, we create meeting places and spaces that are technically equipped so that they can be used for diverse purposes, e.g. for meetings, as a co-working spaces or flexible offices, for video conferencing or streaming lectures. In addition, as a contribution to occupational health management (see 4.3), we create opportunities for sports activities. The MDC strives to continuously develop its infrastructure and adapt it to new forms of communication and changing needs.

Monitoring energy consumption and identifying potential savings

The MDC is creating an energy management office with the tasks of monitoring and optimizing the consumption of resources (water, electricity, heating and ventilation), working with users to identify potential savings, and providing advice on the procurement of energy-intensive equipment. A standardized energy management system (ISO5001) is being established to continuously improve the energy efficiency of work processes at the MDC.

Bundling technology to accelerate research processes

To make efficient use of sophisticated analytical techniques and accelerate research processes, the MDC has established numerous technology platforms. These facilities provide standardized and scientifically exploratory technologies, conduct technology development and support research groups. In addition, we provide central funding to enable research groups to purchase strategically relevant large-scale equipment that can subsequently be used jointly. The application process is managed by an equipment committee.

[27] https://www.bmi.bund.de/DE/themen/bauen-wohnen/bauen/energieeffizientes-bauen-sanieren/energieausweise/gebaeudeenergiegesetz-node.html
[28] https://www.umweltbundesamt.de/bau-r-2-das-indikator#bau-r-2-dachbegrunung-von-bundesgebauden

Resource-efficient use of operating and research funds

The MDC aims to make all work processes resource-efficient and sustainable. Research groups are required to establish laboratory management systems that allow for anticipatory demand planning and efficient use of consumables. The MDC is optimizing its office communications technology, establishing equipment management for the central freezers and liquid hydrogen tanks, and creating opportunities to share existing technologies by inventorying laboratory equipment using Open Iris. The Equipment Committee manages a repair fund to fund costly repairs and the maintenance of laboratory equipment.

4.5. Supporting processes

In the future, the MDC will pursue the most environmentally friendly and socially responsible solutions when purchasing products and services and in relation to work-related mobility.

Considering social and ecological procurement criteria

When purchasing services and goods, the MDC pays attention to sustainable concepts for transport and logistics and uses all legal means to take into account social and environmental aspects in addition to simple economic efficiency when awarding contracts. The organization and implementation of central events is carried out in accordance with the standards proposed by the Federal Environment Agency[29]. All organizers of MDC events are encouraged to follow these guidelines as well.

Making mobility behavior low-emission

The MDC strives to reduce emissions caused by employees' mobility behavior. We strive to enable mobile working and subsidize job tickets for public transport within the scope of legal possibilities. By using a variety of sharing concepts (including rental bikes) and setting up charging stations for e-cars, we are contributing to low-emission individual transportation. Our employees are encouraged to use video conferencing to reduce the number of business trips and to make necessary business trips as environmentally friendly as possible. The MDC encourages the use of rail for trips of up to 6 hours. Air travel is only allowed in exceptional cases. The cost of a privately purchased BahnCard will be reimbursed as soon as the fare reductions for business trips reach the purchase price. In the future, we will compensate for the CO_2 footprints caused by air travel by voluntarily supporting climate protection projects. We are open to novel and sustainable mobility concepts and will take advantage of them wherever possible.

4.6. Making work at the MDC greenhouse gas neutral

The Federal Climate Protection Act [30]emphasizes the exemplary role of public institutions and obliges them to take climate protection goals into account in planning and decision-making. The MDC

[29] https://www.bmu.de/publikation/leitfaden-fuer-die-nachhaltige-organisation-von-veranstaltungen/
[30] https://www.bmu.de/gesetz/bundes-klimaschutzgesetz/

acknowledges its responsibility here. Together with the Sustainability Commission, the Board of Directors will establish a process that that targets the development of a greenhouse gas-neutral MDC. When goals conflict, we will solve them through appropriate compromises.

Guidance will be provided by guidelines published by the Federal Environmental Agency[31]. First, the sources of greenhouse gas emissions are recorded and balanced in accordance with the Greenhouse Gas Protocol[32]. A materiality analysis is used to quantitatively define areas that can be influenced. On this basis, ambitious and verifiable climate protection targets are set and implemented, taking into account cost minimization requirements. Remaining CO_2 emissions will be compensated for if budgetary authorization is available.

MDC employees will be continuously informed about the initiative and involved in the process wherever possible. In particular, they are called upon to contribute actively to achieving climate protection goals. Reporting is carried out in accordance with the Greenhouse Gas Protocol and is based on generally accepted standards. With the help of a climate protection audit, the MDC will review the functioning and adequacy of its greenhouse gas neutrality activities and identify opportunities for improvement. If necessary, the Board of Directors and the Sustainability Commission will take corrective action in order to achieve long-term climate protection goals and, in the medium term, to be able to act in a greenhouse gas-neutral manner even without compensation.

5. Concluding remarks

The sustainable development of the MDC can only be successful if employees actively contribute to its success. We expect our employees to behave honestly and considerately in their interactions with colleagues, to be responsible and forward-looking in their everyday work, with equipment and resources, and to avoid unnecessary energy consumption. Together, we want to make the process of sustainable development active and comprehensible and resolve any conflicts that arise in meeting these goals.

[31] https://www.umweltbundesamt.de/publikationen/der-weg-zur-treibhausgasneutralen-verwaltung
[32] https://ghgprotocol.org/corporate-standard