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FCT-Tenure | 1st Edition
2023.11076.TENURE.133

Status
Grant

Closes in
01.03.2024 17h00 GMT

Positions

Assistant Professor in Life Sciences – Cell and Molecular Biology, with emphasis in Evolutionary and Computational Biology; UCIBIO Chair

Research unit/Associate laboratory chair

Job category

Assistant professor

Hiring Institution

Universidade Nova de Lisboa

Additional host institution

Universidade Nova de Lisboa - Faculdade de Ciências e Tecnologia da Universidade Nova de Lisboa
Universidade Nova de Lisboa - Faculdade de Ciências e Tecnologia da Universidade Nova de Lisboa - Unidade de Ciências Biomoleculares Aplicadas - Lisboa
Instituto para a Saúde e a Bioeconomia

Call's publication date

April to June 2024

Scientific domain

Natural Sciences

Scientific area

Biological Sciences

Scientific sub-area

Evolutionary Biology

Field(s) description

Life Sciences – Cell and Molecular Biology, with emphasis in Evolutionary and Computational Biology

Position's alignment with SDGs of the United Nations 2030 Agenda

SDG Goal 3: Good Health and Well-Being
SDG Goal 4: Quality Education

Research unit/Associate laboratory chair

Name of the Host Research Unit/Associate Laboratory

Universidade Nova de Lisboa - Faculdade de Ciências e Tecnologia da Universidade Nova de Lisboa - Unidade de Ciências Biomoleculares Aplicadas - Lisboa

Commitment Declaration

Minuta_All_in_One_UCIBIO_23Fev24_signed.pdf

Obtained on 28-02-2024 at 18:17:13

Does it involve co-funding?

0%

Job description, scientific profile and rationale

Assistant Professor in Life Sciences - Cell and Molecular Biology, with emphasis on Evolutionary and Computational Biology

Job Description: We are seeking a highly qualified and motivated Assistant Professor in the field of Life Sciences, with emphasis on Evolutionary and Computational Biology, and focused on microbial evolution and multi-Omics analyses. The successful candidate will contribute to the advancement of our institution' strategic mission to pursue research and teaching excellence in the fast-growing field of biological big data analysis. Key responsibilities include:

1. Establish and lead an independent research program addressing key questions in Evolutionary Computational Biology, with an emphasis on using multi-Omics analyses to understand microbial evolution and adaptation.

2. Supervise graduate students and mentor undergraduate researchers in innovative research projects related to Evolutionary and Computational Biology.

3. Contribute to the academic community through the publication of research findings in reputable scientific journals.

4. Collaborate in interdisciplinary research teams within the University and foster external collaborations with strategic institutions, aimed at generating innovative outcomes with recognized impact and value.

Scientific Profile: The ideal candidate will possess the following qualifications and attributes:

1. Ph.D. in Life Sciences, Molecular Biology, or a related field, with a strong focus on Evolutionary and Computational Biology.

2. Proven expertise in conducting research projects in Evolutionary and Computational Biology and Microbial multi-Omics.

3. Demonstrated ability to secure external research funding or computational resources, and a strong publication record in reputable scientific journals (Q1), taking into consideration the candidate's role and the publication impact.

4. Experience in mentoring students and providing advanced training, as well as teaching undergraduate and graduate courses in Computational Biology and Evolutionary Omics, with a commitment to innovative pedagogical approaches.

5. Strong leadership and communication skills, and clear demonstration of interdisciplinary collaboration, able to bridge multiple fields in Biological Sciences.

6. Proven international and national peer recognition: awards from scientific societies, editorial and review activities in scientific journals, peer review activities (grants, awards), coordination or participation in program committees for scientific events, participation in academic (PhD and Master) juries, and other similar distinctions.

Rationale

The recruitment of an Assistant Professor in Life Sciences with emphasis in Evolutionary and Computational Biology aligns with the University' strategic goals of promoting excellence in research and education in specialized and interdisciplinary scientific subjects with international recognition. The emphasis on Computational Biology and Microbial multi-Omics analyses addresses the growing demand for advancements in biological big data analyses, particularly in their applications to healthcare, precision medicine, and drug discovery. The strategic integration of Omics technologies into R&D institutes and universities enhances research capabilities and fosters interdisciplinary collaboration, innovation, and the translation of scientific discoveries into real-world applications. This holds the potential to significantly impact human health, agriculture, environmental science, and global well-being.

Within UCIBIO, this position aligns perfectly with the aims of the "Biological & Biomolecular Interactions" thematic line (TL1) in addressing critical questions regarding infection and pathogenesis, the evolution of drug resistance, and adaptation in microbial populations. More specifically, the successful candidate will develop independent research that intersects two existing large research groups within TL1: the Molecular Microbiology & Genomics group (MMG) and the Theoretical & Computational Biosciences group (TCB). Hence, this recruitment reflects the institution's commitment to strengthening the current research thematic lines by attracting a new and key specialization in big data analyses in life sciences, which will address new research questions while promoting the institution multi-disciplinary research efforts.

Finally, the successful candidate will reinforce the faculty of the recently created MSc in Computational Biology and Bioinformatics at NOVA University, a joint initiative involving five NOVA Organic Units, creating new opportunities for mentoring and supervision of young researchers in a key scientific field that is rapidly growing and in higher demand.

Benefits and resources offered to the selected candidate

A comprehensive package of resources and benefits is provided to attract top-tier talent and the best-fitted researcher for the Assistant Professor position in Life Sciences with emphasis in Evolutionary and Computational Biology.

1. Access to state-of-the-art molecular and microbiology laboratory facilities, including to in-house Oxford nanopore sequencing technology. For high-performance computing the candidate has access to a local HPC cluster with and without GPU environment, and systems management support (DI-CLUSTER). These conditions provide a conducive environment for innovative research.

2. Research Unit UCIBIO & Associated Laboratory i4HB: Funding for travel to conferences or collaborative institutions is provided. A multidisciplinary and engaging research environment is promoted through UCIBIO & i4HB internal initiatives; collaborative projects/awards funding & in person meetings. Opportunities for career management & development, and scientific training courses are also offered. The extensive involvement in national & international infrastructures (e.g. MIRRI-ERIC/Instruct-ERIC/INCD/RNCA), the network of clinical, and academic partners, and the support provided by a dedicated science management team & IP/techtransfer office facilitate the researcher's integration and provide conditions for impactful research.

3) Life Sciences Dept NOVA-FCT/NOVA: We provide a stimulating experience for faculty members at every stage of their academic journey. Support to advanced pedagogical training and mentorship programs are available (e.g. NOVA Doctoral School). Well-equipped computer labs will strengthen the student's learning experience. The selected candidate will receive a salary corresponding to the level of Assistant professor in the academic career, as foreseen in the Portuguese Law. The social and health benefits offered include the possibility of adhering to a comprehensive health package at low cost.

Context, expected impact, and relevance of the scientific profile

The scientific profile for the proposed Assistant Professor position in Life Sciences with emphasis in Evolutionary and Computational Biology, and leadership in Microbial multi-Omics research, carries significant context, anticipated impact, and relevance across various fronts. The alignment is in accordance with the scientific strategies of the affiliated entities associated with this position.

i. NOVA University: The scientific profile directly contributes to the fulfillment of the hiring institution's strategic goals in advancing research and teaching excellence within the framework of a specialized and interdisciplinary research agenda. Particularly, it will contribute to boost NOVA's role at the forefront of technological innovation in the intersection of life sciences and medical research. The Professor will contribute to NOVA's priority research areas of (re)emerging infections, diagnostic innovation, and precision public health.

ii. UCIBIO/i4HB: The Professor will catalyze new collaborations within the context of the Research Unit and the Associated Laboratory alike. The emphasis in evolutionary analyses of Microbial multi-Omics aligns perfectly within the "Human health and environmental safety" thematic line (TL) of i4HB, and the "Biological & Biomolecular Interactions" TL of UCIBIO. Both TL aim to address critical questions regarding infection and pathogenesis, the evolution of antimicrobial resistance, and adaptation of microbial populations within the context of One Health applications. Expertise in biological big data analysis and specialized skills in bioinformatics and artificial intelligence (AI), as in the application of machine learning models to integrate multi-Omics with clinical data, are currently required skills. The Assistant Professor will foster these research topics by promoting internal multidisciplinary collaborations that will reinforce the UCIBIO/i4HB as hubs for cutting-edge research. As such, this recruitment reflects the institution's commitment to strengthening the current research thematic lines by attracting a new, key, and currently indispensable, specialization in big data analyses for life sciences.

iii. NOVA-FCT/DCV: This position will contribute to widen the current faculty's scientific scope. The emphasis on Evolutionary Computational Biology and Microbial multi-omics reinforces the current strengths in Molecular Biology, Microbiology, and Bioinformatics while bringing new expertise in big data analysis that includes expertise in AI, machine learning, and evolutionary models. The successful candidate will actively contribute to the department's mentoring/supervision activities, particularly the recently created MSc in Computational Biology and Bioinformatics (MCBBI) and the ongoing MSc in Medical Microbiology. These are opportunities to integrate research findings into educational programs promoting the dissemination of knowledge and the development of the next generation of scientists.

Institutions information

Hiring institution

Universidade Nova de Lisboa

Profile of the research staff of the hiring institution

Description	Number
Total number of integrated PhD holders, with a fulltime permanent contract as a researcher (ECIC or equivalent), associated with the Institution on 30/11/2023	16
Total number of integrated PhD holders, with a fulltime permanent contract as a professor (ECDU, ECPDESP or equivalent), associated with the Institution on 30/11/2023	420
Total number of PhD holders, with non-permanent fulltime research contracts (“Norma Transitória”, non-permanent “FCT-CEEC”, “Bolsas inv. pós-doutoral”, etc.) associated with the Institution on 30/11/2023	114

Scientific, hiring plan and hosting conditions

Description of the Hiring Institution

NOVA University Lisbon (NOVA) is a public Higher Education Institution whose mission is to serve society through knowledge & education, locally and globally, by developing teaching & research of excellence that create significant social & economic value. The fulfilment of its triple mission - Teaching, Research and Value Creation – requires (i) an academic environment that embraces equality, inclusion and free thinking to attract the best students from different cultural backgrounds and into the most diverse fields of knowledge, enabling them to discover their potential and develop their individual talent, (ii) high-quality teaching with a strong international setting in all cycles of studies, student-centered and closely linked with cutting-edge research, delivered by leading academics who are able to provide students with the necessary skills and knowledge to successfully develop a career anywhere in the world; (iii) a collaborative research within the University and with highly specialized and interdisciplinary strategic partner institutions of international relevance, aimed at creating innovative and impactful results to address complex challenges; and (iv) a knowledge-based & high-impact value creation activity, developed in collaboration with society & the economy, which promotes sustainable development at the economic, technological, cultural, social and health levels.

NOVA comprises 9 Schools across the Great Lisbon Area: 6 Faculties (NOVA School of Science & Technology - NOVA FCT; NOVA School of Social Sciences and Humanities – NOVA FCSH; NOVA School of Business and Economics – NOVA SBE; NOVA Medical School - NMS; NOVA School of Law - NSL; NOVA Information Management School – NOVA IMS), 2 Institutes (Institute of Hygiene and Tropical Medicine - IHMT; Chemical and Biological Technology Institute – ITQB) and the NOVA National School of Public Health – ENSP. It offers several degrees (BSc, MSc, PhD) and postgraduate courses. There are over 25.000 students at NOVA, and 2.771 academics & researchers of which nearly half are women.

Research at NOVA is thriving qualitatively and quantitatively, hosting 39 R&D Units, 92% of which are classified as Excellence or Very Good by international panels, positioning NOVA among the top 3 national universities with international acclaim. Twenty-three of these R&D Units are partnerships with other national institutions. Interdisciplinary research is also part of NOVA’s strategy, reflected in its 5 interdisciplinary platforms and the recent launch of NOVA Interdisciplinary Research Communities. R&D revenues grew by 60% from 2018 to 2022, totalling over 56.5M€.

Published research demonstrates a significant impact, with the normalized impact of Scopus publications in 2021 surpassing the world average by 26%. In 2022, NOVA published 3411 indexed publications (in *Scopus* and *Web of Science)*, 49.7% involving international collaboration, and 12.9% ranking within the top 10% of the most cited globally. NOVA stands out globally for its proportion of publications by female authors (34th worldwide).

Inclusiveness, non-discrimination and equality are central to NOVA's Strategic Plan 2020-2030 (SP) and the Gender Equality Plan, aligned with the Sustainable Development Goals (SDGs) of the UN 2030 Agenda. Particularly, NOVA develops initiatives & missions with positive impact on society in the areas of Health & Well-being (SDG3), Equal Rights & Opportunities (SDG5), Renewable & Affordable Energy (SDG7), Industry, Innovation & Infrastructures (SDG9), Inequality Reduction (SDG10), Promotion of Sustainable Cities & Communities (SDG11), Climate Change (SDG13), Life Below Water (SDG14), among others.

NOVA actively contributes to 10 Associated Laboratories (LAs), funded with 11.5M€ in 2022, and leads coordination in 3, hence with a prominent role in shaping national policies to address societal challenges, fostering researchers' careers, attracting talent, and conducting interdisciplinary research of excellence. NOVA is also actively involved in 15 Research Infrastructures (RI), coordinating 5 of them. Eighty percent of these RI are

integrated into international networks, including 5 as part of the European Strategic Forum for Research Infrastructure roadmap and 7 as members of the European Research Infrastructure Consortium.

In terms of funding, as happened in the H2020 program, NOVA stands out as the leading Portuguese University in securing Horizon Europe (HE) Research Funding (per capita): 68.80M€ across 119 projects until December 2023, including 37 (almost 1/3) as project coordinator. NOVA's researchers have been awarded 34 grants totalling 42.8M€ since the launch of the European Research Council (ERC) Grants programme, consolidating NOVA's position as the Portuguese university with the best ratio of ERC grantees per total number of R&D personnel. NOVA proudly stands as the first Portuguese university to receive an ERC Synergy grant in Humanities and an ERC Starting grant in Economics, underscoring its outstanding achievements, and reinforcing the importance of its strategic pillars. In 2022 alone, NOVA won 168 R&D projects, with a combined total value of 75M€, and had more than 500+ ongoing R&D projects, representing a financial envelope of 180M€. Notably, in 2023 the European Commission (EC) and the Portuguese Government granted 33M€ to establish the NOVA Institute for Medical Systems Biology (NIMSB), a pioneering centre of excellence focused on applying emerging biomedical and digital technologies in healthcare.

The participation in 19 Projects from the Business Innovation (C5) component of the Portuguese Recovery & Resilience Plan (32.8M€), as well as in 12 Collaborative Laboratories (CoLabs) reflects NOVA's commitment to promoting knowledge-based, high-impact value creation activities through collaborations with society and industry. This is emphasized by the NOVA Technology Transfer and Impact offices that provide specialized support for knowledge transfer & valorisation (KTV), entrepreneurship training, and partnership opportunities for impact-driven projects and initiatives. NOVA's technologies, specialized services & entrepreneurship initiatives are showcased in the NOVA Innovation portal (novainnovation.unl.pt), enabling the NOVA community & external partners to access information on activities related to the University's third mission. As of 2023, NOVA boasts +270 active patents, +125 start-ups & spin-offs, +600 active protocols & agreements with companies and non-academic institutions and has provided entrepreneurship training to over 20.000 students since 2015. In 2022 NOVA was recognized as the Young Entrepreneurial University of the Year by the Accreditation for Entrepreneurial and Engaged Universities, and as the Portuguese University with the most entrepreneurial students/alumni by Startup Portugal, accounting for a total of 268 startup founders.

NOVA's research performance has been recognized by prominent international rankings, leading to its inclusion in esteemed networks such as the Young European Research Universities Network (YERUN) and the EUTOPIA European University Alliance. As part of EUTOPIA, NOVA joins a connected & inclusive community of universities sharing common values & agendas. Through collaborative research, challenge-based learning, enhanced mobility opportunities, and shared innovation, EUTOPIA aims to address local & global challenges, contributing to a new model for higher education in Europe. EUTOPIA provides ample opportunities for all staff at NOVA, fostering a dynamic and enriching environment.

In summary, NOVA is a dynamic institution committed to excellence in education, research, and societal impact, with a strong focus on inclusiveness, interdisciplinary collaboration and global engagement.

Strategy to stabilizing careers and attracting and retaining talent of the Hiring Institution

Reforms in research careers and research assessment are key priorities at NOVA. As an early signatory to the Agreement on Reforming Research Assessment, a member of the Coalition for Advancing Research Assessment (CoARA), and the SECURE (Sustainable Careers for Research Empowerment) project, NOVA is fully committed to improving research careers and mitigating precarity. Establishing a stable workforce with transparent policies for career entry, advancement, and fair promotions is crucial for attracting & retaining talent. Therefore, it is a priority to decrease the percentage of researchers with precarious contracts, decrease the average age when entering Teaching or Research (T&R) careers, increase career opportunities for young researchers, and implement transparent & fair systems for promotion & recognition of merit. These priorities are aligned with the recent recommendations of the EC and the guidelines of the European Charter & Code for Researchers (ECCR).

To date, NOVA employs 509 individuals holding Ph.D. under full-time fixed-term contracts, categorized into Teaching (40) and Research (469), in addition to 40 individuals with post-doctoral fellowships, all together regarded as precarious contracts. Additionally, NOVA comprises 883 Professors (tenure/tenure-track) and 67 Researchers with full-time permanent contracts. This indicates that 35% of all Ph.D. holders exclusively dedicated to T&R at NOVA are employed under fixed-term contracts, not very distant from what the European Framework foresees as the maximum (1/3). However, there is a significant discrepancy between Research and Teaching careers.

The average age of an Assistant Professor at NOVA at the beginning of the contract is 39,9 years old, while for an Assistant Researcher, it is 42,3. Renewing staff and decreasing the average age at the entrance of each T&R category is therefore a crucial part of NOVA's Hiring Plan (hereafter referred to as HP). The University aims to have at least 40% of full-time researchers with permanent contracts by 2028 and above 65% by 2035, along with reducing the average age of permanent researchers by at least 10% by 2035. Given the good indicators for the teaching career, we do not anticipate changes in the % of full-time Professors under permanent contracts, but we do aim to decrease the average age at the entry of each Teaching category by 10% by 2035.

To attain these objectives, NOVA has recently introduced and will continue to implement innovative HR policies aligned with the CoARA principles. These include advocating for merit-based advancements and awards, alongside holistic evaluation systems for each T&R career level, monitored through its established Quality Assurance System. The system has two main governing bodies: the Vice-Rectory for Research and Innovation and the Strategic Research Council (CEI), which gathers representatives of the Direction of all Organic Units (OU), which, in turn, coordinate research activities developed at the R&D Units level.

Particularly, NOVA has recently revised both **Reg. for the Evaluation of Researchers' Performance** (6757/2023) and the **Reg. for Additional Incentives for Researchers**, to align with leading international standards and CoARA. NOVA's policy seeks to accommodate various research profiles and acknowledge the diverse outputs, practices & activities that enhance the quality & impact of research. Now, the triennial performance assessment for T&R staff comprises teaching, R&I, impact and knowledge valorisation, administrative tasks & community engagement, with qualitative and quantitative indicators informing the evaluation process. NOVA's **Reg. for the Provision of Teaching Service** (8178/2021) allows Professors to assume a predominantly Research profile (comprising R&D&I activities, academic administration, and management), with a Teaching load ranging between 2-4.5 hours per week/semester, in line with the eligibility criteria of *FCT Tenure*. The forthcoming **Reg. for Additional Incentives** will recognize exceptional research merit through additional remuneration, strengthening talent retention and attraction at NOVA, while the **Pedagogical Innovation Prize** (Reg.129/2021) aims to spotlight innovative teaching practices significantly impacting courses across diverse scientific fields. Furthermore, NOVA has implemented a new **Reg. for Individual Research Fellowships** (9484/2023) seeking to improve stipends compared to the national standards to attract outstanding young researchers. Upcoming initiatives for 2024 include the development of new **Regs. for Research careers** and **Science Management careers**, in line with ERA Action 17. Today, research support structures are an indispensable asset for attracting and retaining researchers, contributing to enhancing research impact, and NOVA also aims to strengthen its science management teams. The creation of a **Career Development Support Unit**, the development of a **strategic plan for attracting talent,** and the establishment of **flagship international Ph.D. programs** in strategic areas, modelled after some current programs funded by FCT are also envisioned. The application for the HR Excellence in Research Award via the HRS4R assessment process will start in 2024 and will be instrumental in fostering attractiveness to researchers.

Our T&R community has access to a wide range of infrastructures, facilities, and equipment through NOVA's R&D Units. Our commitment to offering state-of-the-art facilities and resources is fundamental to attract and retain talent but also to foster a culture of excellence and creativity. By equipping our academic community with the tools and support they need, we aim to facilitate groundbreaking discoveries and the development of solutions to complex challenges. Our R&D units serve as the backbone of this endeavor, offering a collaborative and dynamic setting where interdisciplinary collaboration flourishes.

FCT Tenure program

Identifying areas at risk of losing critical mass due to the conclusion of fixed-term contracts & retirements, as well as pinpointing emerging research domains, was crucial in shaping the HP. For the *FCT Tenure* program, NOVA will propose a total of 263 profiles (122 Teaching/141 Research), in research areas of strategic importance to its R&D ecosystem, fully aligned with the needs of the different Schools and R&D Units. Notably, by securing 141 Research profiles, NOVA will increase by 300% the total number of PhD holders with a full-time permanent contract as a researcher. Moreover, the anticipated loss of critical mass due to projected retirements, which could exceed 166 Professors until 2028 (2024: 47; 2025: 28; 2026: 25; 2027: 30; 2028: 36), and 7 Researchers (2025: 2; 2026: 1; 2027: 3; 2028: 1) needs to be urgently addressed. The FCT-Tenure program will allow to anticipate the hiring of staff to replace those to be retired ensuring a smooth transition and strengthening the alignment of teaching with research strategies. Many current precarious researchers possess suitable profiles and experience to qualify for positions in areas expected to see retirements, so the renewal of teaching staff will also contribute to improving the number of Professors with research profiles, strengthening the links between T&R. Teaching linked to research, and emphasizing scientific excellence is crucial to adapting to new paradigms and unique offerings, where the teaching-researcher profile is highly valuable.

The candidates to be recruited will contribute not only to reinforcing areas of excellence but also to consolidating or set up new strategic and emerging interdisciplinary areas in the different NOVA Schools, contributing to building new bridges and synergies between the different Schools. The strategic hiring plan will significantly bolster our dominance in the realm of **flagship areas** that include **Social Sciences and Humanities** (spanning from Management/Economics, History, Philosophy, Arts, Linguistics or Communication); **Health and Life Sciences** (including but not limited to Public and Global Health, Cancer Research, Biomedical Sciences, Nutrition, Metabolism, Neurologic Disorders or Health Promotion) or **Engineering & Technology** (Energy, Industry 4.0, Materials Sciences, Digital Technology, Mathematics, Electronics or Nanotechnology). Scientific areas like Macroeconomics, Law and the Blue/Green Economy, Vector-borne diseases or Molecular epidemiology will be consolidated through the reinforcement of dedicated T&R staff. The investment in emerging areas such as Data Science and AI applied to Health, Environmental and Sustainability research, or Precision Medicine is also noteworthy, underscoring our commitment to the development of interdisciplinary research.

The involvement of R&D Units/LAs will be pivotal in effectively contributing to research excellence, as all profiles will be integrated into R&D Units or LAs, benefiting from access to additional funding and support structures very important for their career development and progression.

By exploiting the University's wide-ranging partnerships with non-academic (NA) entities, 2 NA Chairs will strengthen NOVA's permanent staff, reinforcing the collaboration with external partners. NOVA HR guidelines are universally defined but Schools will establish their recruitment calls, taking into consideration the ECCR principles. All host entities will conduct transparent & rigorous selection processes, seeking individuals with exceptional talent & scientific impact potential. Internal governance procedures will ensure proper implementation of the HP, facilitated by close interaction between the CEI and the School's directive boards and pedagogical/scientific councils.

Importantly, effective knowledge transfer, valorisation (KTV) & outreach strategies are pivotal in amplifying the impact of the proposed T&R positions, ensuring that insights and innovations reach broader audiences and contribute to societal advancement. KTV serves as a vital link between academia & society, fostering innovation and development. The coordination of KTV and entrepreneurship support is centralized within a network that encompasses the Rectorate and 3 offices (IRIS-FCT, InnoValue NMS & ITQB Innovation Unit), ensuring proximity to the T&R community for optimal impact. NOVA fosters an entrepreneurial culture and facilitates the establishment of spin-off companies (Reg.157/2018) rooted in research discoveries & academic expertise. This initiative encourages the protection and valorisation of IP rights to enhance competitiveness, as outlined in **NOVA Intellectual Property Regulation** (1104/2020). **NOVA's outreach strategy** actively engages society & stakeholders through various channels, in local & national R&I networks. The **NOVA Impact Unit** connects NOVA with businesses & social sectors, CoLabs and Acceleration parks, fostering

KTV & social innovation, and facilitating joint research projects. NOVA also collaborates with the municipalities where it is located, contributing to community development and citizen-science initiatives. Public events available to all T&R staff as the **NOVA Science & Innovation Day** and the annual magazine, **NOVA Science**, showcase R&I to the broader community. Additional support schemes and initiatives are detailed in section 1.5.

With its HP, NOVA will prioritize the rejuvenation of its T&R staff while fostering teaching, research, and internationalization efforts. It emphasizes smart specialization in areas of distinction and conducts specialized, impact-driven, interdisciplinary research with global recognition, aligned with European & global agendas, significantly contributing to the nation's social & economic advancement. The efficient execution of this HP will allow NOVA to accomplish its Research agenda for the next decade, aiming to achieve at least a **10% increase in research activity**, and a minimum **20% growth in interdisciplinary research** focused on societal challenges, besides several other qualitative indicators.

Hosting Conditions of the Hiring Institution

Aligned with European guidelines, NOVA presently offers a comprehensive set of benefits & resources, with ongoing plans for enhancement, aimed at fostering better conditions for new hires and retaining existing talent, making it more appealing as a workplace. It includes a **regular evaluation process** & **career progression**; a **competitive salary package** (with **health benefits**) defined by national law and internal Regs for T&R careers, reflecting the profile's qualifications & experience as fair compensation for scientific excellence; and a **research funding package** to support the research work at NOVA (consumables, equipment, travel, publications, etc). NOVA also boasts **state-of-the-art infrastructures** recognized in the National European Roadmaps, supported by increased investment and managed by highly qualified staff, offering researchers exceptional resources and facilities to assist groundbreaking discoveries and foster innovation. This approach underscores our belief that access to high-quality research infrastructures, databases and equipment is critical to stimulating scientific inquiry and progress.

NOVA also promotes **incentive policies and merit recognition initiatives** to T&R staff, as described in the previous section. Furthermore, the **Reg. for the Provision of Teaching Service** (8178/2021) enables Professors at NOVA to adopt a research-oriented profile, resulting in a reduced teaching load conducive to R&D&I activities. This approach also benefits NOVA by integrating cutting-edge research in specific fields into corresponding teaching modules, hence providing the students with access to advanced knowledge to impact society positively.

Moreover, the T&R staff has both centralised (Rectorate) and decentralised (each School) **support structures**. The Rectorate has an R&I Support Directorate (DAII) responsible for promoting transversal activities, in close articulation with the units of each School. Support structures and activities at NOVA are professionalized and have highly experienced research management support in the areas of:

a. Funding, impact & project management – each School provides support to the T&R staff in securing competitive funding, creating impact with their research, and ensuring efficient implementation through optimised financial & administrative management of projects.
b. Infrastructure management – Schools provide the tools & support needed, aiming to facilitate groundbreaking discoveries and the development of innovative solutions (CryoEM, Microscope & Animal Facilities, Mass spectrometry and NMR, Social Science Datalab; CHAIN Biobank).
c. Innovation, Knowledge Transfer and Entrepreneurship – the Rectorate, through NOVA Impact, in articulation with specialized units in the different Schools provide a comprehensive set of activities throughout the innovation and knowledge valorisation value chain, including the protection and commercialization of research results; entrepreneurship training for the academic community; support to the creation of new spin-off companies, and liaison with industry or other societal organizations;
d. Science communication (SC) & outreach (NOVA FCSH has a master course on SC; ITQB develops numerous outreach activities/science fairs);
e. Scientific information management (PURE platform & NOVA Research Portal).
f. HR recruitment & career management.
g. Community services, internationalization & mobility opportunities.

NOVA also has Teaching & Mentorship support offices to leverage teaching activities, including access to pedagogical training, advanced teaching technologies & mentoring programs (NOVAFORMA, Talent@NOVA, NOVA doctoral School, etc).

In addition, NOVA provides **transversal initiatives** to both T&R as:

- Systematic training in the **new European impact metrics**, in line with NOVA's participation in the SECURE and OPUS projects - recent examples: the Research Impact Narratives Challenge and a webinar about Narrative CVs (>350 participants).
- ERC grant applications support (1:1 coaching/bootcamps).
- Preparation for European projects (Fit4Funding® program developed at NOVA).
- Entrepreneurship & Knowledge Valorisation activities (initiatives available at novainnovation.unl.pt) - T&R staff can engage as participants or mentors in entrepreneurship and innovation programmes.

Within NOVA's R&D ecosystem, a dynamic **interdisciplinary research environment** thrives. Events held throughout the year facilitate institutional networking and potentiate partnerships; e.g. **NOVA Science & Innovation Day 2023** showcased research work and innovations in all research areas, engaging 300+ participants. This annual event boosts scientific visibility while fostering cross-cutting collaboration, aligned with the 2030 Agenda. NOVA also offers T&R staff engagement opportunities through **5 Interdisciplinary Platforms** and the recent **NIRC on Sustainable Energy Systems**, in partnership with Galp, fostering synergies among researchers from diverse Schools and backgrounds. Within this framework, T&R staff will have the opportunity to cultivate collaborative projects and seek support through **seed-funding programs** for innovative & PoC ideas. Underway is the creation of an additional NIRC focused on addressing challenges related to the Oceans.

Furthermore, as part of the **YERUN and EUTOPIA alliances**, NOVA engages in beneficial activities for T&R staff, including doctoral cotutelle studies, the Young Leaders Academy for networking & leadership development for young T&R, and the Research Connected Communities model for interdisciplinary projects addressing global challenges.

NOVA's initiatives to improve work-life & gender balance, inclusiveness, and parenthood conditions in T&R careers reflect the University's dedication to creating an atmosphere that values diversity and promotes equal opportunities. Some of the current initiatives include:

- The establishment of the **Office of Gender Equality & Inclusion**, and the creation of the **NOVA's Denunciations Portal**.

- Implementation of **transparent, supportive & internationally comparable recruitment procedures**, tailored to the type of positions advertised.
- Promotion of **inclusive hiring practices** to foster gender balance, inclusiveness & equity in all Schools and R&D Units/LAs.
- **Introduction of gender equity**, including mentorship initiatives and efforts to address the gender pay gap.
- Implementation of a **transparent evaluation system** aligned with CoARA principles.

Concerning **work-life balance**, NOVA provides flexible work arrangements to accommodate the needs of its T&R staff. To ensure the **balance between T&R duties** for new researchers hired in teaching careers, the Pedagogical/Scientific Councils of the Schools will proactively implement measures to achieve optimal equilibrium between T&R responsibilities. Annual teaching allocations, to both T&R profiles will be ensured by the adherence to legal teaching workload limits for researchers, but also professors with a research profile (Reg. 8176/2021). Some Schools already have internal hiring procedures for teaching positions which include reduced teaching loads with no management or administrative duties, ensuring focus on research. If individuals find the balance between their T&R duties inappropriate, they will be encouraged to report their concerns through the internal governance structures of their Schools or via the NOVA's Denunciations Portal.

NOVA has recently consolidated its **family-friendly policies** for all staff, such as parental leave support, on-site childcare facilities in the Caparica campus, resources for new parents to facilitate a smoother transition back to work, and ateliers organized with children's activities open to the entire NOVA Community during school holidays. NOVA also offers its staff **counselling** services and well-being workshops, **sports and leisure activities**, as well as supports a set of initiatives that contribute to its cultural richness and promote human development through **volunteer** experiences to enhance social and community awareness (SASNOVA).

Aligned with European recommendations, NOVA will soon expand its initiatives by establishing a centralized **Career Development Support Unit**, to nurture personal & professional growth of our T&R staff. It will offer resources designed to help them align their interests with professional opportunities, both within academic & NA realms – i.e. comprehensive mentorship & training programs encompassing both scientifically based & soft-skills oriented approaches, as well as pathways for intersectoral mobility; opportunities to facilitate international experiences & collaborations, enhancing T&R staff's career prospects, visibility & competitiveness for funding or awards.

In addition, each T&R position will also enjoy specific conditions from the Schools or R&D Units/LAs, as delineated in the requested profiles. The role of the various host entities within NOVA's ecosystem aligns with the University's research strategy and is crucial for the success of the HP. NOVA has considered the needs of the R&D Units/LAs in the design of its HP, both in terms of renewing T&R staff to strengthen key research areas as well as fostering planned growth in new research areas. As so, this involves the cofinancing & sharing responsibilities to recruit PhD holders in T&R careers within the FCT Tenure program, as ALL T&R hired members will be integrated within the R&D Units/LAs at NOVA. The strategic alignment with R&D Units is instrumental as they provide additional funds for research, access to specialized equipment, infrastructures and national and international research networks crucial for the development of researchers' careers.

Overall, the distinctive hosting conditions within NOVA and its R&D ecosystem play a crucial role in providing optimal conditions for new hires and retaining existing talent, rendering it highly attractive as a workplace.

Additional Host Institutions

Universidade Nova de Lisboa - Faculdade de Ciências e Tecnologia da Universidade Nova de Lisboa

Profile of the research staff of the Host Institution

	Description	Number
A	Total number of integrated PhD holders, with a fulltime permanent contract as a researcher (ECIC or equivalent), associated with the Institution on 30/11/2023	16
B	Total number of integrated PhD holders, with a fulltime permanent contract as a professor (ECDU, ECPDESP or equivalent), associated with the Institution on 30/11/2023	420
C	Total number of PhD holders, with non-permanent fulltime research contracts ("Norma Transitória", non-permanent "FCT-CEEC", "Bolsas inv. pós-doutoral", etc.) associated with the Institution on 30/11/2023	114

Description of the Additional Host Institution

The NOVA School of Science and Technology (NOVA FCT) is acclaimed as one of the top three institutions in Portugal, specializing in Engineering and Sciences. Renowned for its research excellence, superior course quality, and the impressive employability of its graduates, including bachelor's, master's, and Ph.D. holders, NOVA FCT is home to a vibrant community of around 8.500 students. Its exceptional campus fosters a culture of outstanding teacher-student relationships and offers a dynamic academic life enriched with a variety of cultural and sports activities.

All programs at NOVA FCT, particularly engineering courses, are accredited by the A3ES (Agency for Assessment and Accreditation of Higher Education) and recognized by prestigious bodies such as the Order of Engineers, FEANI (Federation of Professional Engineers in Europe), and EUR-ACE (European Accredited Engineer). The institution boasts 13 Departments in diverse fields like Chemistry, Environment, Materials, Engineering, and Informatics, and operates 16 R&D Units. It offers a wide range of study cycles, totaling 117 (19 Bachelor's, 11 Integrated Master's, 49 Master's, and 32 PhDs).

NOVA FCT's commitment to scientific excellence is evident in its significant scientific output and numerous publications in prestigious international journals, achieving a SciVal Citation Impact index of 1.35, which is 35% above the global average. Its active engagement in leading technological

university networks such as CESAER and partnerships with esteemed institutions like MIT, CMU, and the University of Texas highlight its global presence and dedication to excellence.

The school's strategic emphasis on sustainable development closely aligns nearly all recruitment plan vacancies with the Sustainable Development Goals (SDGs), reflecting a proactive stance towards contemporary societal challenges. This focus extends to the organization of research and teaching, prioritizing areas such as Sustainability, Energy, IoT, Industry 4.0, Life Sciences, Health Sciences and Technology, and Digital Technology, among others. This ensures integration with the broader ecosystem, including departments, educational offerings, R&D Units, and strategic areas.

Our recruitment plan aims to hire 53 assistant professors, 1 associate professor, 22 assistant researchers, and 5 principal researchers to bolster the link between teaching, research, and innovation. We seek teaching researchers who are not only adept at pedagogical innovation but also embody an innovative and entrepreneurial spirit to empower future generations.

Collaboration and knowledge transfer are cornerstones of NOVA FCT's mission, underscored by its participation in 9 COLABs and securing 17 ERC grants, showcasing its role in fostering innovation. Initiatives like the Proof of Concept at ERC grants aim to translate research into societal benefits and enhance the maturity of technologies developed in the university setting.

The recruitment strategy, supported by the new regulation for teaching services at NOVA University of Lisbon, is tailored to attract teaching researchers with minimal teaching loads, enabling a focus on research activities. This approach ensures the necessary resources and support for the successful execution of tasks outlined in each vacancy, committing NOVA FCT to an environment that encourages innovation and excellence.

In conclusion, NOVA FCT's strategic initiatives, spanning structured departments, educational offerings, R&D Units, and strategic areas, are thoughtfully designed to foster knowledge and innovation. These efforts, aimed at attracting and nurturing the next generation of scholars and innovators, solidify its position as a leader in science and technology education and research. Through its contributions to education, research, and collaboration initiatives, NOVA FCT makes a significant impact on society and advances the sustainable development goals.

Additional Host Institutions

Universidade Nova de Lisboa - Faculdade de Ciências e Tecnologia da Universidade Nova de Lisboa - Unidade de Ciências Biomoleculares Aplicadas - Lisboa

Profile of the research staff of the Host Institution

	Description	Number
A	Total number of integrated PhD holders, with a fulltime permanent contract as a researcher (ECIC or equivalent), associated with the Institution on 30/11/2023	5
B	Total number of integrated PhD holders, with a fulltime permanent contract as a professor (ECDU, ECPDESP or equivalent), associated with the Institution on 30/11/2023	59
C	Total number of PhD holders, with non-permanent fulltime research contracts (“Norma Transitória”, non-permanent “FCT-CEEC”, “Bolsas inv. pós-doutoral”, etc.) associated with the Institution on 30/11/2023	72

Description of the Additional Host Institution

1) UCIBIO@glance: UCIBIO - Applied Molecular Biosciences Unit, ranks among the top 3 national units in Biomolecular Sciences, boasting an Excellent classification. It comprises 136 PhD-holder researchers (as of 30.11.2023), fostering multidisciplinary collaborations. UCIBIO excels in both fundamental and applied research, spanning Biology, Biochemistry & Biophysics, and Biotechnology & Bioengineering. UCIBIO operates under four thematic lines: TL1-Biological & Biomolecular Interactions; TL2-Diagnostics, Drug Discovery & Development; TL3-Safety in Human & Environmental Health; and TL4-(Nano)Bioengineering.

UCIBIO also integrates the recently approved Associated Laboratory - Institute for Health and Bioeconomy, i4HB – together with two other national research units (iBB and INESC-MN), creating synergies that boost the capacities for success in competitive areas of R&D+I, while representing and additional framework to promote research careers.

2) Talent@UCIBIO: UCIBIO researchers are integrated in Schools from two distinct Universities: NOVA-FCT from NOVA University of Lisbon (UCIBIO-NOVA), and School of Pharmacy from the University of Porto (UCIBIO-Porto). Thus, UCIBIO´s strategies towards career stabilization, talent attraction and retention are intertwined with the Universities´ and Schools´ human resources policies, opening a much wider portfolio of career and development opportunities, contact with young generations, society and industry stakeholders, fostering impact and innovation.

FCT-Tenure UCIBIO-NOVA application aligns with NOVA-FCT's commitment to research and talent retention. NOVA-FCT offers various professor profiles to promote teaching-research career mobility and flexibility, with reduced teaching duties to support research activities. Internal policies at NOVA-FCT and UCIBIO encourage researchers and talent attraction/integration: (i) NOVA-FCT, in coordination with its research units, has in place a monitoring and evaluation process for researchers, with annual feedback and mentoring from an individual committee with internal & external specialists. This implemented process opens the possibility for fair career management & progression; (ii) Initiatives as the NOVA Doctoral School coordinated by NOVA Rectorate offer excellent opportunities for technical, soft-skills, leadership and mentoring training for staff and students;

UCIBIO also promotes several career management activities through its organized Human Resources Working Group – activities include specialized workshops (eg.Works4U) and dedicated mentoring for fellowships & grant writing; (iii) There is a dedicated and specialized UCIBIO Project Management & Communication Office, that coordinates at NOVA-FCT with the IRIS office for pre- and post-award support, including IP support & knowledge transfer. NOVA Univ. is also strongly supportive of value creation and entrepreneurship, issuing the NOVA spin-off seal for start-ups derived from UCIBIO´s research; (iv) UCIBIO provides annual support for research activities (consumables, equipment; dissemination/communication actions), as well as organized shared equipment and infrastructures (https://ucibio.pt/facilities-ucibio); (v) Internal communication and collaboration at UCIBIO is strongly encouraged through biweekly joint seminars Lisbon-Porto for distinct career levels, and dedicated funding for joint projects.

3) FCT-Tenure@UCIBIO-NOVA: The FCT-Tenure profiles merge the scientific vision and recruitment strategy of the Chemistry & Life Science Departments of NOVA-FCT with that of UCIBIO. Thus, the Assistant Professor (14 positions) and Assistant Researcher (9 positions) profiles proposed at UCIBIO-NOVA focus on Bioengineering for Sustainability, Innovative Biomedical Technologies, and Human and Environmental Health Safety, reflecting UCIBIO's key impact areas and strengths as well as European/national agendas. The proposed profiles contribute equally for the current 4 thematic lines. Regarding distribution of positions among Research Groups, we prioritize those presenting a lower number of permanent staff to harmonize research efforts among all areas. Thus, at UCIBIO-NOVA 10 FCT-Tenure positions are associated to Bioengineering; 5 to Structural and Molecular Biology; 3 to Molecular microbiology & genomics; 3 to Applied Biomedicine and Health; the remaining 2 for Disease Pathways & Biomarkers and Toxicology. The same principle was followed at UCIBIO-Porto, proposing 11 positions. Overall, and considering both Lisbon and Porto poles, UCIBIO is renovated and strengthened achieving a higher equilibrium of permanent research staff between all research groups and areas, ensuring a sustainable research excellence for the future. In addition, the integration of fundamental and applied research is a cornerstone of UCIBIO's mission, exemplified by proposed profiles like the UCIBIO/i4HB-Neutroplast Embalagens Chair, strategically emphasizing knowledge translation and collaboration with stakeholders.

Additional Host Institutions

Instituto para a Saúde e a Bioeconomia

Profile of the research staff of the Host Institution

	Description	Number
A	Total number of integrated PhD holders, with a fulltime permanent contract as a researcher (ECIC or equivalent), associated with the Institution on 30/11/2023	8
B	Total number of integrated PhD holders, with a fulltime permanent contract as a professor (ECDU, ECPDESP or equivalent), associated with the Institution on 30/11/2023	101
C	Total number of PhD holders, with non-permanent fulltime research contracts (“Norma Transitória”, non-permanent “FCT-CEEC”, “Bolsas inv. pós-doutoral”, etc.) associated with the Institution on 30/11/2023	110

Description of the Additional Host Institution

The Institute for Health and Bioeconomy (i4HB) is a strategic partnership between 3 leading research units (RUs) in the Portuguese R&D landscape, that thrive on fundamental and applied science in the Biomolecular and Biological Sciences, Biotechnology, Bioengineering and Micro- and Nanotechnology fields: iBB - Institute for Bioengineering and Biosciences (IST, Universidade de Lisboa), UCIBIO - Applied Biomolecular Sciences Unit (NOVA University of Lisbon and University of Porto) and INESC-MN (Institute for System Engineering and Computers - Microsystems and Nanotechnologies - a nonprofit R&D Institute).

- iBB excels in research and advanced education in biotechnology, by responding to the challenge of exploring innovative approaches to key scientific and technological questions in Biosciences and Bioengineering and of transforming scientific knowledge into tangible innovation.

- UCIBIO combines key strength lies on the synergies created between fundamental and applied research in Biological Sciences interfacing Biology, Biochemistry & Biophysics, and Biotechnology & Bioengineering. Thus, while addressing exciting and pertinent questions at atomic, molecular, subcellular and cellular levels, including cell-to-cell interactions and population evolutionary dynamics, UCIBIO researchers combine an excellent capacity to transfer basic knowledge into market-oriented applications addressing societal and sustainable development challenges and needs.

- INESC-MN is dedicated to leading edge research and development in strategic technological areas of micro- and nanotechnologies and the application of these technologies to electronic, biological and biomedical devices.

The i4HB mission is to become a leading interdisciplinary Institute, to address societal demands and provide knowledge and sustainable technological solutions to improve the wellbeing of the population. Through world class R&D, i4HB will foster the development of integrated knowledge to support innovation in Public Policies at the leading-edge of research and education with major impact in the Health and the Bioeconomy sectors.

To meet this goal, i4HB is organized along 4 Thematic Lines (TLs) that address the challenges of strategic research fields and effectively support the implementation of public policies. These TLs are supported by synergic activities in Biomolecular Science, Integrated Systems for Advanced Therapies, Medical and Environmental Devices and in Biotech 4 Bioeconomy:

TL1 - Platforms for Drug Development and Discovery

TL2 - Advanced Diagnostics and Therapies

TL3 - Human Health and Environmental Safety

TL4 - Bioresources Valorization and Bioproducts Production

The TL are transversal to the activities of the Research Units enhancing the key strengths and promoting synergies among the researchers. The profiles of the institutional partners have been forged into a perfect combination of expertise that is complementary and potentiates individual skills to put forward solutions to societal challenges. i4HB pledge is to translate academic R&D into effective support to Public Policies.

Our vision is to translate the exponential growth of R&D in Portugal into effective solutions to society needs. The i4HB objectives and strategic plan were thus defined based on three action axes: Human Resources, Institutions and Activities. The strategic plan is supported by 3 Strategic objectives towards the effective support to Public Policies with impact in the Health and Bioeconomy sectors:

OBJECTIVE 1 - Promote and SECURE SCIENTIFIC EMPLOYMENMT, actively support the ADVANCED TRAINING of human resources with a global impact, attracting TALENT to Portugal

OBJECTIVE 2 - Contribute to the INTERNATIONALIZATION of the scientific base and increase the DIVERSIFICATION OF FUNDING, in particular from EU R&D programs and other International Entities;

OBJECTIVE 3 – REINFORCE EXCELENCE in R&D in collaboration with the private sector, and public or private institutions to continue to support PUBLIC POLICIES