UNIVERSITÀ DEGLI STUDI DI GENOVA
AREA RICERCA, TRASFERIMENTO TECNOLOGICO E TERZA MISSIONE
SERVIZIO PER IL TRASFERIMENTO TECNOLOGICO E DELLE CONOSCENZE
SETTORE VALORIZZAZIONE DELLA RICERCA, TRASFERIMENTO TECNOLOGICO E RAPPORTI CON LE IMPRESE

IL RETTORE

Vista la Legge 9 maggio 1989, n. 168 - Istituzione del Ministero dell'Università e della ricerca scientifica e tecnologica e ss.mm.ii;

Visto lo Statuto dell'Università degli Studi di Genova;

Visto il Regolamento Generale di Ateneo;

Visto il Regolamento di Ateneo per l'Amministrazione, la Finanza e la Contabilità;

VISTA la legge 7 agosto 1990, n. 241 recante "Nuove norme in materia di procedimento amministrativo e di diritto di accesso ai documenti amministrativi" pubblicata sulla Gazzetta Ufficiale n. 192 del 18/08/1990 e s.m.i.;

VISTO il Decreto del Presidente della Repubblica 28 dicembre 2000, n. 445 (Disposizioni legislative in materia di documentazione amministrativa) e s.m.i.;

VISTO il Decreto Direttoriale MUR n. 341 del 15/03/2022 di emanazione di un Avviso pubblico per la presentazione di Proposte di intervento per la creazione di "Partenariati estesi alle università, ai centri di ricerca, alle aziende per il finanziamento di progetti di ricerca di base" nell'ambito del Piano Nazionale di Ripresa e Resilienza, Missione 4 "Istruzione e ricerca" – Componente 2 "Dalla ricerca all'impresa" – Investimento 1.3, finanziato dall'Unione europea – NextGenerationEU";

VISTO il Decreto Direttoriale MUR n. 1553 dell'11/10/2022 di concessione del finanziamento del progetto Codice identificativo PE00000006, Acronimo MNESYS, Titolo "*A multiscale integrated approach to the study of the nervous system in health and disease*", registrato alla Corte dei Conti il 23/11/2022 al n. 2948 e relativi allegati;

CONSIDERATO che l'Università degli Studi di Genova è leader dello Spoke 6, dal titolo "*Neurodegeneration, trauma and stroke*";

CONSIDERATO che gli Spoke possono emanare - nell'ambito dei limiti e con le modalità previste dall'Avviso – "bandi a cascata" finalizzati alla concessione di finanziamenti a soggetti esterni per attività coerenti con il progetto approvato;

VISTA la delibera della seduta del 27 settembre 2023 con cui il Consiglio di Amministrazione dell'Università degli Studi di Genova ha approvato l'emanazione del bando a cascata per organismi di ricerca nell'ambito del Progetto MNESYS – "*A multiscale integrated approach to the study of the nervous system in health and disease* - PNRR M4C2 per lo Spoke 6;

VISTO il Decreto del Direttore Generale n. 5418 del 14 novembre 2023 di nomina del Responsabile

VISTO il Decreto del Rettore n. 1145 del 6 marzo 2024 di emanazione del Bando a cascata per il finanziamento di proposte di intervento per le attività di ricerca svolte da Organismi di Ricerca nell'ambito del programma di ricerca PE MNESYS "*A multiscale integrated approach to the study of the nervous system in health and disease*", per lo Spoke 6 dal titolo "*Neurodegeneration, trauma and stroke*", nell'ambito del PNRR, Missione 4, Componente 2, Investimento 1.3 – finanziato dall'Unione europea – NextGenerationEU (CUP D33C22001340002);

CONSIDERATO che alla data di scadenza per la presentazione delle proposte progettuali per la **Tematica O – "Development of innovative technologies for rehabilitative treatments in preclinical models: a smart box (automated,computer-controlled) to monitor animal behavior during motor tasks novel implantable technologies formonitoring electrophysiological activity, sensors to collect physiological parameters able to assess andquantify also the non-motor symptoms due to the pathology (e.g., depression)"** era pervenuta a mezzo PEC all'indirizzo air3@pec.unige.it la seguente proposta:

PROPONENTE: Istituto Italiano di Tecnologia
TITOLO PROPOSTA: BRAINBOX – Biomechanical Research and AI-Integrated Neuroscience BOX

TENUTO CONTO che la Responsabile del procedimento, Ing. Patrizia Cepollina, ha ritenuto ricevibile, ammissibile e conforme la proposta sopra citata;

CONSIDERATO che nel Bando è previsto che la valutazione di merito tecnico-scientifico dei progetti pervenuti sia affidata ad una Commissione composta da almeno tre esperti esterni al Partenariato, indipendenti e competenti dell'Area tematica dello Spoke;

VISTO il Decreto Rettorale n. 6114 del 20 dicembre 2023 con cui è stato emanato l'Avviso di manifestazione di interesse per la costituzione di un albo di esperti indipendenti a supporto della valutazione di merito dei progetti PNRR presentati sui bandi a cascata del progetto MNESYS – A multiscale integrated approach to the study of the nervous system in health and disease;

VISTO l'Estratto del Verbale della Riunione del 12 febbraio 2024 del Comitato Scientifico del programma di ricerca MNESYS "*A multiscale integrated approach to the study of the nervous system in health and disease*" che ha approvato la "Rosa di Candidati" per le Commissioni di Valutazione dei Bandi a cascata sul Programma MNESYS;

VISTO il Decreto del Rettore n. 855 del 20 febbraio 2024 con cui è costituito l'Albo a supporto delle valutazioni dei progetti presentati in risposta al bando pubblico per la selezione di proposte progettuali da finanziare nell'ambito delle attività di ricerca dello Spoke n. 6 di cui al programma di "*A multiscale integrated approach to the study of the nervous system in health and disease*" – MNESYS, a valere sulle risorse del Piano Nazionale di Ripresa e Resilienza (PNRR), Missione 4 "Istruzione e Ricerca", Componente 2 "Dalla ricerca all'impresa", linea di Investimento 1.3 "Creazione di Partenariati Estesi alle università, centri di ricerca, alle aziende per il finanziamento di progetti di ricerca di base";

VISTO il Decreto del Rettore n. 1610 del 2 aprile 2024 con cui è stata nominata la Commissione di valutazione delle proposte pervenute in risposta al bando a cascata di cui al D.R. n. 1145 del 6 marzo 2024, indicato nelle premesse del presente decreto;

ACQUISITO il verbale della Commissione di Valutazione della seduta del 7 maggio 2024 (Prot. n. 40540 del 13/05/2024);

VISTO il Decreto del Rettore n. 2346 del 14 maggio 2024 con cui è stata approvata la graduatoria di merito per la Tematica O – "Development of innovative technologies for rehabilitative treatments in preclinical models: a smart box (automated,computer-controlled) to monitor animal behavior during motor tasks novel implantable technologies formonitoring electrophysiological activity, sensors to collect physiological parameters able to assess andquantify also the non-motor symptoms due to the pathology (e.g., depression)", di cui al bando a cascata di cui al Decreto del Rettore n. 1145 del 6 marzo 2024, indicato nelle premesse del presente decreto;

TENUTO CONTO che in data 15 maggio 2024 è stata inviata all'Istituto Italiano di Tecnologia la comunicazione con prot. n. 42119 in cui si rendevano noti gli esiti della procedura e si richiedeva la documentazione propedeutica all'adozione del provvedimento di ammissione del finanziamento;

VISTO che in data 21 maggio 2024 con prot. n. 44379 la documentazione richiesta è stata ricevuta dall'Università degli Studi di Genova che l'ha ritenuta conforme a quanto previsto nel bando a cascata di cui al Decreto del Rettore n. 1145 del 6 marzo 2024, indicato nelle premesse del presente decreto,

DECRETA

ART. 1

L'ammissione a finanziamento del progetto BRAINBOX – Biomechanical Research and AI-Integrated Neuroscience BOX per la **Tematica O – "Development ofinnovative technologies for rehabilitative treatments in preclinical models: a smart box (automated,computer-controlled) to monitor animal behavior during motor tasks novel implantable technologies formonitoring electrophysiological activity, sensors to collect physiological parameters able to assess andquantify also the non-motor symptoms due to the pathology (e.g., depression)"**con Soggetto proponente l'Istituto Italiano di Tecnologia – come rappresentato negli Allegati B e C alla proposta presentata con domanda di partecipazione prot. n. 22763 del 21 marzo 2024.

ART. 2

L'entità dell'agevolazione concessa, a fondo perduto, ammonta a 150.000 euro complessivi come rappresentati nell'allegato C alla proposta presentata con domanda di partecipazione prot. n. 22763 del 21 marzo 2024. L'agevolazione è pari al 100% dei costi di progetto trattandosi di attività di ricerca fondamentale per Organismi di Ricerca. L'agevolazione è concessa a valere sui fondi PNRR - Programma "*A multiscale integrated approach to the study of the nervous system in health and disease*" – MNESYS Codice PE00000006 a valere sulla Missione 4, Componente 2, Investimento 1.3, ai sensi del Decreto di concessione n. 1553 dell'11 ottobre 2022, registrato alla Corte dei Conti il

23/11/2022 n. 2948, iscritto al Bilancio di Ateneo sul progetto UGOV 100009-2022-TF-PNRR-PE_MNESYS_BAC_DINOGMI.

ART. 3

Le attività, come indicate dettagliatamente nell'Allegato B alla domanda di finanziamento, dovranno essere avviate a partire dalla data di sottoscrizione del Contratto e concluse entro e non oltre 12 mesi, affinché siano rendicontate in tempo utile per consentire la chiusura del Programma PE MNESYS, il cui termine è attualmente previsto al 31 ottobre 2025.

Potrà essere valutata e concessa una sola proroga in presenza di ritardi dovuti a circostanze eccezionali e non dipendenti da scelte del Beneficiario esclusivamente nel caso in cui il MUR, a sua volta, proroghi il termine del Programma MNESYS.

ART. 4

Il presente atto sarà pubblicato sul sito UniGe https://unige.it/progetti-finanziati-dal-pnrr e laddove la normativa vigente lo richiede.

Il documento informatico originale sottoscritto con firma digitale sarà conservato presso l'Area Ricerca, Trasferimento Tecnologico e Terza Missione.

ALLEGATI:

Allegato B – Proposta progettuale
Allegato C – Piano economico-finanziario

IL RETTORE
Prof. Federico DELFINO
(documento firmato digitalmente)

PE00000006
"A multiscale integrated approach to the study of the nervous system in health and disease"

MNESYS

SPOKE N. 6

Research proposal

Topic "o" as reported in Annex 2

BRAINBOX: Biomechanical Research and AI-Integrated Neuroscience BOX

- Host Institution: Fondazione Istituto Italiano di Tecnologia (IIT)
- PIs: Luca Berdondini (PI) and Raffaella Tonini (co-PI)
- Proposal duration in months: 12

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ROLE IN THE PROJECT	NAME	SURNAME	DEPARTMENT	QUALIFICATION	YOUNG (under 40 al 31.12.2023)	F/M
Principal Investigator	Berdondini	Luca	Microtechnology for Neuroelectronics	Senior Researcher Tenured (Group Leader)	NO	M
co- Principal Investigator (PI)	Tonini	Raffaella	Neuromodulation of Cortical and Subcortical Circuits	Senior Researcher Tenured (Group Leader)	NO	F
Research Team Component	Massimo	De Vittorio	Center for Biomolecular Nanotechnologies	Coordinator of the Center	NO	M
Research Team Component	Pucci	Daniele	Artificial and Mechanical Intelligence	Senior Researcher Tenured (Group Leader)	NO	M
Research Team Component	De Pietri Tonelli	Davide	Neurobiology of miRNA	Senior Researcher Tenured (Group Leader)	NO	M
Research Team Component	Latella	Claudia	Artificial and Mechanical Intelligence	Technician	YES	F
Research Team Component	Alice	Gino	Neuromodulation of Cortical and Subcortical Circuits	Technician	YES	F

ABSTRACT

Brainbox proposes an integrated multimodal sensing and AI approach for an automated, computer-controlled preclinical system, referred to as "smart box". Specifically, the "smart box" will enable to concomitantly monitor body-level behaviour and biomechanics (kinematics and dynamics, joints torque estimations, etc.), physiological biosignals (heartbeat and respiration) and spontaneous/evoked neural activity (single cells and populations activity) across various brain circuits, and advance current capabilities to quantify motor and non-motor functions of behaving mice disease models.

The research plan targets the realization of a behavioural monitoring system by integrating piezoelectric wearable sensors, chronically implantable active dense bi-directional (recording/stimulation) CMOS-based electrode array probes, and sensors (capacitive sensing floors and video cameras) for the use of novel biomechanical computational mice models and AI tools. To validate the acquisition of multiscale experimental data, we will conduct experimental trials using the proposed smart box in a Parkinson's disease (PD) mouse model. This process will involve a multiparametric analysis of the acquired multiscale data, which will be used to assess the system's sensitivity in quantifying both motor and non-motor symptoms exhibited by the PD mice model. Feasibility of Brainbox is ensured by the already developed sensing and AI technologies in the Brainbox consortium, as well as by an interdisciplinary team with recognized engineering and neuroscience expertise.

The proposed preclinical smart box system and multimodal sensing approach for multiscale data monitoring will enhance understanding of disease models and treatment effects with unprecedented mechanistic depth, thus advancing current research capabilities to identify biomarkers of disease progression and potential therapeutic strategies.

RESEARCH PROPOSAL

Section a. State-of-the-art and objectives

The **overall objective** of Brainbox is to integrate multiple, recently developed advanced sensing and AI technologies in an automated, computer-controlled smart box for advancing preclinical methodologies to measure both motor and non-motor function in animal models by tracking spontaneous movement.

Automated home-cage monitoring system for the characterization of mouse behaviour is essential for preclinical studies [1], and several automated platforms have been proposed [2,3]. Differently than existing home-cage monitoring system, the Brainbox system will provide the unique ability to concomitantly collect multi-scale data, from body-level behaviour and biomechanics to physiology and neural activity, with high spatiotemporal resolution and across various brain circuits. Therefore, the proposed integrated and multimodal approach radically advances state-of-the-art preclinical platforms to enhance understanding of disease models and treatment effects with unprecedented mechanistic depth.
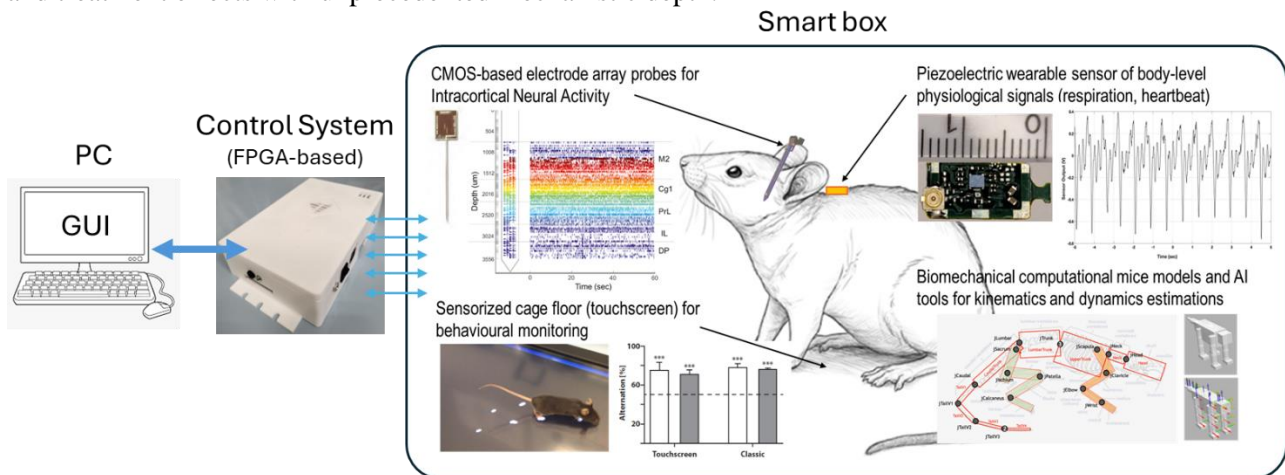
Figure 1: Overview of the Brainbox automated, computer-controlled system for preclinical studies. Advanced sensing and AI technologies recently established at IIT will be integrated. This will enable monitoring freely behaving mice models at multiple scales. Sensitivity to quantify motor and non-motor symptoms (i.e. anxiety and depression) will be assessed in a PD mice model.

To this purpose, we will exploit the following original technologies recently established at IIT, positioning the proposed system far beyond current state-of-the-art: **Piezoelectric wearable sensor of body-level physiological signals** [4] to monitor respiration, heartbeat, and other vibrational parameters such as vocalization. Former studies showed the effectiveness of this technology for detecting body-level physiological signals. Differently from other existing sensing solutions used to monitor physiological signals (e.g., heartbeat, respiration), the established piezoelectric wearable sensor technology provides an all-in-one solution to measure multiple parameters with a single sensor, thus minimizing weight and encumberment for mouse disease models. **Chronically implantable active dense bi-directional (recording/stimulation) CMOS-based electrode array probes** [5,6] for high-resolution monitoring of neural activity (Action Potentials – AP, and Local Field Potentials – LFPs) concomitantly in multiple brain circuits, and capable of delivering electrical stimuli for neuromodulation. Based on the unique features of the electrode-pixel SiNAPS architecture that record (20 kHz/channel) from all closely spaced microelectrodes integrated on needle-like, minimally invasive probes, these devices are assembled in microsystems with a small form-factor and low weight for chronic implants (several weeks) in mice. Probes feature novel electrode-pixels circuits that can be re-configured ($<50\mu sec$) for the delivery of electrical stimuli to probe/modulate brain circuit functions. **Biomechanical computational mice models and AI tools for kinematics and dynamics estimations** We will integrate sensorized floors (using capacitive touchscreen sensors as already validated by the team for mice behaviour studies), video cameras and wearable sensors combined with AI derived from the *iFeel* system (www.ifeeltech.eu), to perform real-time mice motion tracking (i.e., kinematic estimation) and real-time articular stress tracking (i.e., dynamic estimation) with muscular fatigue estimation. The whole-body

kinematics and dynamics estimation and motion prediction have been already validated for the human case and will be here applied and customized for the mice study. This will provide an unprecedented monitoring of the mice movement efforts during motor tasks in terms of joints torque estimation.

To combine these technologies, an existing FPGA-based hardware [7] will be adapted to ensure synchronous data acquisition from the multiple sensors and communication with a workstation for data acquisition and control of the smart box. The workstation will be running a control software GUI providing functionalities for automated preclinical studies.

Toward this goal, the **Specific Objectives (SO)** are:

SO1 Integrate the existing multimodal technologies and a software GUI for data acquisition in a computer-controlled smart box for automated preclinical studies in mice disease models.

SO2 Demonstrate the smart-box by applying it to acquire multiscale experimental data from wild-type mice (control) and a Parkinson's disease (PD) mice model (with motor and non-motor symptoms).

SO3 Validate the automated, computer-controlled smart-box for preclinical studies in mice by assessing the reached sensitivity to quantify motor and non-motor symptoms obtained by studying the multiparametric analysis of the so enabled multiscale data monitoring.

The multi-scale data (i.e. from body-level behaviour and biomechanics to physiology and neural activity) generated by the proposed smart box system will have direct impacts in neuroscience by enhancing current capabilities of researchers to identify biomarkers of disease progression, to study disease mechanisms and investigate potential therapeutic strategies. The project targets a publication to demonstrate the system performance, thus directly impacting on the scientific community. Further, the generation of original datasets (e.g., longitudinal, multiparametric, multi-scale) will create novel opportunities for computational/AI developments on tools tailored to preclinical studies, thus contributing to strengthening inter-disciplinary collaborations among neuroscientists, clinicians, and engineers. Finally, the realized system has potential for generating IPRs and, consequently, technology transfer opportunities for the commercialization of the validated system.

Section b. Methodology

The proposed research is <u>planned over 12 months</u>. The feasibility of the targeted objectives is ensured by the availability within IIT (units of *Berdondini, De Vittorio, Pucci, De Pietri*) of the original advanced technologies proposed for the smart-box system, strong competences in system integration (HW and SW) and AI-based tools, as well as by an established expertise (unit of *Tonini, De Pietri*) in executing neuroscience studies on behaving disease mice models. In particular, the specific objectives will be implemented as follows.

SO1: we will exploit piezoelectric sensors (*De Vittorio*), implantable bi-directional CMOS-probes developed (*Berdondini*), a capacitive touchscreen sensorizing the floor of the arena as already validated for behavioural studies (*De Pietri*), and biomechanical computational mice models and AI tools for kinematics and dynamics estimations established by adapting tools derived for the iFeel human system by (*Pucci*). **Activities planning**: **Months 1-3**, the smart box will be integrated using the existing hardware and sensors. Synchronous data acquisition from the different sensors will be controlled by an FPGA-based acquisition system already developed for chronic recordings from CMOS-probes in freely behaving mice in an arena equipped with video monitoring cameras. The arena is equipped with a commutator that will manage the electrical wiring of a head stage connecting the implanted CMOS-probes and the wearable piezoelectric sensor. The wearable piezoelectric sensors are integrated on flexible, conformable, waterproof, and biocompatible (Parylene C is used for electrical insulation). Small devices integrating the sensor and electronics to read the sensor signal (to amplify and convert the generated charges to a voltage signal) were already placed on the skin of a mouse to monitor heartbeat and respiration. A software GUI running on a workstation will be developed to control the smart box and automate the data acquisition by connecting to the FPGA-based hardware and the sensorized floor of the arena. To do so, we will advance an existing software GUI interface to operate the smart box system and to store multimodal data and experimental metadata. During **Months 4-12** the smart box will be optimized based on feedback that will be collected from experimental studies and data analysis. **Deliverables**:

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D1.1 (month 3) *First smart box system for validation studies*; **D1.2** (month 12) *Optimized computer controlled automated smart box for preclinical studies*.

SO2: we will exploit already available expertise (*Tonini*) on a mouse model of PD based on bilateral injection of the neurotoxin 6-OHDA in the dorsal striatum. This approach leads to a partial lesion of catecholamine neurons, reproducing an early stage of parkinsonism in which particularly non-motor symptoms, such as anxiety and depression, are manifested [8,9]. Using the automated smart box arena, we will record high-resolution electrophysiological data from chronic CMOS-probe implants while monitoring movement and physiological parameters to perform a quantitative behavioural and multiparametric analysis. In addition to movement kinematics, we will assess thigmotaxis by measuring the percentage of time and distance the animal spends or covers in the centre, as opposed to the periphery. Thigmotaxis reflects the rodent's innate evolutionary adaptation leading to a preference for staying close to walls or edges. In an open field area, this behaviour is extrapolated to understand anxiety-like responses. Rodents displaying high thigmotaxis, by spending more time and covering more distance near the walls, are considered to exhibit higher anxiety levels. During behaviour tests, blood samples from the animals will be collected to assess pro-inflammatory markers. After the behavioural tests, brain sections will be subject to immunohistology to determine the degree of neurodegeneration and neuroinflammation. **Activities planning**: **Months 1-3**, Preliminary data acquisition form WT (control) and PD mice models using available sensing technologies to instruct/test their integration. **Months 4-10**, Data acquisition form control (wild-type) and PD mice models using the automated computer-controlled smart box. A time-widow of 30-45 days since injection will be monitored. **Months 11-12** Explore the use of electrical stimulation and the smart box readout to probe the functionality of brain circuits in the PD mice model. **Deliverables**: **D2.1** (month 6) *Preliminary dataset of monitored multimodal data in control and PD mice*; **D2.2** (month 12) *Dataset of multimodal data monitored in control and PD mice*.

SO3: we will analyse the acquired experimental data to extract quantitative behavioural and biological markers of motor and affective states. To so we will i) use existing data-specific tools (e.g. for active-dense electrophysiological data and behaviour) to analyse data types independently, ii) develop custom Python-based tools for the multiparametric analysis of synchronously monitored multimodal data and iii) correlate the analysis of the monitored data with results from the analysis of blood samples characterizing levels of various pro-inflammatory markers, e.g. cytokines and circulating RNAs, which are known hallmarks of PD [10,11], and from immunohistology on brain sections to determine the degree of neurodegeneration of catecholaminergic neurons [9] as well as the neuroinflammatory state based on markers of astrocyte and microglia "reactivity", as in [12]. **Activities planning**: **Months 6-12**, Development, and application of data analysis tools on the monitored multimodal data **Deliverables**: **D3.1** (month 12) *Assessment of the reached smart box sensitivity for preclinical studies to quantify motor and non-motor symptoms in PD mice models (results targeting a paper submission)*.

Section c. Available instrumentations and resources

Resources: the requested resources are: <u>costs for materials</u> – materials to realize the mechanical components of the behavioral system, electronics of the proposed system (including real-time FPGAs and GPU hardware), to mount and integrate the different sensors, touch screens for the cage floor, components to integrate video cameras and automated lighting systems for monitoring behavior, costs for implantable CMOS electrode probes, costs for animals (WT and PD mice models), biochemicals and reagents for assays; <u>costs for other types of expenses</u> – open-access publication fee.

Available resources: licenses for animal experimentation on wild-type (control) and PD mice models have already been obtained. IIT has fully equipped facilities for molecular and cellular neurobiology, electrophysiology, micro-/nano-fabrication (clean-room), animal housing, electronic/mechanic workshops and advanced imaging facilities.

Available instrumentation: the IIT Centre Center for Biomolecular Nanotechnologies (Lecce) has fully equipped laboratories and infrastructures (including clean-room and rooms for experimental testing) as required to implement the Brainbox workplan. Prototypes of the different sensors and computational models that are planned to be integrated into the smart box are already available, as well as an FPGA-based research

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platform (Berdondini's unit) that will be used to develop the control and acquisition of multimodal data at sub-millisecond time precision. ICT infrastructure (i.e. workstations for data acquisition and analysis, data storage) as well as software tools for data analysis (Python-based scripts and Matlab tools) are also already available and will be used in the project to deploy real-time data analysis tools for sensor signals.
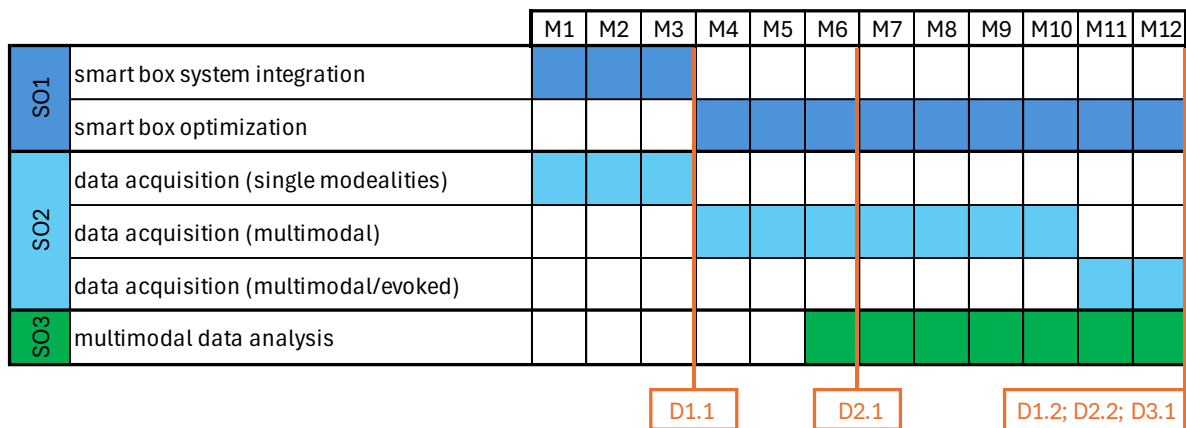
Section d. GANTT diagram

		M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
SO1	smart box system integration	■	■	■									
	smart box optimization				■	■	■	■	■	■	■	■	■
SO2	data acquisition (single modealities)	■	■										
	data acquisition (multimodal)				■	■	■	■	■	■	■		
	data acquisition (multimodal/evoked)											■	■
SO3	multimodal data analysis							■	■	■	■	■	■
					D1.1			D2.1				D1.2; D2.2; D3.1	

Figure 2: GANTT chart of the activities planned toward the Specific Objectives SO1-3 and Deliverables (D).

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PERSONAL INFORMATION

Family name, First name: Berdondini, Luca

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Date of birth: 30 September 1974

Nationality: Swiss

URL for web site: https://www.iit.it/people-details/-/people/luca-berdondini

- **EDUCATION**

2003   PhD Neuroelectronic Microsystems
            Institute of Microtechnology, Université de Neuchâtel, Switzerland
            Prof. Milena Koudelka-Hep and Prof. N.F. De Rooij
1999   Master, Microtechnology (Ing. Dipl. EPFL-MT)
            Microtechnology, Swiss Federal Institute of Technology at Lausanne (EPFL),
            Switzerland. (MSc Thesis at Pine Lab, California Institute of Technology (Caltech),
            Pasadena, USA)

- **CURRENT POSITION**

2018 –   Senior Researcher (PI Tenured)
            Microtechnology for Neuroelectronics, Fondazione Istituto Italiano di Tecnologia – IIT,
            Genova, Italy

- **PREVIOUS POSITIONS**

2013 – 2018   Senior Researcher (tenure-track TT2)
            Microtechnology for Neuroelectronics, Fondazione Istituto Italiano di Tecnologia – IIT,
            Genova, Italy
2007 – 2013   Team Leader
            Neuroscience and Brain Technologies (NBT), Fondazione Istituto Italiano di Tecnologia –
            IIT, Genova, Italy
2003 – 2007   Postdoctoral fellow
            Inst. Microtechnology (SAMLAB), Université de Neuchâtel, Neuchâtel, Switzerland
            (now part of EPFL, www.archiveweb.epfl.ch/samlab.epfl.ch/)
1999 (May-Oct) Robotics Engineer
            K-Team SA, Préverenges, Switzerland
            (www.k-team.com/)

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

2007 – 2023   15 Postdocs/ 7 PhDs / 4 Master Students
            Fondazione Istituto Italiano di Tecnologia – IIT, Genova, Italy

- **ORGANISATION OF SCIENTIFIC MEETINGS**

2014   Co-organizer of the BRAIN-FETs - 1st Clustering Workshop on Future Emerging
            NeuroTechnologies, 16-17 October, IIT, Genova, Italy.
2011   Member of the local organizing committee of the 6th International Conference on
            Microtechnologies in Medicine and Biology, IEEE-MMB, Lucern, Switzerland.

- **INSTITUTIONAL RESPONSIBILITIES**

2023 –	Member of the IIT Management Committee of the IIT-Harvard Research Collaboration
2018 –	Faculty member, Fondazione Istituto Italiano di Tecnologia – IIT, Genova, Italy
2021 –	Member of the ARC Management Board, Open University Affiliated Research Center at the Italian Institute of Technology (ARC@IIT), Italy
2022 –	Third-Party Monitor of PhDs, ARC@IIT, Italy
2013 –	Member of different evaluation committees for Technologist/Researchers/Technicians positions in different centres and laboratories of IIT, Italy

- **REVIEWING ACTIVITIES**

2007 –	Reviewer for Journals, including Nature Nanotechnology, Nature Communications; Nature Materials; Neuron; Scientific Reports, Lab-on-Chip, Plos One, J. Neuroscience Methods, Journal of Micromechanics and Microengineering, Sensors and Actuators B, IOP Publishing group journals, Chemical Society Reviews, Frontiers Journals.
2008 –	Invited External Reviewer in Ph.D juries: EPFL (CH); University of Neuchatel (CH); Université de Bordeaux (FR); Newcastle University (UK); Université de Grenoble (FR); Université de Toulouse (FR); TU-Berllin (DE).
2010 –	Grant Reviewer for international funding agencies: European Research Council – ERC (EU); Research Foundation Flanders - FWO (BE); Agence Nationale de la Recherche – ANR (FR); NC3R (UK); United States – Israel Binational Science Foundation (BSF) (IL); Science Foundation Ireland - SFI (IE); Flanders government agency for Innovation by Science and Technology - IWT (BE).
2010	Grant reviewer for the IIT-Seed Grants for Italy
2012 –	Review editor of Frontiers in Neuroengineering and of Frontiers in Neurorobotics.
2013	Member of the Jury of the "25A Selezione italiana per il concorso dell'unione europea dei giovani scienziati e per altri eventi internazionali", Milano, Italy.

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES (if applicable)**

2018 –	IEEE Senior Member
2016 –	IEEE Engineering in Medicine and Biology Society Membership
2007 –	American Society for Neuroscience (SFN)

- **MAJOR COLLABORATIONS**

J. Assad and B. Sabatini, Neuroscience and Neurotechnology, Faculty of Neurobiology, Harvard Medical School, USA
S. Baker, Neuroscience in NHPs (motor system), Faculty of Medical Sciences, Newcastle University, UK
E. Sernagor, Visual system (retina), Faculty of Medical Sciences, Newcastle University, UK
A. Sirota, Neurocomputation, Faculty of Biology, Ludwig-Maximilians-Universität (LMU), DE

Current grants (Please indicate "No funding" when applicable):

Project Title	Funding source	Amount (Euros)	Period	Role of the PI	Relation to current proposal
CROSSBRAIN - Distributed and federated cross-modality actuation through advanced nanomaterials and neuromorphic learning	HORIZON-EIC-2021-PATHFINDERCHALLENGES-01	407'000	2022-2026	Project Partner	None
RAISE - "Robotics and AI for Socio-economic Empowerment" (Spoke 2 "Smart Devices and Technologies for Personal and Remote Healthcare")	PNRR	460'000	2021-2024	Activity Coordinator (NRTWIN – Neurorobotic Twinning)	Sensor technologies for studying electrophysiological neural activity in behaving mice. Piezoelectric sensors and system for CMOS-probes (recording only) will be used and modified for the present proposal.
LgDel-mPFC	HORIZON-MSCA-2021-PF-01-01 (GA 894032)	130'000	2022-2024	Co-Supervisor	CMOS-probe system for electrophysiological recordings in freely behaving mice. Provides a background for chronic CMOS-probe implants.
BIOINTERNECT - "Interfacce bioniche bidirezionali multimodali"	INAIL	264'000	2023-2026	Project Partner	None
BRAINMASTERS - Multifunctional magnetic nanomaterials for smart actuation and stimulation of neurons.	Submitted to: HORIZON-MSCA-2023-DN-01-01	260'000	2024-2028	Supervisor (Host)	None

PERSONAL INFORMATION

Family name, First name: Tonini Raffaella

Researcher unique identifier(s): ORCID 0000-0003-1652-4709

Date of birth: 05/04/1972

Nationality: Italian

URL for web site:https://nmcs.iit.it/

- **EDUCATION**

2000	Ph.D Physiological Science
	Dipartimento di Fisiologia e Biochimica Generali, Università Statale di Milano, Milano, ItalyProf. Michele Mazzanti
1996	Master in Biomolecular Science
	Dipartimento di Fisiologia e Biochimica Generali, Università degli Studi di Milano, Milano, Italy

- **CURRENT POSITION(S)**

2019 –present	Senior Researcher with Tenure
	Istituto Italiano di Tecnologia (IIT), Italy

- **PREVIOUS POSITIONS**

2013 – 2018	Senior Researcher Tenure Track
	IIT, Italy
2008 – 2013	Junior Group Leader
	IIT), Italy
2006 – 2007	Postdoctoral fellow
	Department of Physiology, University College London, UK
2001 – 2005	Postdoctoral fellow
	State University of Rome
2000 – 2001	Postdoctoral fellow
	State University of Milano

- **FELLOWSHIPS AND AWARDS**

2023	Award Aspen Institute Italy for scientific collaboration between Italy and USA
2023	President-elect of the International Basal Ganglia Society for the 2026-2029 period
2021	Elected Council Member of the International Basal Ganglia Society
2019	Tenure IIT
2019	Idex – University of Bordeaux- Visiting Scholar Award
2019	National Scientific Habilitation for Full Professorship in Physiology
2013	National Scientific Habilitation for Associate Professorship in Physiology
2004	HFSP short-term Fellowship (Dept. of Physiology, UCL, UK)
2003	EMBO short-term Fellowship (Dept. of Physiology, UCL, UK)
1998	Grass fellowship (Lab course: Cold Spring Harbor Laboratory, NY, USA)
1996	EMBO short-term Fellow (Institute of Physiology, Wuerzburg, Germany)

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS (if applicable)**

2005 – present **15** between research fellows and Ph.D. students
State University of Milano, Italy; University College London, UK; IIT, Italy

- **INSTITUTIONAL RESPONSIBILITIES**

2023 – present Coordinator of IIT Neuroscience & Brain Technologies Area
2023 – present Member of the IIT Board of Directors
2022 – present Member of the steering committee for the Bachelor's Degree in Quantitative Biology
Sate University of Milano, Italy
2022   Committee member for the promotion to IIT Tenured Research position
Committee member for the promotion to IIT Technologist position
2011-present PhD Faculty Board (Collegio dei Dottorati), University of Genoa, Italy
2009   Panel reviewer IIT "Seeds" projects

- **REVIEWING ACTIVITIES**

 2007 – present   Reviewer for Journals, including Current Biology, Neuron, Biological Psychiatry, Cell
Reports, Nature Review Neuroscience, Journal of Clinical Investigation, Science Signaling,
Journal of Neuroscience, Cerebral Cortex, Journal of Parkinson's Disease
2023   Grant reviewer, Wellcome Trust, UK
2022,2017,2012 Grant reviewer, Swiss Science Foundation
2022,2021,2016 Grant reviewer, National Agency of France Research
2021   External reviewer, ERC LS5 COG 2021
2021,2018   Grant reviewer, Medical Research Council UK
2021   Grant reviewer, National Science Center, PL
2019   Member of the advisory committee, Gordon Research Conference "Basal Ganglia: from
thought to action."
2018   Grant reviewer, New Zealand Marsden Foundation
2017   Grant reviewer, Canada Foundation for Innovation
2016   Grant reviewer, National Agency of France Research
2014   Grant reviewer, Parkinson's UK Society

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**
Serotonin Society (2020-present), Israelian Society for Neuroscience (2019-present), Australasiann Neuroscience Society – ANS (2019-present), International Basal Ganglia Society – IBAGS (2018-present), European Behavioral Pharmacology Society (2016-2018), European Molecular and Cellular Cognition Neuroscience Society (2015-present), Mediterranean Neuroscience Society (2015-present), Italian Society for Neuroscience (2009-present), International Cannabinoid Research Society –ICRS, (2005-2015)

- **MAJOR COLLABORATIONS**
D. Robbe, Inmed – Marseille; **M. Pasqualetti**, University of Pisa; **F. Georges** Neurocampus, Bordeaux; **J.Cheer,** University of Maryland, Baltimore; **A. Moroni**, University of Milano; **I. Katona**, Indiana University; **A. Araque**, University of Minnesota, Minneapolis; **G. Fisone**, Karolinska Institute; **R. Moratalla**, Cajal Institute, Madrid; Yulong Li, PKU, Beijing

Current grants (Please indicate "No funding" when applicable):

Project Title	Funding source	Amount (Euros)	Period	Role of the PI	Relation to current proposal
Robotics and AI for Socio-economic Empowerment	PNNR	268K	2022-2025	PI	Sensor technologies development for studying mouse behaviour. Piezoelectric sensors and system for CMOS-probes (recording only) will be used and modified for the present proposal
National Center for Gene Therapy and Drugs based on RNA Technology	PNNR	93K	2022-2025	PI	None
Disturbi Indotti dall'Esposizione prenatale al THC: Approccio Multidisciplinare ed Effetti di Integratori nella dieta maternal DIETAMI-Disb	FIRS	89K	2021-2024	Collaborator	Implementation of large-scale population imaging approaches
Comorbidity mechanisms of anxiety/depression in Parkinson's disease	H2020	740K	2021-2024	PI	Multiscale neuroscience approaches to investigate the neurobiological mechanisms underlying co-morbid

					anxiety and depression in Parkinsons's disease
BIBRAIN	*Submitted* HORIZON-MSCA-2023-DN			Co-PI	Combining neuromorphic computing with brain-computer interface for technology innovation for treating Parkinson's Disease
FORREAL - Investigating the neuromodulatory landscape and neuronal ensembles controlling behavioral cost sensitivity during foraging	*Submitted* HORIZON-MSCA-2023			Coordinator-supervisor	Combining innovative behavior paradigms with large-scale population imaging to investigate neuronal ensembles governing behavioral costs in decision making.
Multiscale neuroscience to reveal mechanisms of individual sensitivity to Effort and time in depression (MINDSET)	*Submitted* HORIZON-HLTH-2024			Coordinator	Multiscale neuroscience approaches to investigate the neuroeconomical bases of depression

PERSONAL INFORMATION

Family name, First name: De Vittorio, Massimo
ORCID: 0000-0003-1601-6392
Date of birth: May 10 1967
Nationality: Italian
URL for web site: https://cbn.iit.it/en-US/people-details/-/people/massimo-devittorio

EDUCATION

1995-1996	Post-doc fellow	*EQF Level: 8*
	Istituto Nazionale per la Fisica della Materia.	
	• Quantum semiconductor nanostructures for photonic applications	
1992-1995	3yrs Master (PhD equiv.)	*EQF Level: 8*
	Optel InP & Università degli Studi di Lecce	
	• Semiconductor technologies for optoelectronics	
	• 1993: visiting student at the CNR–Lamel in Bologna (IT)	
1986-1992	M.Sc. degree in Electronic Engineering	*EQF Level: 7*
	University of Pavia (Italy)	

CURRENT POSITIONS:

2016 – to date	**Full Professor**
	Università del Salento, Dip. Ingegneria dell'Innovazione (Lecce – Italy)
	▪ Lecturer of " Biosensors and Wearable Technologies " and "Nanotechnologies for Electronics".
2014 – to date	**Director**
	Center for Biomolecular Nanotechnologies – Istituto Italiano di Tecnologia (Lecce – ITALY)
2014 – to date	**Principal Investigator**
	Istituto Italiano di Tecnologia – Research line "Nanotechnologies for humans and biosystems"

PREVIOUS POSITIONS

2010 –2016	**Associate Professor**
	Università del Salento, Dip. Ingegneria dell'Innovazione
2006 –2010	**Associate Professor and Deputy Director Nanoscience Dept.**
	Istituto Superiore di Formazione Interdisciplinare
2001 – 2006	**Assistant Professor**
	University degli Studi di Lecce (Italy)
1996-2000	**Technologist**
	Istituto Nazionale per la Fisica della Materia

HONORS/AWARD, EDITORIAL ACTIVITY

Honors/Awards

- 2023: Awardee of the **Novo Nordisk Foundation Research Laureate Grant**.
- 2018-2021: Awardee of an **NIH US Brain Initiative Grant** on new implantable probes for fiber photometry
- **ERC PoC European project** IN DEPTH (2021-2023)
- 2015-2018: Awardee of an **NIH US Grant** on Brain probes for optogenetics
- **co-PI, ERC AdG European project BrainBIT** (2016-2022)
- 2013: Invited Professor at Laboratoire Kastler Brossel – UPMC – University Pierre and Marie CURIE – (Paris – France)
- 2000: Invited scientist at Japanese Key Technology Center & ATR Laboratories (Kyoto – Japan)

- 2020: Founder of the "Salento Biomedical District" (Puglia – Italy)
- 2017-2021 Member of the IEEE EDS Nanotechnology committee

Editorial activity
- Senior Editor of IEEE Transactions on Nanotechnology
- Member of the Editorial Board of Elsevier – Microelectronic Engineering

SUPERVISION/TRAINING/TEACHING ACTIVITIES

I have been teaching to undergraduate students for over 20 years and I have given lectures in several international doctoral schools. As professor, I have mentored more than one hundred students between undergraduate (50+master project and ~ 50PhD students) and graduate students (postdocs). Several of my former students have a distinguished career in academic or industrial research.

ORGANISATION OF SCIENTIFIC MEETINGS
- Member of the steering committee MNE conference (2016-2018)
- Founding board member of the international Micro and Nano Engineering Society (iMNEs) (2018)
- Chair of several international conferences (MNE2010, MNE2021, founder of the Optogen Series, PLMCN9, TNT2018)

RECENT RESEARCH FUNDING AND. GRANTS

(last 10 years)
- **Novo Nordisk Foundation 2023 Research Laureate Grant** (2025-2031 – Budget: **7.00 M€**)
- **Project Coordinator**, **H2020 EU RIA project** DEEPER (2021-2025 – Budget: **1.24 M€**)
- **PI in 2 US NIH** projects (2015-2021 Brain Initiative)
- **Project Coordinator**, PON ITEM (2011-2015 – Budget: **9.37 M€**)
- **co-PI**, **ERC AdG project** BrainBIT (2016-2022 – Budget: **233 k€**)
- **PI**, **H2020 EU FET Open project** NanoBRIGHT (2019-2023 – **1.64 M€**)
- **PI, ERC PoC project** IN DEPTH (2021-2023 – **300 k€**)
- **Project Coordinator, European Space Agency** (2020-2022 – 200k€) SLEEP Monitor

Invited/keynote talks

More than 70 invited/keynote talks to international conferences

Patents and technology transfer

14 international patents. Consultant of high-tech corporations and founder/advisor of 5 startup companies.

Publications

INDEXES:
SCOPUS (December 10 2023):
- Total n. of publications: 430
- H-Index: 40
- ~80 publications as last author in the last 5 years
- Total number of citations: 6413

GOOGLE SCHOLAR (October 27 2023):
- H-Index: 48
- Total number of citations: 8509

Complete list of publications:
https://www.scopus.com/authid/detail.uri?authorId=23501214900

PERSONAL INFORMATION

Family name, First name: Pucci, Daniele

Researcher unique identifier(s): https://orcid.org/0000-0002-7600-3203

Date of birth: 15 September 1985

Nationality: Italian

URL for web site: https://www.iit.it/people-details/-/people/daniele-pucci

- **EDUCATION**

2013	PhD, Information Technologies
	University of Nice, prepared at INRIA, France
	<u>Name of PhD Supervisor:</u> Claude Samson, Tarek Hamel
2013	PhD, Control Engineering,
	Sapienza, Università di Roma, Italy,
	<u>Name of PhD Supervisor:</u> Salvatore Monaco
2009	Master in Control Engineering
	Sapienza, Università di Roma, Italy,

- **CURRENT POSITION(S)**

2021 – now	Principal Investigator, tenure track, Istituto Italiano di Tecnologia, director of the Artificial and Mechanical Intelligence dept. (about 50 members) www.ami.iit.it Genoa, Italy
2020 – now	Visiting Lecturer at University of Manchester, Machine Learning dept., Manchester, UK

- **PREVIOUS POSITIONS**

2017 – 2021	Researcher, Istituto Italiano di Tecnologia, head of the Dynamic Interaction Control lab (about 20 members) Genoa, Italy
2013 – 2017	Postdoc, Italian Institute of Technology, iCub Facility - Genoa, Italy
2015	Invited Researcher, Institut des Systemes Intelligents et de Robotique, University Pierre et Marie Curie, Paris, France
2013	Researcher, Laboratoire d'Informatique, Signaux et Syst`emes de Sophia-Antipolis (I3S) UNS/CNRS, Sophia Antipolis, France
2009 – 2012	PhD candidate, INRIA, Sophia Antipolis, France
2009 – 2010	Research engineer, ENEA, research center for new technologies, Frascati, Italy
2007	Project engineer, ELV-Avio, Colleferro, Italy

- **FELLOWSHIPS AND AWARDS**

2023	Responsible AI Change Maker, from Global Partnership on Artificial Intelligence (GPAI)
2023	Best paper finalist, IEEE ICRA, Physical Human-Robot Interaction category
2022	Finalist, ANA Avatar XPRIZE, iCub team
2021	Best Interactive Paper Award Finalist, , IEEE Humanoids, paper
2019	Innovator of the year under 35 Europe, MIT Technology Review
2019	Best presentation finalist, First Italian Conf. on Robotics and Intelligent Machines
2019	Best student paper award, Intelligent Systems Conference (IntelliSys)
2019	Best video blooper award, IEEE ICRA
2018	Outstanding paper, IEEE-RAS Humanoids, selected for publication to (IJHR)

2015 Top three research topics, Italian Sapio Prize, research and innovation under 30, total submissions: 141, online at http://www.daonline.info/pagine/45.pdf

2009 Academic Excellence, "Sapienza" University of Rome

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

2021 – 2023 My current team, the Artificial and Mechanical Intelligence, is composed of about 50 lab members, being distributed as about 10 research fellows, 15 PhD students (University of Genova, Manchester, Sapienza, Politecnico di Milano), 10 post-docs, 10 technicians and few guest students.

2017 – 2021 Dynamic Interaction Control (DIC), Italian Institute of Technology, Italy, a lab working on humanoid robotics counting 23 members Seven post-docs, Nine PhD, Six Fellows

- **ORGANISATION OF SCIENTIFIC MEETINGS**

2023 Financial chair of the conference IEEE Humanoids

20017 – 2023 Organizers of several workshops for the IEEE conferences

- **INSTITUTIONAL RESPONSIBILITIES**

2020 – 2023 National representative, Global Partnership on Artificial Intelligence (GPAI),

2020 – now Visiting Lecturer at University of Manchester, Machine Learning dept., Manchester, UK

- **REVIEWING ACTIVITIES**

2022 – now Project reviewer for the EU commission (MEMMO and Agimus EU Projects)

2018 – now Associate editor for IEEE RA-L

2013 – now Reviewer of top IEEE and Science Robotics journals

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

2023 Ellis Membership, Genoa unit, ellis.eu/units/genoa

PERSONAL INFORMATION

De Pietri Tonelli, Davide

Researcher unique identifier(s): ORCID https://orcid.org/0000-0001-9537-8900

Date of birth: 13/08/1971

Nationality: Italian

URL for web site: https://ncrna.iit.it

- **EDUCATION**

2011   PhD in Neurobiology, Univ. of Insubria, Varese (Italy). Thesis Title: "An integrated approach for the investigation of miRNAs in vivo".

1999   MSc Degree "Laurea Magistrale" in Mol. and Cell Biology, Univ of Milan (Italy); Topic: Functional investigation of Rho's family of small GTPases in neurite guidance.

- **CURRENT POSITION(S)**

2021 –   Senior Researcher (Tenured); PI of the Neurobiology of miRNA lab @IIT, Genoa (Italy); Role of ncRNAs in adult neurogenesis and RNA therapies for brain diseases

- **PREVIOUS POSITIONS**

2014 – 2021   Senior Researcher (Tenure-Track); PI of the Neurobiology of miRNA lab @IIT, Genoa (Italy); Topic: Role of ncRNAs in adult neurogenesis and age-related brain diseases

2008 – 2013   Researcher (Team leader) @IIT, Genoa (Italy) Topic: Role of miRNAs in mouse embryonic neurogenesis and neurodevelopmental disorders

2004 – 2008   Research fellow at Max Planck Institute of Molecular Cell Biology & Genetics, Dresden, Germany (Advisor Prof. Dr. W. Huttner, Director); Topic: Role of miRNAs in mouse embryonic neurogenesis

2006 – 2007   Collaborator at Clontech Inc. (now Takara, Mountain View, CA, USA); Topic: Fluorescent sensors for in vivo miRNA detection/monitoring at single-cell resolution

1996 – 2003   Research fellow at S. Raffaele inst. Milan, Italy (Advisor Prof. F. Grohovaz) Topic: Translational control of BACE1 mRNA in Alzheimer's disease

- **FELLOWSHIPS AND AWARDS**

2023   National Scientific Habilitation for Full Professorship in Molecular Biology

2011   "Best Speaker" award, Conference: "Molecular Mechanisms in Neurosciences", Accademia Nazionale dei Lincei, Rome Italy. Oct 3-4.

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

2008 – Present Supervised 10 Post-Doc and 6 PhD students; 1 PhD student co-supervised; 2 PhD students currently supervised (UK); 2 PhD students currently supervised (@IIT); a total of 16 PhD students examined (NL, CH, ES; and IT)

2004-2008   Co-supervised 2 PhD students (DE)

- **ORGANISATION OF SCIENTIFIC MEETINGS (selected out of 5)**

2022   Co-organizer of the 1st IIT-Collège de France Joint Neuroscience Meeting. Paris, FR. (~50 attendees)

2017	Co-organizer/Chair/lecturer of the Workshop "Emerging complexity and functions of miRNAs-dependent regulation in neuroscience", 12th German Neuroscience Society meeting, Göttingen, DE. www.nwg-goettingen.de/2017 (~200 attendees)
2014	Co-organizer and Lecturer; Symposium on microRNAs in brain development ad function, 9th FENS forum, Milan, IT, http://fens2014.neurosciences.asso.fr/ (>300 attendees)
2012	Chairman/lecturer at 7th International MicroRNAs Meeting Europe. Symposium "MicroRNAs in Development". Nov. 1 - 2. University of Cambridge, UK. (~200 attendees)

- **INSTITUTIONAL RESPONSIBILITIES**

2008 –	Board member of the Univ. of Genoa PhD school @IIT
2022	Neuroscience Facility Coordinator (for six months, *ad interim*)
2022	Committee member for the promotion to the Head of the Neurofacility at IIT Genoa
2022	Committee member for the promotion to Tenured Researcher at IIT Genoa
2021	Committee member for the promotion to Technologist position at IIT Milan

- **REVIEWING ACTIVITIES**

2015 and 2018	Grant reviewer for the Swiss National Research Foundation, CH
2017	Grant reviewer for the Royal Society-Welcome-Trust, UK
2011	Grant reviewer for the Singapore Medical Research Council, SG
2010	Grant reviewer for the IIT-Seed Grants for Italy
2009	Editorial board member, Frontiers in Neuroscience (Sections Neural technology; Molecular Neuroscience Archive and Neuroplasticity and Develpoment)
Since 2008	Reviewer for Scientific Journals (listed in alphabetical order, several reviews/year): AAAS Science Adv.; Biol. Psych.; Brain Plast.; Cell. Mol. Life Sci.; Development; Developmental Biol.; eLife; EMBO. Rep; Front. Neurosci; Front. Genetics; Helyon; Human Mol. Gen; iScience; J. Neurosci.; Mol. Neurobiol.; Mol. Psychiatry; Nature Comm.; Neuron; Nucl. Acids Res.; PNAS; Prog. Neurobiol., RNA Biol.; RNA; Sci. Reports; Stem Cells Dev.; Stem Cell. Rep.; Trend. Biotech.

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

2008 – present	Full Member of RNA Society https://www.rnasociety.org/ (since 2008);
2010 – present	Member of the International Society for Stem Cells Research http://www.isscr.org/
2015– present	Associate Member, Japan Neuroscience

- **MAJOR COLLABORATIONS**

S. Gustincich; PI Non-coding RNAs and RNA-based therapeutics IIT, Genoa; Topic, piRNA/Transposable Elements

Gerd Kempermann, Director, CRTD and Deutsches Zentrum für Neurodegenerative Erkrankungen (DZNE), Dresden, Germany. Adult Neurogenesis

Piero Carninci RIKEN Center for Integrative Medical Sciences, Yokohama, Japan. Transposable elements

Industrial collaboration with Tecniplast Spa, Buguggiate, VA, Italy.

Current grants (Please indicate "No funding" when applicable):

Project Title	Funding source	Amount (Euros)	Period	Role of the PI	Relation to current proposal
Differentiation therapy for GBM through synergic action of 11 miRNAs/drugs delivered via polymeric nanoparticles	AIRC	600K	2018-2024	PI	None
National Center for Gene Therapy and Drugs based on RNA Technology	Italian Ministry of University and Research - PNRR	500K	2022-2025	PI	None
AstRNAuts	Agenzia Spaziale Italiana	100K	2023-2024	PI	None

PERSONAL INFORMATION

Family name, First name: Latella, Claudia

Researcher unique identifier(s): ORCID 0000-0003-4792-4588

Date of birth: 05/11/1986

Nationality: Italian

URL for web site: https://claudia-lat.github.io/

- **EDUCATION**

2014-2018	PhD in Cognitive Robotics, Interaction and Rehabilitation Technologies
	Italian Institute of Technology, University of Genoa, Italy
	Francesco Nori
2009-2011	MEng in Bioengineering
	Faculty of Engineering, University of Genoa, Italy

- **CURRENT POSITION(S)**

2021 – present	Senior technician
	Artificial and Mechanical Intelligence (AMI), Italian Institute of Technology, Genoa, Italy
2018 – 2021	Post Doc Researcher
	Dynamic Interaction Control (DIC), Italian Institute of Technology, Genoa, Italy

- **FELLOWSHIPS AND AWARDS**

2014 – 2018	PhD Fellow
	Dynamic Interaction Control (DIC), Italian Institute of Technology, Genoa, Italy
2017	Visiting PhD Fellow
	Adaptive Systems Lab, Electrical and Computer Engineering Dept., University of Waterloo (UW), Ontario, Canada
2023	LIONS PREMIO DONNA TALENTO - L'ingenium femminile alla frontiera della conoscenza, Lions Clubs International - Distretto 108 AB, Italy
2019	Springer/IFToMM Lagrange Award 2019 for the Best Phd Thesis on Multibody Dynamics - "Human Whole-Body Dynamics Estimation for Enhancing Physical Human-Robot Interaction", in ECCOMAS Thematic Conference on Multibody Dynamics, Duisburg, Germany, July 15-18, 2019
2015	ECSA-2 Best Paper Award - Latella, C.; Kuppuswamy, N.; Nori, F. "Force and motion capture system ba- sed on distributed micro-accelerometers, gyros, force and tactile sensing" - 2nd International Electronic Conference on Sensors and Applications (ECSA) November 15-30, 2015

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

2017	2 Master Students
	Electronics, Informatics and Bioengineering, Politecnico di Milano

- **ORGANISATION OF SCIENTIFIC MEETINGS**

2022 ICRA 2022 workshop: co-organized with Maurice, P. ; Huber, M.E. ; Ivaldi, S. ; Ajoudani, A. "4th Workshop on Integrating Multidisciplinary Approaches to Advance Physical Human-Robot Interaction : Challenges of Interfacing Wearable Robots with the Human Neuromotor System" - ~200 participants - Philadelphia, USA, https://project.inria.fr/phrc2022icra/

2021 ICRA 2021 workshop: co-organized with Maurice, P ; Huber, M.E. ; Ivaldi, S. ; Ajoudani, A. "3rd Workshop on Integrating Multidisciplinary Approaches to Advance Physical Human-Robot Interaction : Physical Assistance for Occupational Applications"- Virtual event, https://project.inria.fr/phrc2021icra/

2020 ICRA 2020 workshop: co-organized with Maurice, P.; Huber, M.E. ; Ivaldi, S. ; Ajoudani, A. "2nd Workshop on Integrating Multidisciplinary Approaches to Advance Physical Human-Robot Interaction" - Virtual event, , https://phrc2020icra.loria.fr/

2019 ICRA 2019 workshop: co-organized with Maurice, P ; Ivaldi, S. ; Huber, M.E. ; Latella, C. ; Hogan, N. "1st Workshop on Integrating Multidisciplinary Ap- proaches to Advance Physical Human-Robot Interaction : Human movement science for physical human-robot collaboration" - ~200 participants - Montreal, Canada, http://hms2019icra.mit.edu

PERSONAL INFORMATION

Family name, First name: Gino,Alice

Researcher unique identifier(s) (such as ORCID, Research ID, etc. ...):

Date of birth: 09/06/1988

Nationality: Italian

URL for web site:

- **EDUCATION**

2013   Master
              Biotecnologie Medico-Farmaceutiche, University of Genoa, Italy

- **CURRENT POSITION(S)**

2016 – now   Junior laboratory technician
              Neuromodulation of Cortical and Subcortical Circuits, IIT, Genoa, Italy

- **FELLOWSHIPS AND AWARDS**

2015 – 2016   Fellowship, Molecular Diagnostic Lab, A.O.U IRCCS San Martino Hospital, Genoa, Italy
2014 – 2015   Fellowship, Bioterapies Lab, A.O.U IRCCS San Martino Hospital, Genoa, Italy

- **INSTITUTIONAL RESPONSIBILITIES**

2022   Lab Safety responsible, IIT, Genoa, Italy
2022   First Aid assistant, IIT, Genoa, Italy
2020   Fire officer, IIT, Genoa, Italy

IL LEGALE RAPPRESENTANTE

Nome Cognome

Firmato digitalmente

ALLEGATO C

TABELLA COSTI PERSONALE STANDARD			COSTO DEL PERSONALE
FASCIA DI COSTO /LIVELLO	**NUMERO SOGGETTI**	**COSTO ORARIO vedi nota**	**MONTE ORE**	
Basso				- €
Medio				- €
Alto				- €
TOTALI	**0**		**0**	- €

COSTO ORARIO: si deve far riferimento al Decreto Interministeriale n. 116 del 24/1/2018

BUDGET DI PROGETTO	COSTO DEL PERSONALE	OVERHEAD	Costi per servizi di Consulenza Specialistica	Costi per licenze direttamente imputabili al progetto	Costi per materiali e attrezzature direttamente imputabili al progetto	Costi per altre tipologie di spese direttamente imputabili al progetto	COSTO TOTALE
	0,00 €	0,00 €	0,00 €	0,00 €	141.000,00 €	9.000,00 €	150.000,00 €