

MSCA Postdoctoral Fellowship Opportunity 2026

Unlocking Cellular Senescence: The Systems Biology of Metabolic Aging

Department of Translational Medical Sciences – University of Naples Federico II (Italy)

Supervisor: Dr. Rosa Spinelli, Assistant Professor in Clinical Pathology

The Opportunity

The **Laboratory of Metabolic Epigenetics and Cellular Senescence** at the **University of Naples Federico II**—one of the oldest and most prestigious academic institutions in Italy, established in 1224—invites ambitious, high-potential postdoctoral researchers to jointly apply for the [2026 Marie Skłodowska-Curie Postdoctoral Fellowship \(MSCA-PF\)](#).

We seek a candidate to co-develop a competitive proposal that pushes the boundaries of geroscience within a world-class translational research setting. We aim to redefine how chronic metabolic stress is encoded through cellular senescence, becoming biologically embedded across tissues and emerging as a fundamental driver of long-term disease and aging trajectories.

This call represents a premier opportunity for researchers seeking to align themselves with the EU's most prestigious career development award, offering a definitive platform to establish international leadership in the field of geroscience and translational metabolic research.

Our environment is specifically designed to maximize the competitiveness of MSCA-PF applications through close mentorship, project co-design, and integration into a strong international network.

Our Scientific Vision

Our research investigates **how cellular senescence links aging biology to major metabolic disorders**, such as obesity, type 2 diabetes, metabolic dysfunction-associated steatotic liver disease (MASLD), and cardiometabolic disease. We **challenge the traditional view of aging** by examining how sustained metabolic perturbations arising from lifestyle-linked contexts become biologically embedded in insulin-responsive tissues, accelerating biological aging regardless of mere chronology.

By **integrating a multi-layered approach**, including molecular biology, advanced epigenetics, RNA regulation, and high-resolution omics, within translational studies of deeply phenotyped human cohorts, we decode **how senescence programs are initiated and propagated across metabolically active tissues**.

The laboratory focuses on how distinct senescence states emerge across metabolically active tissues, how they are maintained through epigenetic and post-transcriptional regulation, including regulatory axes linking RNA biology and stress responses to senescence commitment, such as the ZMAT3–p53 pathway, and how their accumulation shapes trajectories toward age-related disorders. In parallel, we investigate senescence-associated molecular patterns detectable in circulation as quantitative proxies of tissue-

specific senescence states and as entry points for biologically informed patient stratification and precision-oriented senotherapeutic strategies.

A Strategic Career Move

Joining our laboratory is a transformative career step within a strongly multidisciplinary environment integrating **Laboratory and Internal Medicine, Medical Statistics, Bioinformatics, and Pharmacology**. Fellows will benefit from:

- **Direct Clinician Interaction:** Engagement, in a cross-sectoral and interdisciplinary environment, with clinicians and translational researchers with access to well-characterized patient cohorts.
- **Attractive working and employment conditions:** Full access to institutional benefits, and a supportive, inclusive, and international research environment.
- **Advanced Platforms:** Access to state-of-the-art analytical and genomic platforms.
- **Global Excellence Network:** Collaborations with leading centers, including the **Universities of Gothenburg and Leipzig**, and the Interdepartmental Center of Services (CIS) at the University “Magna Græcia”.
- **Leadership & Mobility:** Our laboratory leads a dedicated thematic topic within **COST Action SENESCENCE2030**, offering structured opportunities for secondments, co-supervision, and integration into elite European research networks.
- **MSCA-Focused Mentorship:** Dedicated support in proposal writing, project structuring, and career positioning to maximize success in the MSCA-PF call and beyond.

Your Profile & Our Commitment

We welcome highly motivated, independent-minded candidates with background and interest in cell biology, molecular biology, epigenetics, computational biology, cellular senescence, metabolism, or aging.

We particularly value candidates eager to develop an original and ambitious research proposal aligned with cutting-edge questions in senescence and metabolic aging.

We are committed to fostering your independent scientific profile and interest in expanding into interdisciplinary senescence/metabolic aging research by providing mentorship in grant writing, leadership, and international networking.

How to Apply

Candidates interested in this opportunity should complete the **MSCA-PF Expression of Interest Form** at the following link <https://www.edc.dismet.unina.it/surveys/?s=EFCWETDKFJ3CP89H>.

Applications will first undergo an initial screening to verify eligibility and evaluate the scientific profile of applicants.

Shortlisted candidates will then be invited to attend a preparatory webinar introducing the MSCA-PF scheme, the research environment of the host laboratory, and the proposal development process.

Following this step, a limited number of candidates will be selected to work closely with the host laboratory on the preparation of a competitive MSCA-PF proposal. Selected applicants will receive dedicated support throughout the proposal development phase, including project design, mentorship, and integration into our international research network.

Please note: Applicants must comply with MSCA mobility rules (must not have resided or worked in Italy for more than 12 months in the 36 months before the call deadline).

Submit your Expression of Interest

Scan the QR code to access the application form instantly.

