



# RESETageing

## Newsletter | October 31, 2022

Lino Ferreira, Project Coordinator

Dear RESETageing partners:

It is my pleasure to share with you the third RESETageing newsletter. In this newsletter we cover the second RESETageing training school and RESETageing conference organized at Newcastle University. We also highlight some outreach activities organized by RESETageing researchers.

Please remember to regularly visit our website at <https://resetageing.eu> for RESETageing project updates and news. In case you are planning to organize an event let us know in advance through the email [RESETageing@uc.pt](mailto:RESETageing@uc.pt)

Best wishes  
Lino

## RESETageing Conference 2022

On the 16th and 17th of September 2022 the 2nd RESETageing conference occurred at Newcastle University and it gathered all partners of the consortium in a total of 60 registrations.

The conference was organized by Satomi Miwa (UNEW), Viktor Korolchuk (UNEW), Thomas von Zglinicki (UNEW) and Luis Estronca (UC). The topics of the conference were: Ageing: from model systems to humans Cell Senescence (Adam Antebi, University of Cologne; Miles Witham, Newcastle University), Biology of Ageing (Dudley Lamming, University of Wisconsin; Henrique Girão, University of Coimbra), Mechanisms of Ageing (Vera Gorbunova, University of Rochester; Alberto Sanz, University of Glasgow), Senescence and Ageing (Masashi Narita, Cancer Research UK Cambridge Institute; Satomi Miwa, Newcastle University), Molecular turnover in Ageing (David Vilchez, University of Cologne, Ira Milosevich, University of Coimbra), age-related disease and anti-ageing interventions (Paula da Costa Martins, Maastricht University). We had 15 short communications selected from the submitted abstracts which together with the invited speakers and the session posters all contributed for the success of this conference. We all have a very pleasant gala dinner at the Newcastle United Football Stadium in St. James' Park, where we were very well received. We thank all participants for the fruitful and participative conference.



## RESETageing training school 2022

The 2nd RESETageing training school was held from 12th to 15th of September at Newcastle University. It was organised by Satomi Miwa and Newcastle University Flow Cytometry Core facility (Drs. Andrew Filby and David McDonald). The topic was single cell techniques in senescence and ageing, covering full spectrum flow cytometry, mass cytometry and Seahorse analyser. 15 students from the RESETageing consortium were selected and enjoyed the opportunities for hands-on experiments with the state-of-art technologies.

We want to thank Satomi Miwa, Andrew Filby, David McDonald for the organization of this fantastic training school.

## Upcoming RESETageing Events

### RESETageing Workshop in Innovation and Business Ignition Program in Ageing

The Workshop in Innovation and Business Ignition Program in Ageing will take place in University of Coimbra between 16 and 17 of January 2023.

The objective of this Program is to provide efficient training in the area of Innovation, facilitating the creation of Go to Market plans for the most promising technologies related to ageing and the maturation of the Go to Market plans into an early stage business.

6 teams will be formed by 2-3 members.

16-27 January 2023

Each candidate should apply with a technology, preferably protected by Intellectual Property. RESETageing will train researchers on how to make a Go to Market plan and to foster a value proposition for their technologies.

When to apply? From 15/11/2022 to 15/12/2022

Who can apply? Only students/researchers from RESETageing groups

How to apply? Through an application form that will be sent all RESETageing partners

The costs to be covered will include registration fees, traveling, accommodation and daily subsistence. After the Ignition program the project with the highest potential will be awarded 5.000 euros.

Any question can be addressed to Laura Alho ([lauraalho@uc.pt](mailto:lauraalho@uc.pt)) or to Luis Estronca ([estronca@uc.pt](mailto:estronca@uc.pt))

## Support of International CONFERENCES

RESETageing supported the organization of sessions in the following international conferences

- 12th Meeting SPCE-TC | March, 2022  
- 56th Annual Meeting ESCI | June, 2022

- 7th International Cell Senescence Association Conference (ICSA), Groningen | 29th September - 1st October, 2022  
- Symposium: The Bioengineering – One Health Alliance in 2050: A One-Day Voyage into the Future, Porto | 27th October, 2022

- Workshop Ageing without Borders, Faro | December 6-7th, 2022  
<https://awb2022.wixsite.com/website>

## COLLABORATION PROJECTS within RESETageing Consortium

### Bio-Med

Engenharia Biomolecular de Vesículas Extracelulares para Medicina Regenerativa

#### Team member

Lino Ferreira, Paula da Costa Martins, Hugo Fernandes

Funding agency: CENTRO2020

Period: Jul 2022 - Oct 2022

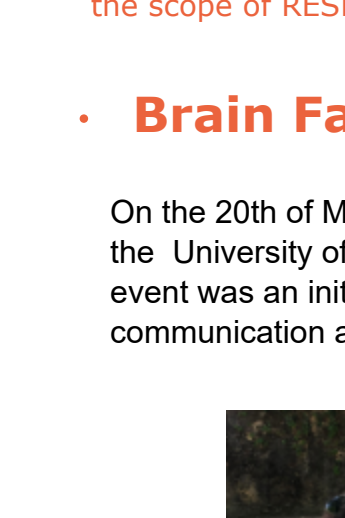
### PhD thesis with supervisors from the RESETageing partners (ongoing)

"Pre-clinical validation of senolytics for brain tumour adjuvant therapy (SENOBRITE)". PhD thesis of Laura Carvalho. Supervisors: Lino Ferreira and Thomas von Zglinicki.

"Combinatorial intervention to treat myocardial infarction". PhD thesis of Ana Carolina Santo Mendes. Supervisors: Lino Ferreira and Paula Costa Martins.

"Unravelling and treating blood-brain barrier dysfunction upon ageing". PhD thesis of João Pedro Ferreira da Costa Novo. Supervisors: Lino Ferreira, Thomas von Zglinicki and Susana Rosa.

## RESETageing MEMBERS EXCHANGE



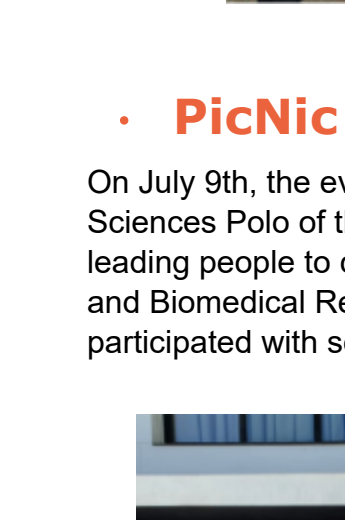
Maria Cardoso

I'm a PhD student at the research group of Henrique Girão (University of Coimbra), where I work in the cardio-oncology field. Part of my work is focused on a membrane protein canonically associated with gap junctions called Connexin43. Through a collaboration with Viktor Korolchuk's Lab (Newcastle University), I'm assessing the non-canonical role of this protein on lysosome functioning and trafficking. During this exchange I was included in a very exciting environment, which allow me to interact and learn from other scientists with different backgrounds, improving my technical and scientific skills.



Daniela Marinho

I'm a second year PhD student at "Mitochondria and Neurodegenerative disorders" group headed by A. Cristina Rego at the Center for Neuroscience and Cell Biology (CNC), at the University of Coimbra. My work has been focused on studying transcriptional regulation of mitochondrial function by HDAC inhibitors as a potential therapeutic approach in Alzheimer's disease, an age-related neurodegenerative disease. I will join Viktor Korolchuk's lab at Newcastle University to analyze the influence of HDAC inhibitors on cellular senescence.



Beatriz Martins

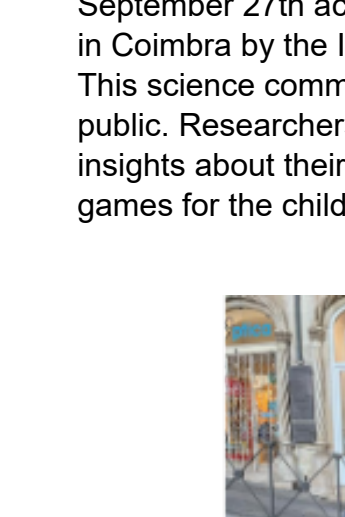
I'm a second-year PhD student at the Lab of Rosa Fernandes at the Coimbra Institute for Clinical and Biomedical Research (ICBR, Faculty of Medicine, University of Coimbra). My PhD project is focused on the role of extracellular vesicles in the development and progression of age-related macular degeneration. This year, I had the pleasure to attend to my second RESETageing training school and conference, which provided me the knowledge of new emerging techniques in ageing research. This collaboration between excellent institutes is a unique opportunity for exchanging knowledge which is extremely beneficial for PhD students within the scope of our academic path.



Patricia Pitrez

I'm a post post doctoral researcher at Lino Ferreira's lab (CIBB, University of Coimbra), developing a Research Line that combines ageing with bioengineering (micro-and nanotechnologies) to develop new treatments for biological and pathological cardiovascular aging. During the last years, I established different platforms for developing treatments for aged individuals, based on pathological ageing, namely, Progeria Syndrome. The generated results increased our knowledge to treat also physiological cardiovascular ageing with the hope of increasing individuals' health span.

In September, 2022, I joined Dr. Alessandro Ori's laboratory, as a visiting research for 1 month, at the Leibniz Institute for Ageing, Jena, Germany, studying how age and environmental factors affect cardiac cells at the molecular level.



Susana Rosa

I'm a researcher at Advanced Therapies Group, headed by Lino Ferreira at Centre for Innovative Biomedicine and Biotechnology, University of Coimbra. My investigation is focused on the development of in vitro models to study and treat vascular ageing. During the last years, I have made advances on the study of the aged blood-brain barrier (BBB) as well as on the development of an aged in vitro BBB model. This will help understand how BBB structure and function is altered with physiological ageing and contribute for the identification of anti-ageing therapies for the BBB.

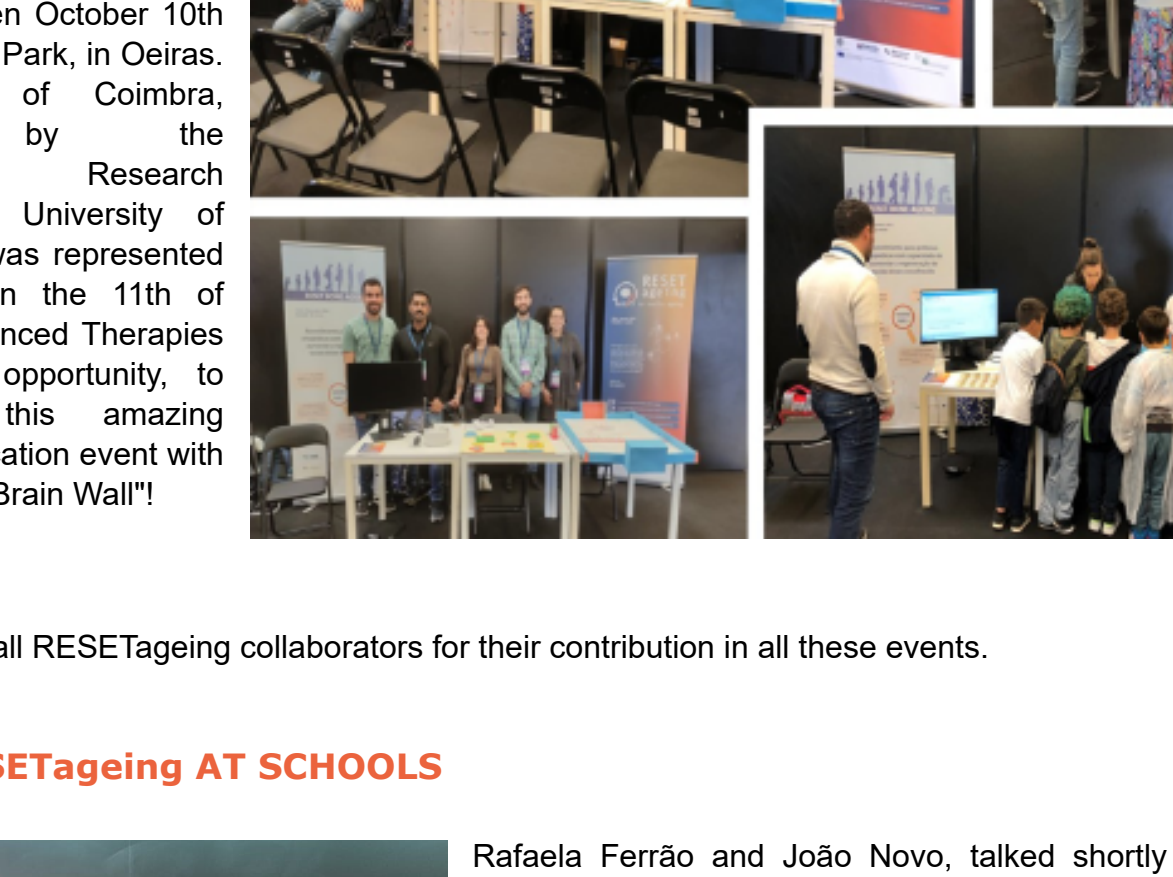
I am looking forward for February 2023 when I will join Dr. Satomi Miwa and Professor Thomas von Zglinicki laboratory, as a visiting researcher at the University of Newcastle, Newcastle, UK, where we will exchange expertise on mechanisms of age induced vascular dysfunction.

## Outreach Activities

All partners of RESETageing Consortium are encouraged to participate in outreach activities in the scope of RESETageing project in national and international events.

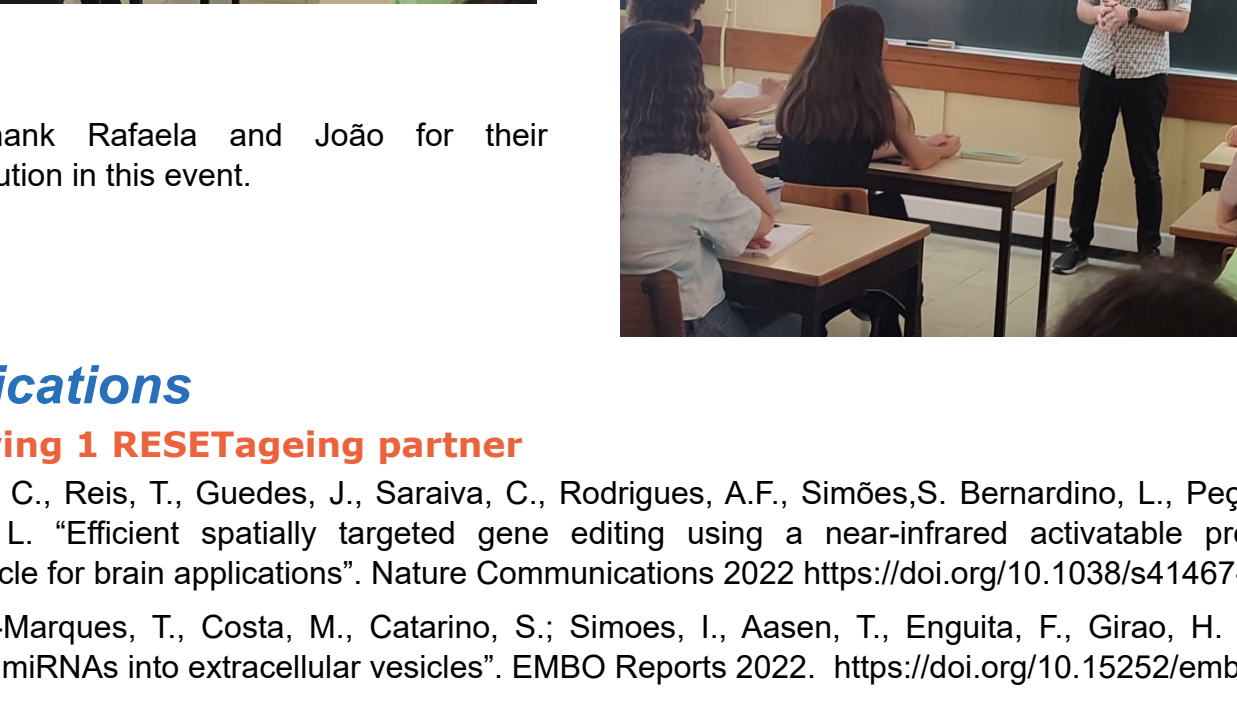
### • Brain Fair 2022

On the 20th of May, the "Brain Fair" organized by the Center for Neuroscience and Cell Biology at the University of Coimbra, took place in the Botanical Garden of the University of Coimbra. This event was an initiative within the scope of the #BrainAwarenessWeek and it was focused on science communication and public engagement, where RESETageing project was presented.



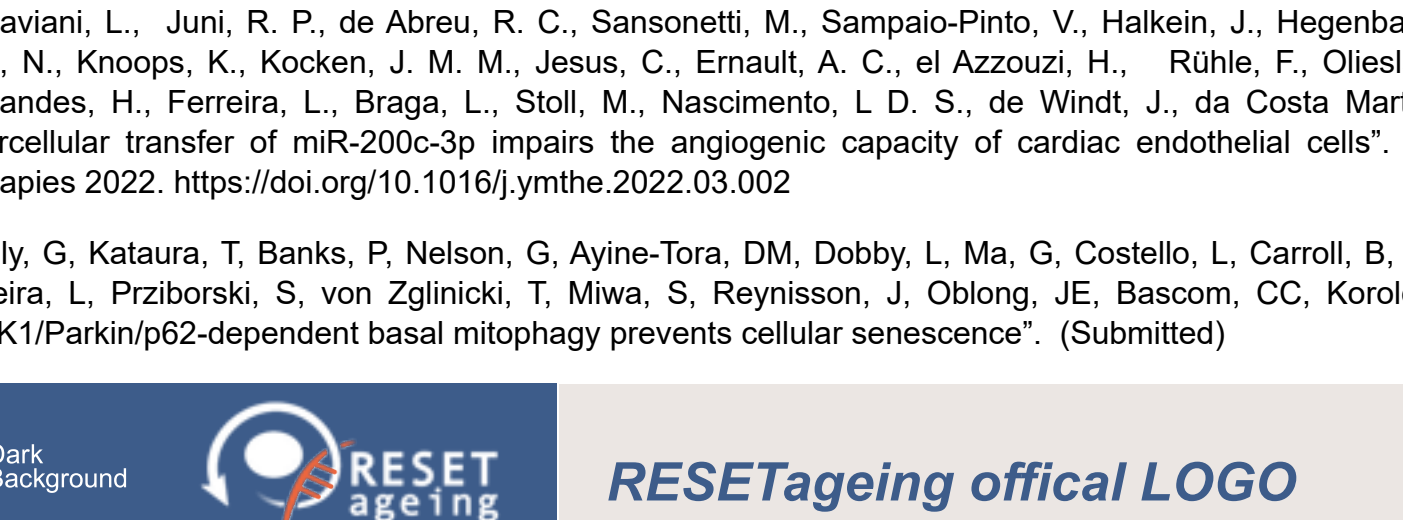
### • PicNic com Saúde

On July 9th, the event "PicNic com Saúde" (in English: PicNic with Health) took place at the Health Sciences Polo of the University of Coimbra. This event aimed to promote and disseminate science leading people to choose healthier habits. It was organized by ICBR - Coimbra Institute for Clinical and Biomedical Research in partnership with several other entities. RESETageing UC collaborators participated with several activities for different age groups focusing mainly on the ageing process.



### • European Researchers' Night 2022

The University of Coimbra participated in the European Researchers' Night 2022 that occurred September 27th across all Europe and RESETageing project was present. This event was organized in Coimbra by the Institute of Interdisciplinary Research (iiiUC) with collaboration with other entities. This science communication activity was developed in Coimbra Downtown and involved the general public. Researchers from RESETageing had the opportunity to interact with the public given some insights about their projects and about the ageing process using a virtual reality video and with some games for the children to get interested and involved in this thematic.



### • FIC.A - International Science Festival 2022

More than 50 students from primary schools had the opportunity to participate in our activities at the FIC.A - International Science Festival 2022 (<https://en.fica.pt/>) which took place between October 10th and 16th at Tagus Park, in Oeiras. The University of Coimbra, coordinated by the Interdisciplinary Research Institute of the University of Coimbra (iiiUC), was represented at the FIC.A. On the 11th of October, the Advanced Therapies group had the opportunity, to participate in this amazing science communication event with the activity: "The Brain Wall!"



We thank all RESETageing collaborators for their contribution in all these events.

### • RESETageing AT SCHOOLS



Rafaela Ferrão and João Novo, talked shortly about their research projects "Brain shuttles to eliminate aged brain cells" and "Unravelling and treating blood-brain barrier dysfunction upon ageing" to 10th-grade students from Jaime Cortesão High School, in Coimbra. This was an initiative integrated in the Advanced Course "Connecting Researchers with the Society and Industry" from BEB Doctoral Program



We thank Rafaela and João for their contribution in this event.

## Publications

### • Involving 1 RESETageing partner

- Rebelo, C., Reis, T., Guedes, J., Saraiva, C., Rodrigues, A.F., Simões, S., Bernardino, L., Peça, J., Pinho, S., Ferreira, L. "Efficient spatially targeted gene editing using a near-infrared activatable protein-conjugated nanoparticle for brain applications". Nature Communications 2022 <https://doi.org/10.1038/s41467-022-31791-6>

- Martins-Marques, T., Costa, M., Catarino, S., Simoes, I., Aasen, T., Enguita, F., Girao, H. "Cx43-mediated sorting of miRNAs into extracellular vesicles". EMBO Reports 2022. <https://doi.org/10.15252/embr.202154312>

### • Involving 2 RESETageing partners

- Fernandes, H., Zonnari, A., Abreu, R., Aday, S., Barão, M., Albino, I., Lino, M., Branco, A., Seabra, C., Barata, T., Leal, E., Tralhão J., G., Gonçalves, L., Jong, A., Peters, H., Vries, M., Martins, P., Quax, P., Ferreira, L. "Extracellular vesicles enriched with an endothelial cell pro-survival microRNA affects skin tissue regeneration". Molecular Therapy 2022, <https://doi.org/10.1016/j.omtn.2022.03.018>

- Vilaça, A., Windt, L., Fernandes, H., Ferreira, L. "Nano-platforms for cardiovascular delivery of non-coding RNAs". Trends in Molecular Medicine 2022 (accepted).

- Deolinda Santinha, Andreia Vilaça, Luis Estronca, Svenja C. Schüller, Annachiara De Sandre-Giovannoli, Tilo Pompe, Alessandro Ori\* and Lino Ferreira\*. "Remodeling of the cardiac extracellular matrix proteome during chronological and pathological aging". (in preparation).

### • Involving 3 RESETageing partners

- Ottaviani, L., Juni, R. P., de Abreu, R. C., Sansonetti, M., Sampaio-Pinto, V., Halkein, J., Hegenbarth, J. C., Ring, N., Knoops, K., Kocken, J. M. M., Jesus, C., Ernault, A. C., el Azzouzi, H., Rühle, F., Olieslagers, S., Fernandes, H., Ferreira, L., Braga, L., Stoll, M., Nascimento, L. D. S., de Windt, J., da Costa Martins, P. A. "Intercellular transfer of miR-200c-3p impairs the angiogenic capacity of cardiac endothelial cells". Molecular Therapies 2022. <https://doi.org/10.1016/j.ymthe.2022.03.002>

- Kelly, G., Katura, T., Banks, P., Nelson, G., Ayine-Tora, DM, Dobby, L., Ma, G., Costello, L., Carroll, B., Lovat, P., Ferreira, L., Prziborski, S., von Zglinicki, T., Miwa, S., Reynisson, J., Oblong, JE, Bascom, CC, Korolchuk, VI. "PINK1/Parkin/p62-dependent basal mitophagy prevents cellular senescence". (Submitted)

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## RESETageing official LOGO

We kindly ask all the members of RESETageing consortium to use this logo whenever RESETageing project is mention.

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## FINAL REMARKS

Publications or presentations resulting from work developed under the scope of RESETageing have to include the following sentence and the EU flag: "This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 952266".

Please send your suggestions to [RESETageing@uc.pt](mailto:RESETageing@uc.pt)