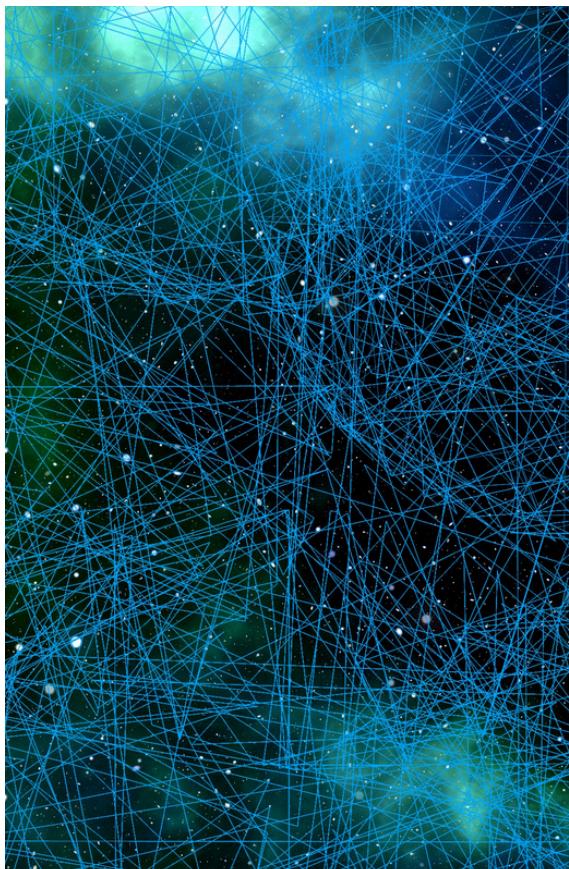


PIANO NEWSLETTER

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What we know is a drop, what we don't know is an ocean.

Isaac Newton

3RD PIANO ANNUAL MEETING COUPLED WITH THE FINAL CONFERENCE

WHEN

16-17th May 2024

WHERE

Elche (Spain) and Online



Organizing Committee:
Antonio Ferrer-Montiel (UMH)
Marzia Malcangio (KCL), Olivia Simmonds (KCL)

ABOUT THE 3RD ANNUAL MEETING AND FINAL CONFERENCE

The third annual meeting and final conference of the PIANO project, held on May 16, 2024, at Universidad Miguel Hernández in Elche, Spain, was a resounding success. The event, hosted by Antonio Ferrer Montiel, was chaired by Marzia Malcangio, Erik Agner, Gonçalo Bernardes, Marc Vendrell, Nikita Gamper, Tracey Pirali, and Asia Fernandez Carvajal. All the Early Stage Researchers (ESRs), beneficiaries, and coordinators participated either in person or virtually, contributing significantly to the event's success.

The proceedings began with an inspiring welcome address by Antonio Ferrer Montiel, followed by a progress update and research program overview presented by the current project manager, Olivia Simmonds, and the project coordinator, Marzia Malcangio. The main session was structured into four symposia, each focusing on a specific work package and featuring a keynote session followed by ESR presentations.

The first symposium addressed work package 1 (WP2.1) on biomaterials, nanoparticles, and imaging under the leadership of Chemprecise. It was chaired by Erik Agner, CEO of Polypure AS, Norway. The keynote speaker, Professor Roberta Censi from the School of Pharmacy, University of Camerino, Italy, delivered a presentation on delivering drugs and imaging probes into the dorsal root ganglia using biomaterial-based approaches, followed by four ESR presentations (ESRs 1, 3, 7, and 11). This was succeeded by an engaging poster discussion.

The second symposium, focusing on neurosurgery from work package 2 (WP2.2) under the leadership of the University of Camerino, was chaired by Professor Gonçalo Bernardes from the University of Cambridge. Professor Ronaldo Ichiyama from the Faculty of Biological Sciences, University of Leeds, UK, delivered the keynote address on the neuromodulation of spinal circuits, focusing on neurorehabilitation and recovery of function following severe spinal cord injuries. ESR 5 then presented her research findings. The morning session concluded with a plenary talk on "TRPM8 Modulators to Relieve Neuropathic Pain: A Medicinal Chemistry Program," chaired by Marc Vendrell from the University of Edinburgh, featuring a lecture by Professor Rosario Gonzalez Muniz from Instituto de Química Médica, CSIC, Spain.

The third symposium, focusing on Work Package 3 (WP2.3) – Neuropathic Pain: Mechanisms of Action under the leadership of Universidad Miguel Hernández de Elche (UMH), was chaired by Nikita Gamper from the University of Leeds, UK. The keynote speaker, Dr. Felix Viana from Instituto de Neurociencias, UMH-CSIC, Alicante, Spain, delivered a talk on the "Pathophysiology of thermoTRP channels." This was followed by presentations from ESRs 6, 9, 10, and 15.

Finally, the fourth symposium, targeting work package 4 (WP2.4) on the inflammatory process under the leadership of King's College London (KCL), commenced. This session was chaired by Tracey Pirali, with a keynote lecture by Professor Andrew J. Shepherd from MD Anderson Cancer Center, University of Texas, USA, on "Fibroblast Control of Macrophage Phenotype in Chronic Pain States." This was followed by presentations from ESRs 8 and 13.

The event concluded with a closing lecture chaired by Asia Fernandez Carvajal and delivered by Professor Tim Hucho from the Faculty of Medicine, University of Cologne, Germany, on "Translational Pain Research" and the day's session ended with a closing ceremony addressed by Marzia Malcangio and Antonio Ferrer Montiel.

By ESR Board

ESRS' STORIES | SECONDMENT

ESR10 - Georgia Goutsiou

Host Institution: UPO | Secondment host: UMH

This year, I had the opportunity to return to Professor Antonio Ferrer-Montiel's lab at the IDIBE Institute, University Miguel Hernandez, Spain, for a second secondment. Building on last year's experience, I focused on further advancing my skills in electrophysiology, particularly with sodium ion channels. I spent my time screening the compounds I had synthesized back in Italy, working with adult rat dorsal root ganglia (DRG) and HEK-293 cell cultures to test their effects. My training expanded significantly, allowing me to dive deeper into the experimental work and gain more independence in the lab. I also had the chance to refine my skills in techniques that help us understand how these compounds interact with ion channels, contributing to our broader research goals. The experience was incredibly rewarding, not just for the knowledge and skills I gained, but also for the supportive and passionate team at UMH. Their willingness to share their expertise and enthusiasm made this secondment another fantastic learning experience.



ESR8 - Marco Bertolini

Host Institution: EDIN | Secondment host: KCL

As a chemist, working in Professor Malcangio's lab at King's College London was a unique and enriching experience. I gained valuable insights into the biological mechanisms underlying neuropathic pain, particularly the role of macrophages at DRG sites. While my background in chemistry provided a different perspective, it also challenged me to learn new techniques and approaches. This interdisciplinary exposure has broadened my understanding of neuroscience and opened up exciting avenues for future research.



ESRS' STORIES | SECONDMENT

ESR7 - Nicholas Bossons

Host Institution: CHEM | Secondment host: UMH



I recently concluded my secondment at IDIBE at UMH in Elche, Spain. This was a great opportunity to learn new techniques and skills that I wouldn't be able to do at my host institution. I brought several compounds that I had synthesised and got to test them in vitro using calcium imaging, generating valuable results and hopefully leading to future collaboration.

ESR1 - Stefan Jackson

Host Institution: UCAM| Secondment host: POLY

I had the privilege of working with Polypure AS in Oslo, Norway, for two months as part of my secondment, under the invaluable guidance of Erik Agner, the CEO of Polypure. During this time, we successfully synthesized, extracted, and purified PEG derivatives crucial to my research in the PIANO project. Erik's expertise and innovative ideas in various synthesis and purification strategies was instrumental in this achievement. The hands-on experience I received on instruments such as HPLC as well as tiny and micro preparatory chromatography techniques significantly broadened my knowledge.

I am especially grateful to my fellow ESR, Zuzanna Samol, whose unwavering support was pivotal at every step of my work. I also want to extend my heartfelt thanks to Jhansi Panga and Yomkippur Perez for their indispensable assistance. A sincere thank you to the entire Polypure team for welcoming me so warmly and making me feel at home. My time in Norway was truly memorable, and I'm thrilled to have found a family there.



ESRS' STORIES | SECONDMENT

ESR9 - Angela Lamberti

Host Institution: UMH | Secondment host: POLY



My three-month secondment at PolyPure was an incredible experience, allowing me to immerse myself in the company's operations and gain hands-on experience with the pegylation process. Despite Oslo's cold climate, the warmth and support of Zuzanna, Erik and all the colleagues made the experience unforgettable. Their guidance was instrumental in achieving my goal of pegylating a TRPV1 antagonist. This opportunity not only deepened my understanding of chemistry but also fostered significant personal and professional growth, offering invaluable insights into the workings of a dynamic company.

ESR5 - Saniya Salathia

Host Institution: UCAM | Secondment host: LEEDS

got to spend 3 months at the University of Leeds as a part of my secondment for PIANO and it was one of the most rewarding experiences of my time as a PhD student. I had the opportunity to learn from the expertise of Professors Nikita Gamper and Ronaldo Ichiyama on the models and mechanics of neuroregeneration. Sofia (ESR 6) was kind enough to let me assist her on extracting and culturing dorsal horn cells which were then incubated with gene-delivery therapeutic nanoparticles we synthesise at UCAM. It would not be possible to complete my project and deliverables of having a spinal cord injury animal model without the supervision of Professor Ichiyama and his team. For my first experience, handling rats, I could not have asked for better supervisors. Working in the biology labs at LEEDS meant I had to step out of the comfort zone of my chemistry labs. I have come to appreciate the discipline and hard work that is needed to successfully work in vivo projects.

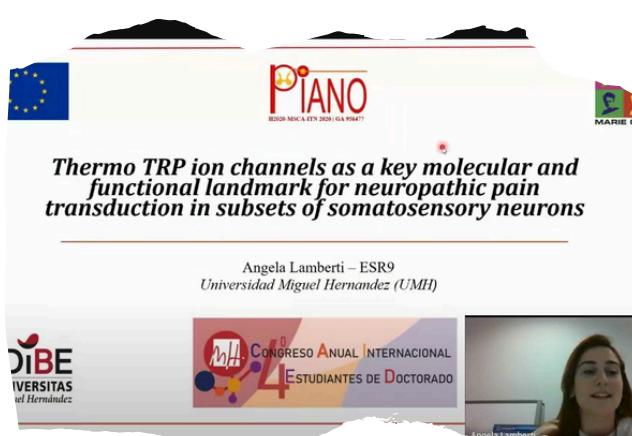
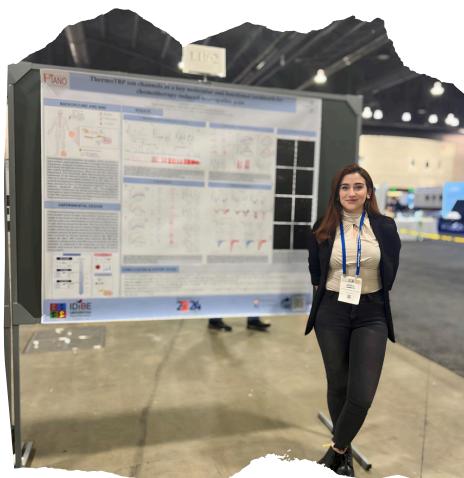


ESRS' STORIES | CONFERENCE TIME!

ESR9 - Angela Lamberti - and ESR6 - Sofia Figoli - had the opportunity to present their research at the RECI congress, in Granada, Spain, May 2024



ESR9 - Angela Lamberti also presented her work at the Biophysical Society Annual Meeting in Philadelphia and Annual International Congress of Doctoral Students



ESR6 - Sofia Figoli also presented her work at the Society for Neuroscience, in Chicago, USA



ESRS' STORIES | AWARDS!



ESR13- Francesca Picco (KCL) presented at the KCL School of Neuroscience PhD Symposium and won the prize for the best talk of the Wolfson Sensory, Pain and Regeneration Centre!

ESR1 -Stefan Jackson won the people's choice award at the FameLab -Talking Science competition for his 3-minute speech on "Pain - a necessary evil" and "Chronic neuropathic pain treatment". Camerino, 17th April 2024



NEW ESR BOARD

Starting in March, the following ESRs have taken on the responsibility of serving on the ESR board until the end of the PIANO project.



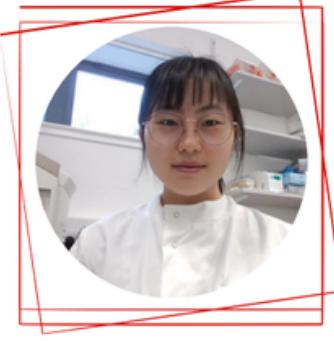
ESR1
Stefan Jackson



ESR5
Saniya Salathia



ESR7
Nicholas Bossons



ESR15
Yanzi Zhou



PIANO PUBLICATION



Bertolini M, Mendive-Tapia L, Ghashghaei O, et al. **Nonperturbative Fluorogenic Labeling of Immunophilins Enables the Wash-free Detection of Immunosuppressants**. ACS Cent Sci. 2024;10(5):969-977. Published 2024 Mar 18. doi:10.1021/acscentsci.3c01590

Lamberti A, Serafini M, Aprile S, Bhela IP, Goutsiou G, et al. **The multicomponent Passerini reaction as a means of accessing diversity in structure, activity and properties: Soft and hard vanilloid/cannabinoid modulators**. Eur J Med Chem, 2024 Dec 5:279:116845. doi: 10.1016/j.ejmech.2024.116845. Epub 2024 Sep 7.



FAREWELL ESRS



With the PIANO project approaching the end on February 2025, some of our ESRs have already completed their time on the PIANO project. We wish them the best of luck in the future!

ESR13

Francesca Picco

ESR3

Zuzanna Samol

ESR7

Nicholas Bossons

ESR9

Angela Lamberti

ESR10

Georgia Goutsiou

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