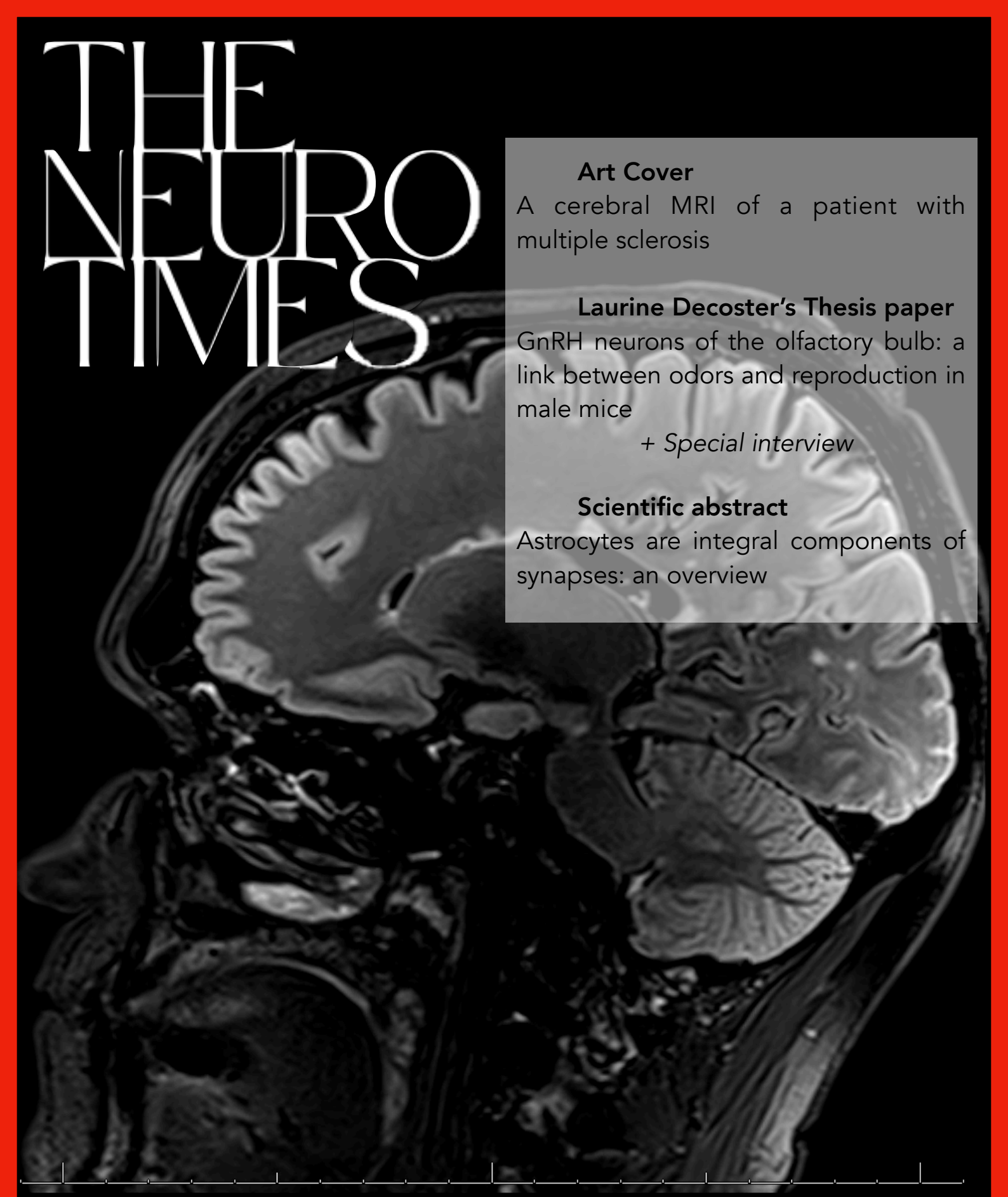
THE NEURO TIMES



Art Cover

A cerebral MRI of a patient with multiple sclerosis

Laurine Decoster's Thesis paper

GnRH neurons of the olfactory bulb: a link between odors and reproduction in male mice

+ Special interview

Scientific abstract

Astrocytes are integral components of synapses: an overview

DISCOVER THE PHD STUDENTS'WORK OF THE LILLE NEUROSCIENCE & COGNITION CENTER

Lille Neuroscience & Cognition

1ST EDITION - FEBRUARY 2025

About this PhD journal

What is The Neuro Times PhD journal?

The Neuro Times PhD journal is a journal created by the PhD students of the Lille Neuroscience & Cognition Research Center (UMR-S 1172). The main objective of this initiative is to disseminate and share their work, discoveries, and knowledge more easily with the entire staff of the center.

This journal consists of:
· An art cover obtained with the help of a member of the center (e.g, illustrations from experiments)
· A summary of a scientific article with a PhD student as first author
· A scientific dissertation written by a PhD student which presents expertise on the subject
· Scientific games

How to contribute to the Neuro Times journal?

Are you a PhD student passionate about your research and eager to share your findings? We'd love to hear from you! Contact any member of the editorial board to discuss your ideas.

We welcome all kinds of contributions—whether you have exciting unpublished results, a striking image from your experiments, a fun neuroscience-related game or joke, or even a personal reflection on your research journey. If you've presented at a conference, this is a great opportunity to highlight your work and share it with the community.

Participating in the journal, whether occasionally or regularly, is a great way to develop your scientific writing, communication, and editing skills, as well as to explore your creativity. No need to be an experienced writer—our team is here to guide you with templates and support to make the process easy and enjoyable.

Have an idea, big or small? Let's make it happen together!

Editorial board

After completing a Research Master's degree in Biology and Health, specializing in Neuroscience, at the University of Lille, Lisa is now in the second year of a PhD under the supervision of Nicolas Sergeant. Their research focuses on understanding small anti-Alzheimer molecules that have shown effects on neurofibrillary degeneration and amyloid plaques in vivo mouse models. Lisa combines biochemistry, pharmacology, and neuroscience to better understand the pathological mechanisms of Alzheimer's disease.

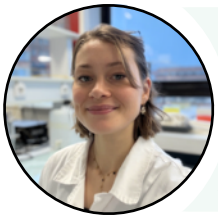
Camille completed a Master's degree in Immunology and Inflammation at the University of Strasbourg before joining the Lille Neuroscience & Cognition laboratory in 2024. She is currently a second-year PhD student in the TREAT team under the supervision of Dr. Lennart Mars and Prof. Patrick Vermersch. Her doctoral research focuses on a newly identified subset of inflammatory B lymphocytes in multiple sclerosis. By combining a translational approach that integrates in vivo experimental models and a clinical cohort, she aims to characterize their phenotype, cellular interactions, and role in the disease's pathophysiological mechanisms.

Violette Delforge is in the second year of her PhD in the Alzheimer & Tauopathies team of the Lille neuroscience and Cognition center. She obtained a Master's degree in Neuroscience in Lille and is currently working under the supervision of Dr. Vincent Huin on the implication of mutations in the *RFC1* gene in parkinsonism.

Agnès is a trained neuropsychologist, specializing in neurodegenerative pathologies, and she is currently working on a PhD in neuroscience in the INTERACTIONS team, part of the Lille Neuroscience and Cognition laboratory, directed by Dr. Fabien D'Hondt and Dr. Maxime Bertoux. Her research focuses on understanding the mechanisms of social cognition in order to aid differential diagnosis between pathologies belonging to the Fronto-Temporal Lobar Degeneration (FTLD) spectrum and other disorders (Alzheimer's disease and psychiatric disorders).

Matthieu is originally from Bretagne, France. He completed his Bachelor's degree in Psychology in Brest before pursuing a Master's in Clinical Neuropsychology at the University of Lille. Currently, he is undertaking a PhD in Cognitive Neuroscience in the INTERACTIONS team, focusing on visual cognition in Multiple Sclerosis under the supervision of Dr. Quentin Lenoble. His research aims to understand the interactions between visual and cognitive symptoms using eye-tracking and functional MRI techniques.

After completing her Master's degree in Neuroscience at the Claude Bernard University in Lyon, Marine worked three years as an engineer at the Institut des Sciences Cognitives Marc Jeannerod. She is now undertaking her PhD under the supervision of Renaud Jardri and Guillaume Dumas, focusing on interbrain synchrony in different social contexts. Using HD EEG hyperscanning, her research aims to understand the role of interbrain synchrony on adult-child relationships, focusing on mother-infant relation and therapeutic alliance.



Agathe is originally from Montpellier where she completed her degree in Biology before pursuing her Master's degree in Neuroscience at the Claude Bernard University (Lyon). She is currently in 4th year of a PhD in the Alzheimer & Tauopathies team under the supervision of Dr. David Blum and Emilie Faivre. Her thesis focuses on understanding the mechanisms involved in the astrocytic deregulation of the A2A adenosinergic receptor and its involvement in the development of tauopathies.

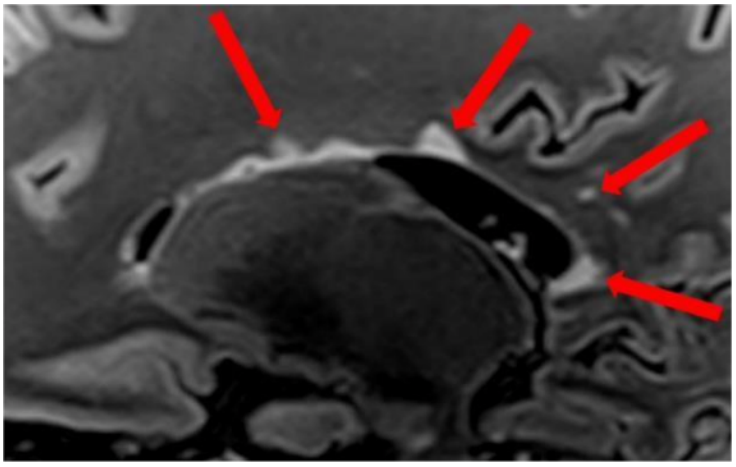
By Matthieu Duault

Art Cover

This cover illustrates a cerebral MRI of a patient with multiple sclerosis (pwMS), in its relapsing-remitting (RR) form which represents 85% of diagnosed forms. MS is a inflammatory and neurodegenerative disease of the central nervous system (CNS), affecting the brain and/or the spinal cord. It is the leading cause of non-traumatic disability in young adults.

The MRI sequence presented here, called T2 FLAIR (Fluid Attenuated Inversion Recovery), is particularly appropriate for the MS because, by suppressing the cerebrospinal fluid signal, the demyelinating lesions characteristic of this pathology can be seen in hypersignal.

In this example, the diagnosis dates from 2014, and clinically, the first symptom of the patient was visual impairment (i.e a bilateral optic neuritis) with a recovery after few weeks, she moved around less frequently, complained of daytime fatigue, difficulty following conversations and an increased need to take notes.



Here, the lesions, indicated by the red arrows, are mainly periventricular.

Once the diagnosis has been made and the patient has been put on treatment, she is seen frequently to monitor the progress of the disease. One of the examinations carried out is the neurocognitive assessment. This assessment evaluates various neurocognitive functions that are potentially affected in MS, using standardized tests. In this example, the assessment revealed a greater decline in information processing, and pronounced verbal and working memory difficulties. Cognitive functions that are objectively difficult to "re-educate", but the neuropsychologist can, with this results, help the patient to put in place a few new habits in her daily life to compensate the difficulties.

Like this patient, MS concerns nearly 3 millions people worldwide[1] and 130 000 in France[2] (three-quarters of pwMS are women). The aetiology of this disease is multifactorial (genetic susceptibility, environmental (obesity, severe smoking, vitamin D deficiency, Epstein- Barr virus infection,…) and currently, patients can't be cured but treatments are very effective in controlling relapses (inflammatory activity characteristic of RRMS, which leads to worsening or the appearance of new symptoms) and therapeutic perspectives continue to emerge[3-4].

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By Camille Degryse & Lisa Brisoire

Laurine's Thesis Paper

A GnRH neuronal population in the olfactory bulb translates socially relevant odors into reproductive behavior in male mice

Laurine Decoster, Sara Trova, Stefano Zucca, Janice Bulk, Ayden Gouveia, Gaetan Ternier, Tori Lhomme, Amandine Legrand, Sarah Gallet, Ulrich Boehm, Amanda Wyatt, Vanessa Wahl, Philipp Wartenberg, Erik Hrabovszky, Gergely Rácz, Federico Luzzati, Giulia Nato, Marco Fogli Paolo Peretto, Sonja C Schriever, Miriam Bernecker, Paul T Pfluger, Sophie M Steculorum, Serena Bovetti, Sowmyalakshmi Rasika, Vincent Prevot, Mauro S B Silva, Paolo Giacobini.

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My name is Laurine, I am 28 years old, and I grew up in north of France. I have always been passionate about science, which led me to pursue a Bachelor's degree in Cellular Biology and Physiology, followed by a Master's in Health Biology with a specialization in Neuroscience at the University of Lille. I then completed a PhD in Neuroscience, specializing in Neuroendocrinology, at the same university within the Lille Neuroscience and Cognition Laboratory, as part of Dr. Vincent Prévot's team, *Development and Plasticity of the Neuroendocrine Brain*, under the supervision of Dr. Paolo Giacobini. I am currently a postdoctoral fellow at the University of California, San Diego.

Abstract:

Hypothalamic gonadotropin-releasing hormone (GnRH) neurons regulate fertility and integrate hormonal status with environmental cues to ensure reproductive success. Here we show that GnRH neurons in the olfactory bulb ($GnRH^{OB}$) of adult mice can mediate social recognition. Specifically, we show that $GnRH^{OB}$ neurons extend neurites into the vomeronasal organ and olfactory epithelium and project to the median eminence. $GnRH^{OB}$ neurons in males express vomeronasal and olfactory receptors, are activated by female odors and mediate gonadotropin release in response to female urine. Male preference for female odors required the presence and activation of $GnRH^{OB}$ neurons, was impaired after genetic inhibition or ablation of these cells and relied on GnRH signaling in the posterodorsal medial amygdala. GnRH receptor expression in amygdala kisspeptin neurons appear to be required for $GnRH^{OB}$ neurons' actions on male mounting behavior. Taken together, these results establish $GnRH^{OB}$ neurons as regulating fertility, sex recognition and mating in male mice.

Article Summary:

Through a combination of brain imaging approaches, RNA sequencing, and genetic manipulation, researchers have demonstrated that these neurons fulfill several key functions:

A Quarter of the Brain's GnRH Neurons Are Located in the Olfactory Bulb

Contrary to the classical idea that GnRH neurons are exclusively located in the hypothalamus, researchers have shown that nearly 200 GnRH neurons are present in the olfactory bulb (Figure 1c), representing 20% of the brain's total GnRH neurons. What makes this population even more intriguing is that these neurons possess neuritic extensions directly connected to olfactory structures such as the vomeronasal organ (VNO) and the main olfactory epithelium (MOE) (Figure 1a-b). Their strategic position suggests that they could directly detect olfactory signals related to reproduction.

GnRHOB Neurons Respond to Opposite-Sex Odors

To understand their function, researchers observed the activity of $GnRH^{OB}$ neurons in response to different olfactory stimuli. In vivo functional imaging revealed a striking result: nearly one-third of $GnRH^{OB}$ neurons are activated when a male is exposed to the urine of estrous females (Figure 2f-h). In contrast, these neurons

remain silent in response to male odors or non-social odors (Figure 2i-j). These observations indicate that these cells play a key role in detecting olfactory signals related to reproduction.

Activation of GnRH^{OB} Neurons Stimulates Hormone Secretion

But do these neurons merely detect these odors? Not at all. When researchers artificially stimulated these neurons, they observed a significant increase in LH and testosterone levels (Figure 3o-p), two crucial hormones for male fertility and sexual behavior. Conversely, when these neurons were inhibited, this hormonal response completely disappeared (Figure 3q). This direct link between the olfactory system and hormonal regulation highlights how essential GnRH^{OB} neurons are for reproduction.

GnRH^{OB} Neurons Are Connected to Brain Circuits Governing Reproductive Behavior

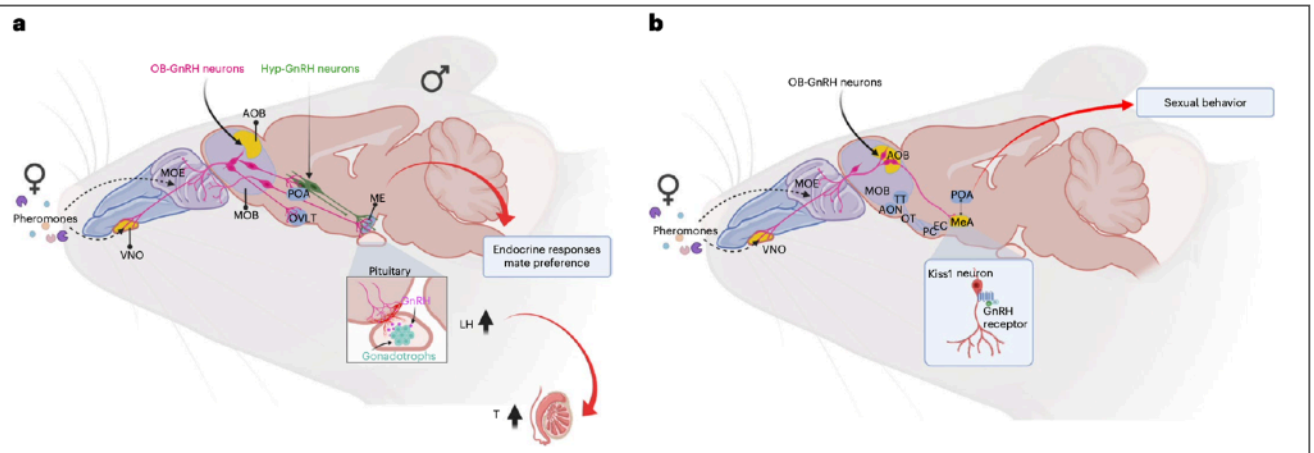
The next step was to understand how these neurons interact with the brain. Using neuronal tracing techniques, researchers discovered that GnRH^{OB} neurons project directly to the medial posterodorsal amygdala (pdMeA), a key structure controlling social and reproductive behaviors (Figure 6h-i). These connections show that GnRH^{OB} neurons are not limited to detecting olfactory signals but also influence brain circuits involved in attraction and mating (Figure 6j-o).

Destruction of GnRHOB Neurons Disrupts Female Odor Preference and Sexual Behavior

To test their importance, researchers selectively removed these neurons in male mice. The result? These mice no longer showed a preference for female odors, and their mounting behavior was significantly reduced (Figure 5c, 5i). This experiment proves that GnRH^{OB} neurons are indispensable for integrating olfactory signals into the regulation of reproductive behavior.

A Potential Role for Kisspeptin Neurons in the Amygdala

Finally, researchers investigated the targets of GnRH^{OB} neurons. They discovered that kisspeptin (Kiss1) neurons in the medial posterodorsal amygdala express the GnRH receptor, suggesting they could act as a crucial relay (Figure 7a-b). A genetic inactivation experiment of this receptor confirmed this hypothesis: males lacking this signaling showed a significant reduction in mounting behavior (Figure 7h), highlighting the importance of the GnRH-Kisspeptin pathway in copulatory behavior.



GnRH^{MOB} and GnRH^{AOB} neuronal projections and neuroendocrine/ behavioral responses to odors in male mice.

***a**, Schematic of GnRH^{MOB} neuronal projections to the MOE, VNO, OVLT, POA and ME. GnRH^{MOB} neurons are activated after exposure to opposite-sex olfactory cues and stimulate the gonadotropic axis by elevating LH and testosterone secretions. T, testosterone.*

***b**, Schematic of GnRH^{AOB} neuronal projections to the MOE, VNO and MeA. When exposed to the scent of the opposite sex, GnRH^{AOB} neurons stimulate the onset of copulatory behavior in inexperienced male mice via the expression of GnRHR in the kisspeptin neurons of the pdMeA.*

In summary, this study reveals a new neuronal circuit linking olfaction to reproduction. GnRH^{OB} neurons detect opposite-sex odors, influence hormone secretion, and directly modulate brain circuits responsible for reproductive behavior. This discovery revolutionizes our understanding of the interactions between sensory and hormonal systems.

Beyond mice, these findings could shed light on similar mechanisms in other species, including humans, and offer new avenues for better understanding certain neuroendocrine reproductive disorders.

The full article is here:

Decoster L, Trova S, Zucca S, Bulk J, Gouveia A, Ternier G, Lhomme T, Legrand A, Gallet S, Boehm U, Wyatt A, Wahl V, Wartenberg P, Hrabovszky E, Rácz G, Luzzati F, Nato G, Fogli M, Peretto P, Schriever SC, Bernecker M, Pfluger PT, Steculorum SM, Bovetti S, Rasika S, Prevot V, Silva MSB, Giacobini P. A GnRH neuronal population in the olfactory bulb translates socially relevant odors into reproductive behavior in male mice. *Nat Neurosci*. **2024** Sep;27(9):1758-1773. doi: 10.1038/s41593-024-01724-1. Epub 2024 Aug 2. PMID: 39095587.

Author Interview:

What motivated you to pursue a PhD?

There wasn't a single defining moment that pushed me toward a PhD. I believe I have always enjoyed studying and learning. Additionally, I had the opportunity to work on topics that fascinated me and was continuously encouraged by my professors and mentors. This support and passion for science motivated me to push myself further and pursue a PhD, allowing me to deepen my knowledge and develop new skills.

Why did you choose this specific research topic?

During my third year of university, we had neuroendocrinology courses, and for some reason, I found the subject fascinating. At the end of the year, I sought out an internship in neuroendocrinology and was fortunate to join Dr. Giacobini's team. Initially, I wanted to work on polycystic ovary syndrome, but I was offered a different project led by the postdoc supervising me. Her enthusiasm for the topic was contagious, and when she left, I was eager to continue her work. This project eventually became the focus of my PhD research.

Was there a particular experience or event that influenced your decision to become a researcher?

Becoming a researcher was a gradual process for me. I enjoyed studying, and throughout my academic journey, I met passionate individuals who inspired me. I believe these encounters and experiences shaped my path toward research.

Can you explain the main topic of your article in simple terms?

My PhD article focuses on gonadotropin-releasing hormone (GnRH) neurons, which are responsible for producing GnRH, a hormone that regulates reproductive function. These neurons are primarily located in the hypothalamus. However, our laboratory discovered that GnRH neurons are also present in the olfactory bulbs of both humans and rodents. This previously unstudied population of neurons became the main focus of my research, where I investigated their role in reproductive function.

What were the biggest challenges you faced during this research?

One advantage of this study was that very little was known about this population of GnRH neurons, meaning that any findings, whether they supported our hypotheses or not, provided valuable insights to the field. However, this also resulted in an overwhelming amount of data. As a PhD student, it was easy to get lost in too many directions, so I had to focus on specific aspects.

Technically, the biggest challenge was adapting existing lab techniques to study this particular neuron population. Since only about 200 GnRH neurons are scattered within the olfactory bulbs, we had to modify numerous experimental protocols. Whether it was viral infection of neurons, brain slicing for electrophysiology, or FACS sorting, every technique required extensive optimization to accommodate the small number and unique localization of these neurons.

What do you enjoy most about your research work?

I think what excites me the most is discovery—the process of identifying or understanding something new.

Do you have a memorable, funny, or unexpected anecdote from your PhD journey?

One of the most memorable experiences during my PhD was attending a conference in South Africa. Before and after the conference sessions, we went on safaris. It was an incredible experience—discussing science all day while also exploring a new country and culture made it even more enriching.

Is there a piece of advice from a mentor or colleague that has stayed with you?

I was lucky to receive great advice from my mentors. One of the most valuable tips early in my PhD was learning how to manage my time effectively and plan my experiments efficiently.

What are your career plans after your PhD?

I have started a postdoc in the United States. However, I do not plan to stay in academia long-term. I want to explore different career options and take the time to find the right path, keeping an open mind for new opportunities.

What advice would you give to someone considering a PhD?

A PhD requires commitment and years of dedication to a single project. It is time-consuming but highly rewarding. A PhD is not just about working on a project; it is also an opportunity for training and growth. Completing a PhD opens doors to various career opportunities. If you are passionate and curious, go for it! If I had to give one piece of advice, it would be to meet regularly with your PhD supervisor—discuss your progress and challenges, set goals, and seek guidance. A strong relationship with your supervisor is crucial for success.

What does your PhD represent to you, both personally and professionally?

On a personal level, my PhD is a source of pride. Professionally, it is a stepping stone—it took me some time to realize the wide range of opportunities that become available after earning a PhD.

How do you see the impact of your research within your field and beyond?

My work explores the connectivity and regulation of GnRH neurons, which are essential for reproduction and neuroendocrine development. By identifying new interactions between olfactory and reproductive neurons, my research contributes to a deeper understanding of the neurobiological mechanisms underlying hormonal control.

Beyond the field, our findings on neuronal pathways could influence how we perceive the interaction between the olfactory system and hormonal regulation, potentially leading to new research on social and reproductive behavior. Additionally, this study may help in understanding disorders related to hormonal imbalances, such as puberty disorders or certain types of infertility. By improving our knowledge of neuronal signaling, we might pave the way for new therapeutic approaches.

If you could travel back in time, which scientist or historical figure would you like to meet, and why?

I would love to meet Marie Curie. Her groundbreaking work on radioactivity revolutionized physics and medicine. She also broke barriers as a female scientist in a male-dominated field. I would love to ask her about the challenges she faced and discuss the impact of her research today.

Astrocytes are integral Components of Synapses: an overview

Neuroglia is introduced by Rudolf Virchow in 1846 to describe a connective tissue of the central nervous system (CNS). It is defined as a "glue" that composed the interstitial substance of brain. It now includes astrocytes, microglia, ependymal cells, oligodendrocytes and oligodendrocyte progenitor cells (OPG).

The term of astrocytes was coined in 1893 by von Lenhossek to refer to this star-shaped neuroglial cells. Although it represents the main population of glial cells in the CNS, these cells were described as simple neuronal support. Today, it is accepted that astrocytes are involved in a wide range of functions essential to maintaining brain homeostasis. This star shape, characteristic of these cells, highlights the significant ramification of astrocytes which gives them a high capacity of contact with the cellular environment. Neuroanatomical studies in rodents have identified two major types of astrocytes based on their morphology and location. Firstly, the fibrous astrocytes of the white matter, which are in contact with myelinated axons and nodes of Ranvier and secondly, the protoplasmic astrocytes of the grey matter, generally more ramified, which are in contact with blood vessels and neuronal cells. Although astrocytes have common properties, important number of omics studies highlight large functional diversity within the same brain region.

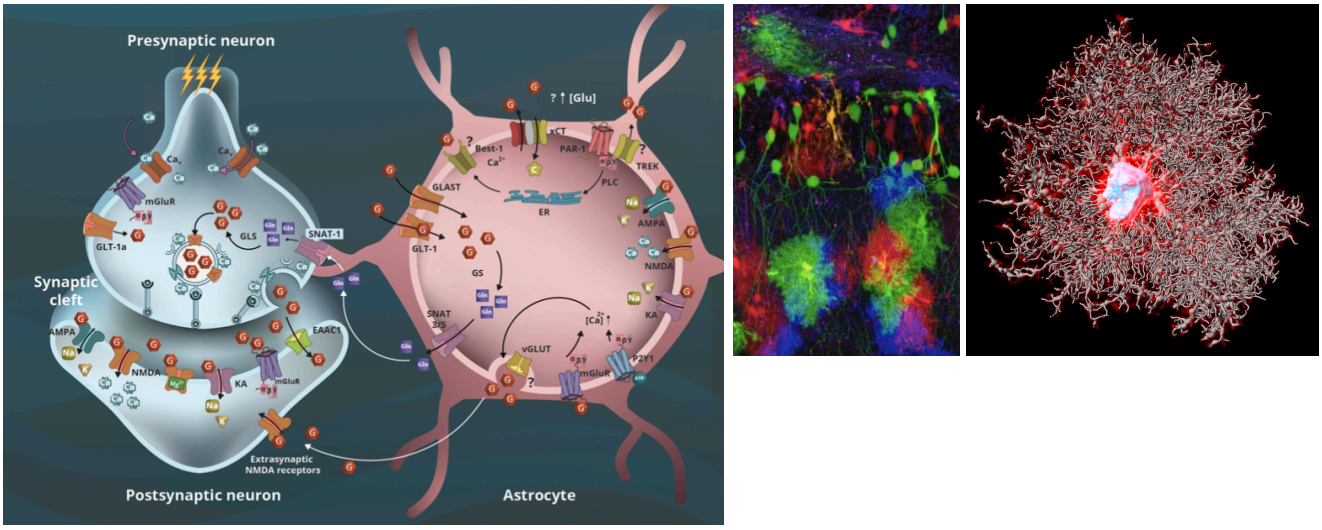
At the neuronal level, astrocytes are physically associated with the synapses which will be sheathed and wrapped by the astrocytic cytoplasmic extensions, then called perisynaptic processes. An astrocyte can contact over 100,000 synapses in rodents and nearly 2,000,000 in humans. This astrocyte-neuron structural association is found in other species such as the fruit fly Drosophila melanogaster and thus highlights its conservation during evolution. In 1895, Cajal described this neuro-glia relationship as a dynamic partnership that would modulate neurotransmission and therefore synaptic functionality. Indeed, these changes in structural and functional interactions, increasingly studied in literature, are strongly observed during neurodevelopment, pathological conditions as well as during various physiological conditions. Astrocytes act as "synaptic sensors" allowing them to continually adapt to neuronal needs and regulate local synaptic circuits.

Indeed, through many channels, astrocytes will control the synaptic ion balance, particularly potassium. Kir4.1, the K+ channel most expressed by astrocytes, ensures the main entry of potassium into the cell. Like the action of this channel, the Na+/K+/ATPase (NKA) pump will play a major role in the clearance of potassium and therefore the maintenance and regulation of extracellular potassium levels. The synergistic action of these transporters will allow sustainability of proper synaptic transmission. Interestingly, this fine regulation of the ionic balance plays a major role in controlling the concentrations of neurotransmitters in the synaptic cleft. The astrocytic glutamatergic transporters (i.e., GLAST and GLT-1) of the perisynaptic processes will reuptake the glutamatergic accumulation, avoiding a potential excitotoxicity. The transport activity is enabled by the NKA gradient, demonstrating its importance in synaptic regulation. Similarly, the presence of GABAergic transporters (i.e., GAT-1 and GAT-3) will allow a recapture of GABA by astrocytes to modulate tonic inhibitory currents in postsynaptic cells.

It is now accepted that astrocytes are an integral component of the nervous system architecture and that they allow fine regulation of synaptic functions and plasticity via dynamic and bidirectional relationship with synapses. Research on their involvement in CNS diseases has thus been widely developed in order to better understand and identify the cellular and molecular alterations involved in this neuro-glia relationship. In pathological conditions, astrocytes present around injured and damaged tissues develop a so-called reactive phenotype that is accompanied by various morphological and functional changes. This astrocytic reactivity is initially established in order to restore cerebral homeostasis. In certain CNS diseases, such as

neurodegenerative diseases, the astrocytic response can become deleterious and thus participate in the pathology development. This reactive phenotype has long been described as a defined and known change, in a binary designation where astrocytes were described as either "neuroprotective" or "neurotoxic". However, a consensus is now issued in the scientific sphere: the reactive phenotype of the astrocyte is much more complex and requires further investigation in order to understand the entirety of the underlying cellular and molecular mechanisms. Their phenotypic study, in full expansion, thus allows the development of new techniques and innovative approaches, providing new hypotheses and avenues of research.

A **B** **C**



A. Because of the tripartite synapse is much more complex. *From Cuellar-Santoyo et al.*, https://doi.org/10.3389/fncel.2022.1037641
B. The Rainbow astrocyte. *From the MIT Techonoloy review.* https://www.technologyreview.com/2007/11/01/223194/the-technicolor-brain/
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What Type of PhD Student Are You? 🎓🔍

A PhD is an intense journey, filled with organization, deadlines, multiple projects, and (sometimes) a loss of motivation… But everyone experiences it differently!

Answer the following 10 questions to find out what kind of PhD student you are.

1. How do you organize your PhD work?

A) I have a detailed plan with clear objectives and intermediate deadlines.
B) I always end up working according to the next deadline.
C) I have too many conferences, events, and projects going on to think about it.
D) I go with whatever excites me the most!

2. The night before an important submission, you are…

A) Relaxed, everything has been ready for weeks.
B) Panicking, working until the very last minute.
C) Wrapping up one project while immediately jumping into another.
D) Excited to submit my first real academic work!

3. When your supervisor asks for a research update, you respond…

A) With a structured PowerPoint and a detailed progress report.
B) By handing in the latest report they asked for—just in time.
C) By mentioning my posters and recent conference presentations.
D) "I have so many ideas to share with you!"

4. How big of a role does your PhD play in your life?

A) I integrate it into my well-structured daily routine.
B) Deadlines dictate my life.
C) It's one of many commitments I juggle.
D) It's the center of everything—I'm passionate about it!

5. How do you handle writing your dissertation?

A) I have already written key sections according to a structured timeline.
B) I keep telling myself I'll start seriously… as soon as I have time.
C) I write on the go—on the train, between meetings.
D) I can't wait to start writing and share my ideas!

6. How's your daily energy level?

A) Steady, thanks to good organization and stress management.
B) A rollercoaster between intense sprints and total exhaustion.
C) Fueled by the adrenaline of presentations and networking.
D) High—I'm full of enthusiasm!

7. You have the opportunity to speak at an international conference. You…

A) Check if it fits into my strategic plan and prepare a polished presentation.
B) Accept, thinking I can prepare it the night before.
C) Say yes immediately, even if my schedule is already overloaded.
D) Jump for joy at the chance to present my research!

8. What's your worst PhD nightmare?

A) Facing an unexpected issue.
B) Forgetting a deadline.
C) Having to turn down an opportunity.
D) Realizing that research isn't for me.

9. What advice would you give to a future PhD student?

A) Plan everything from the start.
B) Be ready for intense rush periods.
C) Take every opportunity that comes your way.
D) Enjoy the experience—it's an incredible journey!

10. At the end of your PhD, you see yourself...

A) Moving on to a postdoc with a clear roadmap.
B) Taking a well-deserved break.
C) Continuing to build collaborations.
D) I haven't thought that far ahead, but I know I want to stay in research!

Results: What Kind of PhD Student Are You?

📊 Mostly A: The Methodical One

With to-do lists and structured plans, you approach your PhD with precision. Nothing is left to chance, and you progress methodically toward your thesis defense.

⏳ Mostly B: The Deadline-Driven One

Deadlines are both your motivation and your nightmare. You work in sprints, alternating between intense submission rushes and well-earned recovery.

🎤 Mostly C: The Networker

Always at conferences and expanding your network, you're everywhere at once! You always know the right people to reach out to for information.

🌱 Mostly D: The Optimist

You are enthusiastic, curious, and eager to explore the world of research. Everything fascinates you, and you're overflowing with ideas!

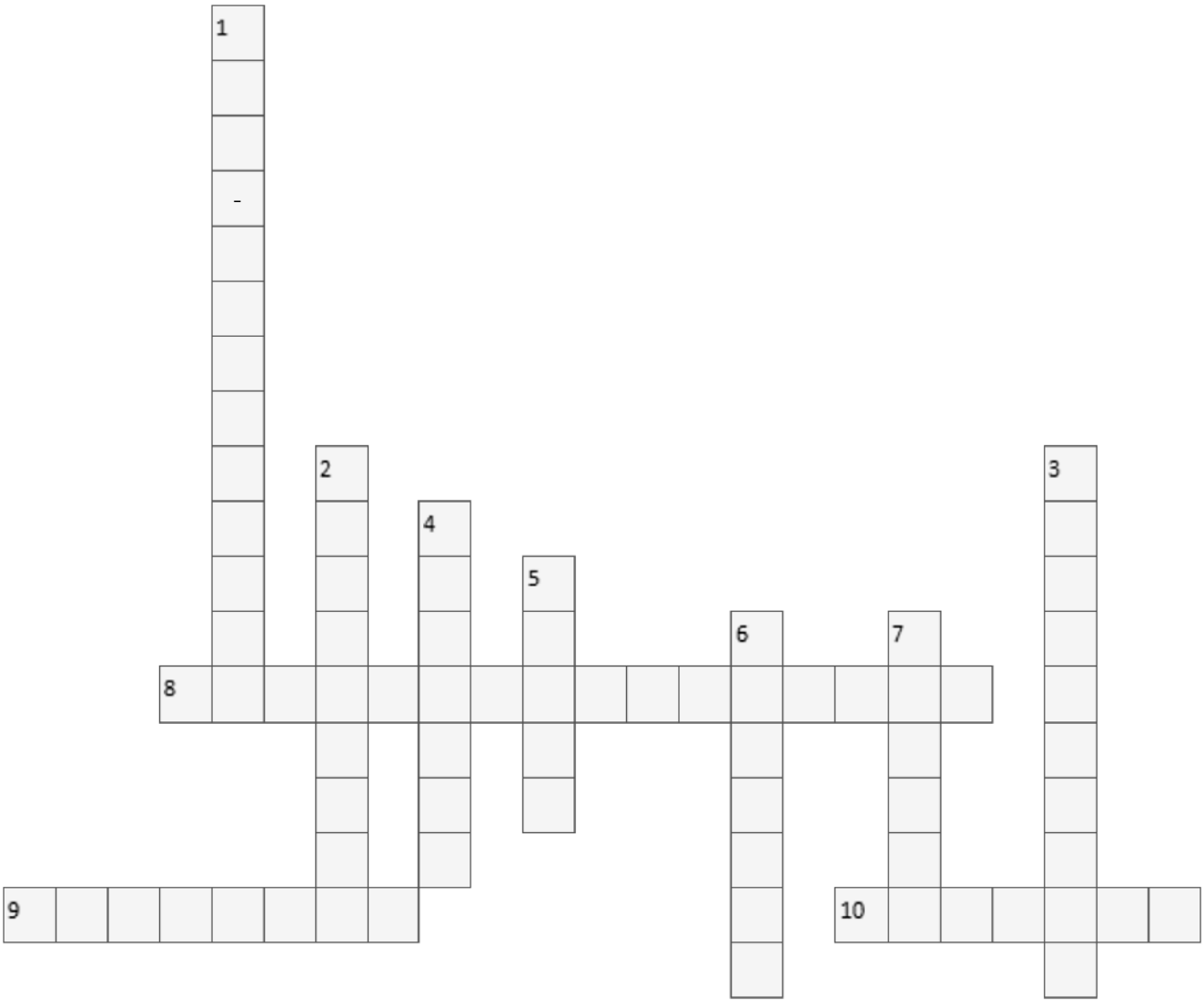
Break time - Crossword 🧠🤔

Horizontally

8. Chemical compound released by neurons
9. Formal meeting or assembly of people to debate a question
10. Functional contact zone between two neurons

Vertically

1. Student who is going to pass the exam to work under the supervision of a thesis supervisor
2. Pathological hardening of an organ, tissue or lesion
3. Scientific instrument used to observe objects too small to be seen with the naked eye
4. Microbiology pioneer
5. Main organ of the nervous system
6. Alteration of the functions or health of a living organism
7. The ability of the mind to record, retain and recall past experiences.



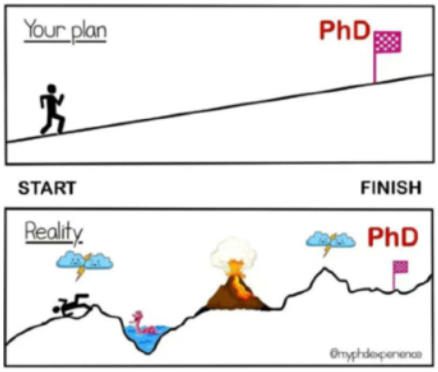
The answer will be revealed in the next issue—stay tuned! 😊

PhD Student Integration Day

A few of our fellow PhD students took the initiative to organize an Integration Day, creating a great opportunity for everyone to connect across different research teams. The event featured interactive games designed to encourage exchange/discussion among participants, followed by a shared meal and a casual evening drink to wrap up the day.

A heartfelt thank you to the organizers for their dedication and effort in making this event a success! Special thanks to Claire Regost, Violette Delforge, Denae Rolland, Rislane Taouili, Valeria Finelli, and Agathe Launay for putting everything together—it wouldn't have been possible without them. They are already planning more gatherings to strengthen connections within our PhD community, so stay tuned for the next one!

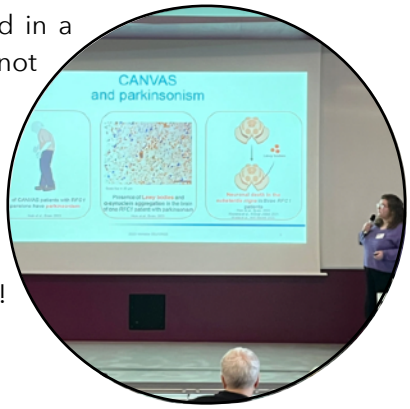
The PhD survival guide



A group of PhD students has put together a "PhD Survival Guide", a valuable resource to help fellow doctoral candidates navigate their journey. This guide is available in both English and French on Resana, under "Documentation" > "Accompagnement Administratif" > "Communication" > "PhD Survival Guide".

A huge thank you to Clémence Delassus, Marie Oosterlynck, Agnès Deneve, Mathilde Roux, Alicia Sicardi and Sixtine Karmann for their time and effort in creating this guide—it's a fantastic tool for all current and future PhD students!

Last month, our fellow PhD student Violette Delforge participated in a conference in Bordeaux, where she presented her research. Her talk was not only engaging and insightful but also earned her the Best Talk Award! 🏆 She presented the results of a genetic screening of 2037 patients with parkinsonism and reported the phenotypical description of ten of those patients with pathogenic *RFC1* mutations. This collaborative work could be of great interest to better diagnose patients with parkinsonism.



Congratulations to Violette for this well-deserved recognition!

Physiopathology of Parkinson's Disease

Thursday January 30 - Friday January 31 in Bordeaux

Recently, Alessio Burin, Clémence Delassus, and Lisa Brisoire had the opportunity to present their PhD research at the Euron PhD Day in Cologne. They each showcased their work through poster presentations, sharing their findings with the scientific community. In addition to his poster, Alessio also gave a fire talk, delivering a concise and dynamic overview of his research. He presented the role of LRRK2 phosphorylation and 14-3-3 binding in the dynamic recruitment of lysosomes and microtubules. Meanwhile, Lisa delivered a talk that further highlighted her work, complementing her poster presentation. She presented her research on Tau seeding cell-based assay for structure-activity relationship of diphenylpyrazole family of compounds, contributing valuable insights into the study of tau pathology and potential therapeutic compounds.

Congratulations to all three for representing our lab and contributing to the exchange of knowledge at this international event! 🎉

EURON PhD Days

Thursday January 30 - Friday January 31 in Cologne

EURON PhD days Cologne 2025

30 & 31 January 2025

On January 31, Agnès Deneve gave a presentation at the Réseau Métio meeting in Lille, where she discussed the role of social cognition in the diagnostic process of Frontotemporal Dementia (FTD). Her talk emphasized the importance of considering social cognitive impairments when assessing and diagnosing FTD, contributing valuable insights to the field.

Méotis
RÉSEAU RÉGIONAL DE LA MÉMOIRE
DES HAUTS-DE-FRANCE

During the INPP Meeting, Marine Gautier-Martins presented her work on the european project miniNO, part of the International Network for Precision Psychiatry, which aims to alleviate the long-term consequences of preterm birth. She focuses on the consequences of prematurity on social cognition, in mother-infant relationships. Using HD EEG hyperscanning, this research aims to understand how interbrain synchrony is affected in preterm born infants, and if a treatment such as nitric oxide, could reduce the social cognition issues in this population.

INPP
Inserm TCP
International Network
for Precision Psychiatry

Congratulations to both Agnès and Marine for sharing their work and advancing discussions in their respective fields! 👏

If you've recently attended a conference, presented a poster, or received an award, let us know! We'd love to feature your work in the next issue

THE NEURO TIMES

In the next issue, we'll dive into CANVAS, along with other exciting topics! Stay tuned to learn more about the latest advancements, ongoing research within our center, and surprises we have in store for you!

If you'd like to contribute to the **PhD Journal**, whether in a big or small way, feel free to reach out to any of the team members involved—just send us an email!

Beginning of the doctorate

During the doctorate

The minute after the defense

The end of the doctorate

Adapted from the site "vaillants doctorants"

We'll see you in 3 months...