The Magazine

January 2023

Introduction

Hello PiBM network members!

First off, I wish you all a belated welcome to 2023. By now, the year is nicely underway and hopefully your respective semesters are ending or beginning smoothly. This month's newsletter brings quite a nice diversity of announcements: from exciting opportunities in research and thought-provoking publications to more somber news about the passing of a scientist whose work strongly impacted those of this network.

All the best wishes for your PiBM endeavors in 2023! Enjoy!

PhD Fellowships!

Several PhD Openings in Neurophilosophy at LMU Munich

The Graduate School of Systemic Neurosciences (GSN) at LMU Munich invites applications for several PhD scholarships in Neurophilosophy. The GSN is the teaching entity for the Munich Center of Neurosciences - Brain & Mind (MCN). PhD students who work in the field of reasoning and decision-making have at least one supervisor from the Munich Center for Mathematical Philosophy.

More information on the scholarships can be found on the website of the Research Center for Neurophilosophy and Ethics of Neurosciences. Be aware that the deadline is very soon!!

Jobs!

Tenure-track Assistant Professor at Rutgers Center for Cognitive Science

The Rutgers Center for Cognitive Science (RuCCS) at Rutgers, The State University of New Jersey-New Brunswick invites applications for a tenure-track position at the level of Assistant Professor with a joint appointment with the Rutgers Philosophy Department or Rutgers Psychology Department. Salary will be commensurate with experience.

The position will begin September 1, 2023. Deadline for full consideration is 28 February. For further details, here is the advertisement : https://philjobs.org/job/show/22641

Announcements

DiFrisco Lab at The Francis Crick Institute

There is now officially a James DiFrisco Lab for Theoretical Biology at The Francis Crick Institute in London, which recently hired post-doctoral fellows. Unfortunately, the deadline has passed, but more information on this position, and potentially future openings, can be found here: https://www.crick.ac.uk/careers-study/vacancies/2022-12-19-postdoctoral-training-fellow-j-difrisco-lab

For more on James' exciting work at the Francis Crick Institute, please visit his website: https://www.crick.ac.uk/research/labs/james-difrisco or this introduction page about his new position: https://www.crick.ac.uk/news/2023-02-01_introducing-james-difrisco. James has a couple recent publications mentioned below.

Courses - Thinking About the Living Differently

Virginie Courtier-Orgogozo is announcing her courses at the Collège de France. These courses are in French, but are free and without registration. They will also be available as videos on the Collège de France website.

Announcements (cont.)

The course is entitled: “Penser le vivant autrement” (Thinking about the living differently). It takes place on Mondays at 10:00am, from 13 February to 3 April 2023. For more details, please see: https://www.college-de-france.fr/agenda/cours/penser-le-vivant-autrements

Publications

DiFrisco, J., Wagner, G. P. & Love, A. (forthcoming). Reframing research on evolutionary novelty and co-option: Character identity mechanisms versus deep homology. *Seminars in Cell and Developmental Biology*. https://doi.org/10.1016/j.semcdb.2022.03.030

DiFrisco, J. Love, A. & Wagner, G. P. (2023). The hierarchical basis of serial homology and evolutionary novelty. *Journal of Morphology* 284 (1):e21531. https://doi.org/10.1002/jmor.21531

Hazelwood, C. (2023) “Reciprocal Causation and Biological Practice.” *Biology & Philosophy*. http://philsci-archive.pitt.edu/21685/

Love, A.C., et al. (2022). Evolvability in the fossil record. *Paleobiology*. 48 (2):186-209. https://www.cambridge.org/core/services/aop-cambridge-core/content/view/3D2EB15FC26812B5CFFF9BA90683D449/S0094837321000361a.pdf/div-class-title-evolvability-in-the-fossil-record-div.pdf

From the world of PiBM

In memory of...

This month, we have a more sombre bit of news from the PiBM world. Below you can read a very thoughtful obituary for biologist Michel Vervoort, written by Lucie Laplane.

Michel Vervoort (1970-2022)

Michel Vervoort passed away on December 8th, 2022 at age 52. A tribute has been published here: https://www.ijm.fr/hommage-a-michel-vervoort/. In this letter, I would like to offer a more subjective tribute focusing on his contributions in philosophy.

Michel Vervoort was Professor in Genetics of Development at University Paris City, and head of the team "Stem Cell, Development and Evolution" at the Institute Jacques Monod. His research was on the study of development and regeneration in a marine annelid named *Platynereis dumerilii*.

Early on, Michel had a strong interest for conceptual and theoretical issues. He wanted to reach a better understanding of what development and regeneration are. His philosophical work was mostly on whether development and regeneration were two parts of the same thing or whether they needed to be conceived differently. I can only encourage those who do not know his work to read his paper "Regeneration and Development in Animals" published in *Biological Theory* in 2011.

More recently, he was working, with Eve Gazave and me, on the diversity of regeneration processes across metazoan, questioning the unity of this category. Together, we were also working on the unity of stem cells, trying to investigate their evolutionary history to help understand how stem cells of various types (germline stem cells, adult pluripotent stem cells, tissue-specific stem cells, and so on) relate to each other.

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Especially, he took interest in the debate around the Germline Multipotency Program. Following the Weismann barrier, the germline was considered as separate and quite independent from somatic cells. This separation came with an underlying assumption that germline stem cells must have a specific core signature of expressed genes. However, the last decade has led to observations that genes expressed in the germline stem cells are also expressed in some somatic stem cells, suggesting an ancestral stem cell from which both germline and somatic stem cells derived. Michel wanted to understand the relationship (and maybe the common origin) between germline and somatic stem cells, as well as their involvement in development and regeneration. He was also interested in the relationship between regeneration and cancer, a topic he was trying to develop in the lab, both as a theoretical question and as an experimental research program.

His involvement in the philosophy of biology probably began very early in his career as a scientist, but he actively developed this line of research from 2009 when he joined a working group initiated by Thomas Pradeu at the IHPST (University Paris 1) on the development process and its philosophical implications. Antonine Nicoglou, a doctoral student in philosophy at the IHPST, who was taking classes in developmental biology at the University of Paris 7, invited him to participate in this group. He accepted the invitation immediately and with enthusiasm. His presence in the group was very enriching for the whole group. Michel integrated remarkably well into this research group in philosophy of biology.

In the field of interdisciplinarity, we often talk about the difficulties and obstacles and the need to build a common language over time. With Michel, we never felt any obstacle. Things were done simply and naturally. He collaborated within an interdisciplinary team on the redaction of the Encyclopedia of Identity (under the direction of Jean Gayon) developed in the context of the Who Am I Labex. He worked on model organisms and collaborated on the organization of a conference with Thierry Hoquet and me. Working on a non-model organism got him interested in the question of how model organisms were chosen and what we expect from them. So, he read what philosophers had to say about them.

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He advocated for the development of new model organisms to better cover the diversity of metazoans, and to better answer some evo-devo questions, in particular those related to regeneration, which encompass a diversity of processes poorly covered by traditional model organisms. Since 2018, he was involved in an international project on regeneration across scales (https://mcdonnellinitiativeatmbl.com/) led by Jane Maienschein and Kate MacCord. He was also co-head of the stem cell regeneration group. This project involved many meetings and conferences during the years, and the co-writing of a series of books. Here again, the group very much enjoyed Michel's conceptual work and insights, his efficiency at bridging biology and philosophy, and his kindness.

To the benefit of our field, Michel also served in an interdisciplinary committee at the CNRS for several years. He served on PhD committees of Philosophers. He was a member of the PhilInBioMed Scientific Committee and the Scientific Committee of the Who am I Labex Program.

Michel was also an excellent pedagogue. His detailed and widespread knowledge of science linked to his pedagogical skills contributed to make him an excellent interdisciplinary collaborator. He could develop complex ideas and illustrate them with simple and meaningful examples without sacrificing his thought and (often strong) theoretical positioning. This quality transpires through his writings and was very much appreciated in all the interdisciplinary projects mentioned above. Michel didn't see philosophy as very different from biology; he saw it as part of the spectrum of what biology could involve. And he thought philosophy was an important part of biology that was worth the time and effort. So, despite his health problems, he continued to make room in his research for philosophy until the very end.

On a more personal level, I want to take the opportunity of this letter to acknowledge the huge impact that Michel had on my trajectory as a philosopher. In 2011, Michel agreed to host me for a 6-month lab internship in his team, despite my absence of experience in a wet lab. He never got tired of my mistakes and ignorance, or of my philosophical obsessions about specific questions on stem cells.

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In fact, setting apart the experimental struggles and cultural shock associated with how experimental work differs from conceptual work, the internship felt like a real intellectual discussion. He spent hours with me at the microscope: analyzing what we were observing, discussing about what stem cells are, and teaching me all kinds of things about development and regeneration (he was a well of knowledge). He involved me in the building of the project, in the analysis of the results, and in the framing of the story. Michel was attentive to my thinking and interpretations of the data. It was no doubt the best possible integration of experimental biology and philosophy. This internship in his lab was only the start of a long-lasting collaboration with him and Eve Gazave, who supervised my internship at the time, and soon became his right arm in the lab. Ever since, we have continued to develop common work based on questions that emerged from this internship around stemness signature. Our collaboration was an important part of our respective activities. For me, that internship also led to a radical change in my own conception of philosophy. I have learned how being in a lab and getting involved with experimental work is incredibly valuable for the development of philosophy of biology. Ever since, I have put all my effort in improving the joining of philosophy and experimental work.

His contributions, his way of thinking, his open-mindedness, and his talent for navigating between experimental biology, evolutionary biology, and philosophy will be deeply missed.

Relatedly, there was a workshop around Prof. Vervoort's work organized on January 20 at the Sorbonne entitled: "Stem cells across animals, tissues, and contexts". See the next page for a brief description...

From the world of PiBM

Stem cells play a central role in the development, maintenance, and regeneration of most multicellular organisms. There can be multiple types of stem cells in a single organism, in different tissues and at different stages of its development. These stem cells can vary in their properties and behaviors. This diversity questions the very notion of stem cell. In the ANR project STEM, we want to question the concept of stem cells through multiple approaches (philosophy, experimental biology, phylogeny, bioinformatics) and in multiple contexts (development, homeostasis, regeneration, and cancer). This workshop aims at discussing these questions.

The ANR project, led by Lucie Laplane (Philosophy, Univ Paris 1), was built with 2 teams: Michel Vervoort and Eve Gazave (Evo-Devo, Institut Jacques Monod) and Raphael Itzykson (hematology, Saint-Louis Hospital). This workshop was dedicated to the memory of Michel Vervoort.

Looking ahead…

That's all the announcements for now. Given the delay in this newlsetter, hopefully there will still be time to get your announcements for February's edition. Once again, all the best in the new year in your corner of the world!