



# Gergő Pálfalvi

POSTDOCTORAL FELLOW

Division of Evolutionary Biology, National Institute for Basic Biology, Okazaki, Japan

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## Personal Information

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Name: **PÁLFALVI**, Gergő

Date of Birth: **22 February 1992**

Nationality: Hungarian

## Education

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### The Graduate University for Advanced Studies, SOKENDAI

DOCTOR OF PHILOSOPHY

*Okazaki, Japan*

*1 October 2015 - 31 September 2020*

### University of Pecs

MASTER OF SCIENCE, BIOLOGY

*Pecs, Hungary*

*1 September 2013 - 31 July 2015*

### University of Pecs

BACHELOR OF SCIENCE, BIOLOGY

*Pecs, Hungary*

*1 September 2010 - 31 July 2013*

## Work experience

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### National Institute for Basic Biology

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*Okazaki, Japan*

*1 October 2020 - present*

- Constrained and Directional Evolution (<http://constrained-evo.org/>)

## Skills

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### MOLECULAR- AND MICROBIOLOGY

- RNA and DNA isolation from various plants
- Isolation and work with High Molecular Weight DNA
- Organelle isolation, gradient centrifugation
- Gene cloning, *Agrobacterium* work
- Plant transformation via *Agrobacterium*

### NEW GENERATION SEQUENCING

- Whole genome sequencing, RNA-seq (short and long read), ATAC-seq, ChIP-seq
- Single cell omics (Gene expression, ATAC, Multiome)
- Used technologies: Illumina, Pacific Biosciences, Oxford Nanopore Technologies, 10XGenomics

### BIOINFORMATICS

- Proficient in R, UNIX, NextFlow
- Genome assembly, annotation, RNA-seq, ChIP-seq, single cell omics analysis
- General data analysis and statistics
- Intermediate in Python, Snakemake

### HISTOLOGY AND MICROSCOPIC TECHNIQUES

- FFPE and fresh frozen tissue sectioning and staining
- RNA *in situ* hybridization
- Confocal (Leica SP8) and lightsheet (Zeiss Z.1) microscopy

## Teaching Experience

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### Student Seminar Committee Member for Freshman Course

THE GRADUATE UNIVERSITY FOR ADVANCED STUDIES, SOKENDAI

Hayama, Kanagawa, Japan

2017

### Organization of new generation sequencing, bioinformatics and statistics study groups

NATIONAL INSTITUTE FOR BASIC BIOLOGY

2016 - present

## Awards and Grants

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### Visiting Researcher at National Institute for Basic Biology

CAMPUS HUNGARY SCHOLARSHIP

Hungary

2013

### Visiting Researcher at National Institute for Basic Biology

NIBB INTERNSHIP PROGRAM

Japan

2014

### PhD position at National Institute for Basic Biology

THE MINISTRY OF EDUCATION, CULTURE, SPORTS, SCIENCE AND TECHNOLOGY (MEXT) OF JAPAN

Japan

2015-2020

## Publications

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- Fukushima, K, Narukawa, H, **Palfalvi, G**, Hasebe, M (2021), A discordance of seasonally covarying cues uncovers misregulated phenotypes in the heterophyllous pitcher plant *Cephalotus follicularis*. *Proceedings of the Royal Society B* **accepted**
- Rice, S, Fryer, E, Jha, SG, et al; The Plant Cell Atlas Consortium [incl. **Palfalvi, G**] (2020), First plant cell atlas workshop report. *Plant Direct*, **00** 1– 10
- Gu, N, Tamada, Y, Imai, A, **Palfalvi, G**, Kabeya, Y, Shigenobu, S, Ishikawa, M, Angelis, KJ, Chen, C, Hasebe, M (2020), DNA damage triggers reprogramming of differentiated cells into stem cells in *Physcomitrella*. *Nature Plants*, **6(9)** 1098–1105
- **Palfalvi, G**, Hackl, T, Terhoeven, N, Shibata, TF, Nishiyama, T, Ankenbrand, M, Becker, D, Förster, F, Freund, M, Iosip, A, Kreuzer, I, Saul, F, Kamida, C, Fukushima, K, Shigenobu, S, Tamada, Y, Adamec, L, Hoshi, Y, Ueda, K, Winkelmann, T, Fuchs, J, Schubert, I, Schwacke, R, Al, K, Schultz, J, Hasebe, M, Hedrich, R (2020), Genomes of the Venus Flytrap and Close Relatives Unveil the Roots of Plant Carnivory. *Current Biology*, **30(12)** 2312-2320
- Fukushima, K, Fang, X, Alvarez, D, Cai, H, Carretero, L, Chen, C, Chang, TH, Farr, KM, Fujita, T, Hiwatashi, Y, Hoshi, Y, Imai, T, Kasahara, M, Librado, P, Mao, L, Mori, H, Nishiyama, T, Nozawa, M, **Palfalvi, G**, Pollard, ST, Rozas, J, Sánchez, A, Sankoff, D, Shibata, TF, Shigenobu, S, Sumikawa, N, Uzawa, T, Xie, M, Zheng, C, Pollock, DD, Albert, VA, Li, S, Hasebe, M (2017), Genome of the pitcher plant *Cephalotus* reveals genetic changes associated with carnivory. *Nature Ecology & Evolution*, **1(3)** 1-9
- Zhang, Y, Li, C, Zhang, J, Wang, J, Yang, J, Lv, Y, Yang, N, Liu, J, Wang, X, **Palfalvi, G**, Wang, G, Zheng, L (2017), Dissection of HY5/HYH expression in *Arabidopsis* reveals a root-autonomous HY5-mediated photomorphogenic pathway. *PLoS One*, **12(7)** e0180449
- Li, C, Zheng, L, Zhang, J, Lv, Y, Liu, J, Wang, X, **Palfalvi, G**, Wang, G, Zhang, Y (2017), Characterization and functional analysis of four HYH splicing variants in *Arabidopsis* hypocotyl elongation. *Gene* **619** 44-49
- Szalontai, B, Stranczinger, S, **Palfalvi, G**, Mauch, B, Jakab, G (2012), The taxon-specific paralogs of grapevine PRLIP genes are highly induced upon powdery mildew infection. *Journal of Plant Physiology*, **169** 1767-1775

## Conference posters and presentations

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- **Palfalvi, G**, Hasebe, M (2018), Leaf fate determination in the carnivorous plant *Cephalotus follicularis*, Conference Poster for The 46th Naito Conference: Mechanisms of Evolution and Biodiversity, Hokkaido, Japan