

JOANNA GRACE SANDLE



National Academy of Scientist Education, Ph.D. 1st year

University of Szeged
Doctoral School of Biology
Ph.D. 1st year

YEAR OF BIRTH

2000

FORMER SZENT-GYÖRGYI PUPIL

no

RESEARCH UNIT

University of Szeged

SZENT-GYÖRGYI MENTOR

Gábor Tamás

JUNIOR MENTOR

Gábor Molnár

SPECIALIZATION

neurobiology,
electrophysiology

SECONDARY SCHOOL

ELTE Bolyai János Primary
and Secondary Grammar
School

NAME OF TEACHER

Katalin Horváth
József Baranyai

LANGUAGES

English/advanced

IMPORTANCE, AIMS AND POSSIBLE OUTCOME OF RESEARCH

The way we perceive and process information and inputs from our environment is unique to us, humans and still most of the mechanisms which enable us to perform complex and abstract thinking are yet to be discovered. In Tamás Gábor's Research Group for Cortical Microcircuits we seek to unveil the underlying elementary mechanisms of this process on the level of synapses and neural microcircuits and the functions of different cell types in rodent and human cortical cortex. We have the excellent opportunity to compare the functions of the commonly used model animals' brain with ours by performing in vitro patch clamp in non-pathological human brain slices among other electrophysiological techniques. Our primary focus is on the role of inhibitory interneurons in such networks.

AMBITIONS AND CAREER GOALS

I endeavour to exploit the opportunities offered by Szent-Györgyi programme, broaden my understanding and learn new methods. It is of great importance to me to keep up with the developments and findings of neuroscience, and to acquire up-to-date, applicable knowledge not only in the fields of neurobiology and electrophysiology but also in borderline sciences. I want to become a useful member of a research group and be able to contribute to the development of my field of expertise.

HONORS AND PRIZES

- 2018 OKTV, biology 26th place
- 2019 OKTV, biology 29th place
- 2022 Annual Scientific Students Association, University of Szeged, Faculty of Science and Informatics, Biology - neuroscience, cell section - 1st place

PUBLICATIONS

Chartrand, T., Dalley, R., Close, J., Goriounova, N. A., Lee B. R., Mann, R., Miller, J. A., Molnár, G., Mukora, A., Alfiler, L., Baker, K., Bakken, T. E., Berg, J., Bertagnolli, D., Braun, T., Brouner, K., Casper, T., Csajbok, E. A., Dee, N., Egdorf, T., Enstrom, R., Galakhova, A. A., Gary, A., Gelfand, E., Goldy, J., Hadley, K., Heistek, T. S., Hill, D., Jorstad, N., Kim, L., Kocsis, A. K., Kruse, L., Kunst, M., Leon, G., Long, B., Mallory, M., McGraw, M., McMillen, D., Melief, E. J., Mihut, N., Ng, L., Nyhus, J., Oláh, G., Ozsvár, A., Omstead, V., Peterfi, Z., Pom, A., Potekhina, L., Rajanbabu, R., Rozsa, M., Ruiz, A., **Sandle, J.**, Sunkin, S. M., Szots, I., Tieu, M., Toth, M., Trinh, J., Vargas, S., Vumbaco, D., Williams, G., Wilson, J., (...) Lein, E. S. (2023) Morphoelectric and transcriptomic divergence of the layer 1 interneuron repertoire in human versus mouse neocortex. **Science** **382**: eadf0805.

Iacone, Y., Morais, T. P., David, F., Delicata, F., **Sandle, J.**, Raffai, T., Parri, H. R., Weisser, J. J., Bundgaard, C., Klewe, I. V., Tamás, G., Thomsen, M. S., Crunelli, V., Lőrincz, M. L. (2021) Systemic administration of ivabradine, a hyperpolarization-activated cyclic nucleotide-gated channel inhibitor, blocks spontaneous absence seizures. **Epilepsia** **62**: 1729-1743.