

## **PERSONAL INFORMATION OF THE PI**

Family name, First name: Lázár, Viktória  
Researcher unique identifier: orcid.org/0000-0002-9778-941X  
MTMT identifier: 10036222  
Nationality: Hungarian

## **CURRENT POSITION**

2022-03-01 Principal investigator, Synthetic and Systems Biology Unit, Institute of Biochemistry, Biological Research Centre, Szeged, Hungary  
2022-07-01 HCEMM Junior Group Leader

## **PREVIOUS POSITIONS**

2017–2021 Postdoctoral research fellow, Lab of Roy Kishony, Department of Biology, Israel Institute of Technology-TECHNION, Haifa, Israel  
2013–2016 Postdoctoral research fellow, Lab of Csaba Pal, Synthetic and Systems Biology Unit, Institute of Biochemistry, Biological Research Centre, Szeged, Hungary  
2009–2013 Research assistant, Synthetic and Systems Biology Unit, Institute of Biochemistry, Biological Research Centre, Szeged, Hungary  
2005–2009 PhD student, Department of Preventive Medicine, Faculty of Public Health, University of Debrecen, Hungary  
2004–2005 Research student, King's College London, Department of Life Sciences, London, UK

## **EDUCATION**

2013 PhD in Life Science, Department of Preventive Medicine, Faculty of Public Health, University of Debrecen, Hungary  
2008-2012 BSc - Software engineering, Department of Preventive Medicine, Faculty of Public Health, University of Debrecen, Hungary  
2002-2004 MSc - Molecular biology, Department of Preventive Medicine, Faculty of Public Health, University of Debrecen, Hungary

## **FELLOWSHIPS AND AWARDS**

2021–2022 Postdoctoral Fellowship of the Israel Institute of Technology-TECHNION, Department of Biology, Haifa, Israel  
2017–2020 HFSP Long-term Postdoctoral Fellowship, Israel Institute of Technology-TECHNION, Department of Biology, Haifa, Israel  
2017 FEBS Long-term postdoctoral fellowship (declined)  
2017 Marie Skłodowska-Curie Actions Seal of Excellence  
2015 Albert Szent-Gyorgyi Young Investigator Award of the New York Hungarian Scientific Society  
2014–2016 Postdoctoral fellowship of the Hungarian Academy of Sciences, Biological Research Centre, Hungary, Szeged

- 2014 First prize for outstanding scientific accomplishment in the EMBO conference
- 2014 Young Investigator Award of the Hungarian Academy of Sciences
2012. First prize for outstanding scientific accomplishment in the Gordon Research Conference

### **TEACHING ACTIVITIES**

- 2014– 2015 Graduate Teaching Assistant – Systems Biology Course for MSc students, University of Szeged, Hungary
- 2014–2015 Graduate Teaching Assistant – Biochemistry Course for BSc students, Department of Life Sciences, King’s college, London, UK

### **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

- 2013–2016 2 PhD students, 2 Master’s students, Institute of Biochemistry, Biological Research Centre, Szeged, Hungary

### **PEER REVIEWING SERVICE**

Molecular Biology and Evolution, Plos Biology, Nature Communications, Nature ecology & evolution, Nature Microbiology

### **MAJOR COLLABORATIONS**

Roy Kishony (Israel Institute of Technology-Technion, Haifa, Israel)

Csaba Pál (Biological Research Center, Szeged, Hungary)

Balazs Papp (Biological Research Center, Szeged, Hungary)

Sebastian Boenhoeffer (Institute of Integrative Biology, ETH Zürich, Switzerland)

Daniel Barkan (The Robert H. Smith Faculty of Agricultural, Food & Environment, The Hebrew University of Jerusalem)

Balint Csörgő (EMBL, Heidelberg, Germany)

Idan Yelin (Israel Institute of Technology-Technion, Haifa, Israel)

Ákos Nyerges (Harvard Medical School, Boston, US)

Attila Megyeri (University of Debrecen, Faculty of Medicine, Department of Pharmacology and Pharmacotherapy, Debrecen, Hungary)

Gábor Boross (Stanford University, US)

Balázs Szappanos (Biological Research Center, Szeged, Hungary)

### **CAREER BREAKS**

From 05.2018 to 09.2018 Parental leave with my first kid.

From 07.2020 to 10.2020 Parental leave with my second kid.

### **INVITED TALKS AT INTERNATIONAL VENUES**

**Rising Stars in Biomedicine symposium of the Broad Institute** (Boston, US, 2019) Title: *Antibiotic persistence in multidrug treatment*

**Young Microbiologist Symposium** (Norwich, UK, 2019), Title: *Antibiotic persistence in multidrug treatment*

**Seminar of the Michael Baym lab at the Harvard Medical School** (Boston, US, 2019) Title: *Antibiotic persistence in multidrug treatment*

**117th International Titisee Conference** (Titisee, Germany 2018), Title: *Antimicrobial peptides: are they promising weapon against antibiotic resistant bacteria?*

**26th ECCMID congress**, (Amsterdam, Netherlands, 2016), Title: *Collateral sensitivity and cross-resistance networks - potential clinical implications*, Amsterdam

**FEMS Microbiology Conference**, (Leipzig, Germany, 2013 July 21-25), Title: *Bacterial evolution of antibiotic hypersensitivity*

**Seminar of the Jens Rolff lab at the Department of Biology, Freie Universität** (Berlin, Germany, 2015 September 21), Title: *Evolution of resistance against antimicrobial peptides*

**FRISBI seminar of the IST institute** in the Tobias Bollenbach's research group (Vienna, Austria, 2013 December 6), Title: *Genome-wide analyses of the cross-resistance interaction network*

## **PUBLICATION ACTIVITY**

Many of my previous publications have been published in top-ranked interdisciplinary journals, including *Nature Microbiology* (2 papers), *Nature Communications* (4 papers), *Molecular Systems Biology* (1), *PNAS* (2), *Elife* (1), *Plos Biology* (2), *Molecular Biology and Evolution* (1) all of which have been achieved without my PhD supervisor. I have also 1 paper in *Antimicrobial Agents and Chemotherapy*. I authored 1 review paper (*Trends in Microbiology*) and 2 News & Views (*Nature microbiology*, and *Nature Chemical Biology*) on the field of antibiotic resistance evolution.

### **Publication statistics as of March 2022:**

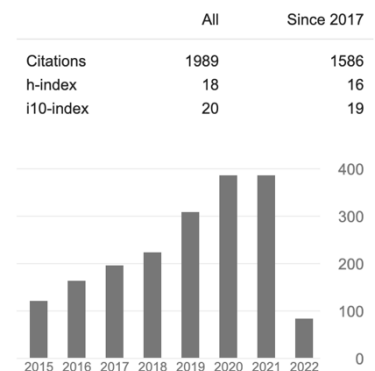
Cumulative impact factor: 184.5

Number of peer-reviewed research papers: 22

Total number of citations (Google scholar): 1989

Total number of independent citations (MTMT): 1206

h-index (Google Scholar): 18



## **LIST OF 10 KEY PUBLICATIONS**

Spohn, R., Daruka, L., **Lázár, V.**, Martins, A., Vidovics, F., Grézal, G., Méhi, O., Kintses, B., Számel, M., Jangir, PK., Csörgő, B., Györkei, Á., Bódi, Z., Faragó, A., Bodai, L., Földesi, I., Kata, D., Maróti, G., Pap, B., Wirth, R., Papp, B., Pál, C. Integrated evolutionary analysis reveals antimicrobial peptides with limited resistance. *Nature Communications* (2019) (n.independent citations =83)

Dunai, A., Spohn, R., Farkas, Z., **Lázár, V.**, Györkei, Á., Apjok, G., Boross, G., Szappanos, B., Grézal, G., Faragó, A., Bodai, L., Papp, B., Pál, C. Rapid decline of bacterial drug-resistance in an

antibiotic-free environment through phenotypic reversion. *Elife* (2019) (n.independent citations =12)

Apjok G., Boross G., Nyerges Á., Fekete G., Lázár V., Papp B., Pál C., Csörgő B.: Limited evolutionary conservation of the phenotypic effects of antibiotic resistance mutations, *Molecular Biology and Evolution* (2019) (n.independent citations: 11)

**Lázár V.**, Kishony R: Transient antibiotic resistance calls for attention, *Nature microbiology* 4: (10) pp. 1606-1607., 2019; (independent citations: 3)

**Lázár, V.**, Martins, A., Spohn, R., Daruka, L., Grézal, G., Fekete, G., Számel, M., Jangir, P.K., Kintses, B., Csörgő, B., Nyerges, Á., Györkei, Á., Kincses, A., Dér, A., Walter, F.R., Deli, M.A., Urbán, E., Hegedűs, Z., Olajos G., Méhi, O., Bálint, B., Nagy, I., Martinek, T. A., Papp B., Pál C. Antibiotic-resistant bacteria show widespread collateral sensitivity to antimicrobial peptides. *Nature Microbiology* (2018) (n.independent citations: 150)

Nyerges Á., Csörgő B., Nagy I., Bálint B., Bihari P., **Lázár V.**, Apjok G., Umenhoffer K., Bogos B., Pósfai G., Pál C. A highly precise and portable genome engineering method allows comparison of mutational effects across bacterial species. *PNAS* (2016) (n.independent citations: 80)

Pál C, Papp B, **Lázár V.** Collateral sensitivity of antibiotic-resistant microbes. *Trends in Microbiology* (2015) (n.independent citations: 111)

**Lázár V.**, Nagy I, Spohn R, Csörgő B, Györkei Á, Nyerges Á, Horváth B, Vörös A, Busa-Fekete R, Hrtyan M, Bogos B, Méhi O, Fekete G, Szappanos B, Kégl B, Papp B, Pál C. Genome-wide analysis captures the determinants of the antibiotic cross-resistance interaction network. *Nature Communications* (2014) (n.independent citations=109)

Ocampo PS, **Lázár V.**, Papp B, Arnoldini M, Abel zur Wiesch P, Busa-Fekete R, Fekete G, Pál C, Ackermann M, Bonhoeffer S. Antagonism between bacteriostatic and bactericidal antibiotics is prevalent. *Antimicrobial Agents and Chemotherapy* (2014) (n.independent citations=134)

**Lázár V.**, Singh GP, Spohn R, Nagy I, Horváth B, Hrtyan M, Busa-Fekete R, Bogos B, Méhi O, Csörgő B, Pósfai Gy, Fekete G, Szappanos B, Kégl B, Papp B & Pál Cs Bacterial evolution of antibiotic hypersensitivity. *Molecular Systems Biology* (2013) (n. independent citations=171)