

CURRICULUM VITAE

Name: **Pavel Dvořák**

Birth Date: August 9, 1983

Place of Birth: Kroměříž (Czech Republic)

Nationality: Czech

ORCID ID: 0000-0002-3215-4763

Researcher ID (WoS): AAO-7902-2020.

Education

- 1.9.2009-7.11.2014: **Ph.D. in Molecular and Cellular Biology**, Thesis: *Engineering of the synthetic metabolic pathway for biodegradation of environmental pollutant*. Masaryk University, Brno, Czech Republic.
- 1.9.2007-22.6.2009: **MSc.**, Masaryk University.
- 1.9.2004-28.6.2007: **Bc.**, Masaryk University.

Current and previous work positions

- 1.1.2019-now: **Assistant Professor and head of Microbial Bioengineering Laboratory**, Section of Microbiology, Department of Experimental Biology, Faculty of Science, Masaryk University, Kamenice 5/A25, Brno Bohunice 62500, Czech republic.
- 1.10.2018-31.12.2018: **postdoctoral researcher**, Molecular Environmental Microbiology Laboratory, Systems Biology Program, Centro Nacional de Biotecnología (CNB), Agencia Estatal Consejo Superior de Investigaciones Científicas (CSIC), Campus Cantoblanco, C/ Darwin 3, Madrid 28049, Spain.
- 1.10.2016-30.9.2018: **Marie S. Curie Fellow (H2020-MSCA-IF-2015)**, Molecular Environmental Microbiology Laboratory, Systems Biology Program, CNB-CSIC.
- 10.6.2015-30.9.2016: **postdoctoral researcher**, Molecular Environmental Microbiology Laboratory, Systems Biology Program, CNB-CSIC.
- 1.3.2015-31.5.2015: **research assistant**, Department of Experimental Biology, Faculty of science, Masaryk University, Brno, Czech Republic.
- 1.1.2013-31.12.2014: **research assistant**, Research Centre for Toxic Compounds in the Environment RECETOX, Faculty of Science, Masaryk University, Brno, Czech Republic.
- 1.3.2011-28.2.2015: **Ph.D. student**, International Clinical Research Center (FNUSA-ICRC), Brno, Czech Republic.
- 1.11.2009-28.2.2011: **research assistant**, Mendel's Centre for Education in Biology, Biomedicine and Bioinformatics, Department of Biology, Medical Faculty, Masaryk University, Brno, Czech Republic.

Teaching experience

- 2019-now: Supervisor of 4 and 5 successfully defended Diploma and Bachelor Theses, respectively. Currently supervisor of 3 Ph.D. students, 4 Master students, and 1 Bachelor student.
- 2020-now: Course **Bi7034 Úvod do metabolického inženýrství a syntetické biologie mikroorganismů** (Introduction to the metabolic engineering and synthetic biology of microorganisms), guarantee and lecturer, autumn semester, Masaryk University, Brno, Czech Republic.
- 2019-now: Course and practices **Bi6721 and Bi6721c Speciální metody analýzy mikroorganismů** (Special Methods for Analysis of Microorganisms), guarantee and lecturer, spring semester, Masaryk University.
- 2019-now: Course **Bi1044 Úvod do studia specializace Mikrobiologie** (Introduction to the study of Microbiology specialization), lecturer, autumn semester, Masaryk University.
- 2020-now: seminar **Bi7033 Seminář laboratoří Oddělení mikrobiologie** (Seminar of the laboratories of the Section of Microbiology), guarantee and lecturer, spring and autumn semesters, Masaryk University.
- 2012-now, course **Bi7430 Molekulární biotechnologie** (Molecular Biotechnology), lecturer, 1-2 lectures on Metabolic Engineering and Synthetic Biology per autumn semester, Masaryk University.
- 24.9.-1.10.2017 **EMBO Practical course: Synthetic Biology in action**, Heidelberg, Germany, supervisor and lecturer.
- 17.-21.6.2012 and 22.-26.6.2014 Loschmidt Laboratories **Summer School of Protein Engineering**; supervisor, mentor and lecturer, lecture Molecular Biology in Protein Engineering, Masaryk University.

- 2013-2014, course **Bi7430c Molekulární biotechnologie – cvičení** (Molecular Biotechnology - Practice), lecturer, 1 practice per autumn semester, Masaryk University.

Awards and fellowships

- 2021: **Masaryk Award in Science and Humanities Junior** (Grant Agency of Masaryk University, Brno, Czech Republic)
- 2019: **FEMS Congress Attendance Grant** for FEMS Congress 2019, Glasgow, UK.
- 2018: **MSCA IF Seal of Excellence** for the non-financed MSCA-IF-2018-EF-ST project TOGETHER (Proposal number: 835528)
- 2018: **EMBL Corporate Partnership Programme Travel Grant** for attendance of EMBL Course: Microbial Communities: Modelling Meets Experiments.
- 2018: **Young Czech and Slovak Microbiologist of the year 2017**, Czechoslovak Society for Microbiology.
- 2016: Awarded by a **two-year Marie S. Curie Individual Fellowship** (H2020-MSCA-IF-2015).
- 2014: **The Sigma-Aldrich and Czech Society for Biochemistry and Molecular Biology award of Gerty T. and Carl. F. Cori in the field of biochemistry and molecular biology**, Interdisciplinary Meeting of Young Biologists, Biochemists, and Chemists, Milovy, Czech Republic.
- 2014: Award **Top Paper in Environmental Technology** for ER's article in Environmental Science & Technology journal of American Chemical Society.
- 2013: **Fellowship ICRC Human Bridge III: Incubator of Young Talents** (CZ.1.07/2.3.00/20.0239) of International Clinical Research Center (FNUSA-ICRC, Brno, Czech Republic) for research stay in Centro Nacional de Biotecnología, Madrid, Spain.
- 2014, 2010, and 2009: **Awards of the Dean of the Faculty of Science** for exemplary representation of the faculty on international scientific conferences, successful organisation of the student scientific conference, and for excellent students of master studies and outstanding results in the field of study, respectively, Masaryk University, Czech Republic.
- 2008: **Award of the Czech Society for Biochemistry and Molecular Biology** for the best presentation at XII. Meeting of Biochemists and Molecular Biologists, Section of Young Investigators, Brno, Czech Republic.

Research projects

- 1.1.2022-31.12.2024: **Czech Science Foundation (GAČR) Standard Project**. Synthetic consortium of *Pseudomonas putida* strains for biodegradation and co-utilisation of (hemi)cellulosic polymers.; 22-12505S; principal investigator.
- 1.1.2022-31.12.2024: **Czech Science Foundation (GAČR) Standard Project**. Unraveling the role of polyhydroxyalkanoates in *Schlegelella thermodepolymerans* – promising environmental bacterium for next generation biotechnology.; 22-12505S; co-investigator (PI prof. Stanislav Obruča, BUT Brno).
- 1.1.2022-31.12.2024: **Grant Agency of Masaryk University (GAMU), Masaryk Award in Science and Humanities (MASH) Junior**. *A new generation bacterial platform for lignocellulose biotechnology*, principal investigator.
- 1.1.2019-31.12.2021: **Czech Science Foundation (GAČR) Junior Project**. Orthogonalisation of carbohydrate metabolism in bacterial chassis *Pseudomonas putida* EM42 for co-utilisation of lignocellulose-derived sugars; GJ19-06511Y; principal investigator.
- 1.10.2016-30.9.2018: **Marie S. Curie Individual Fellowship (H2020-MSCA-IF-2015)**, project 704410: Refactoring *Pseudomonas putida* for biosynthesis of value-added polymers from cellulosic waste (acronym FUTURE), principal investigator.
- 2012-2016: **Czech Science Foundation (GAČR)**. Construction of a Synthetic Metabolic Pathway for Degradation of Important Environmental Pollutant by Protein and Metabolic Engineering; P503/12/0572; co-investigator (principal investigator prof. Jiri Damborsky). Project evaluated as excellent.
- 2010-2013: **Specific Research**, Category b) Support of specific research projects focused on organization of student scientific conferences. Masaryk University, Brno, Czech Republic.
- 2008-2009: **Masaryk University Rector's Program** for Support of Creative Activities of Students. Part A, Support of Excellent Diploma Theses. Semi-rational design and construction of haloalkane dehalogenases for biotechnological applications; 20081431A0006; principal investigator.

Organisation of scientific meetings

- 28.4.-29.4.2022: **The Biomania Student Scientific Meeting** on Biotechnology & Biomedicine 2022, Brno, Czech Republic. Chair of the Organizing Committee for Biotechnology session. (Book of Abstracts ISBN 978-80-280-0040-0)
- 30.9.-1.10.2019: **The Biomania Student Scientific Meeting on Biotechnology & Biomedicine and EUSynBioS Symposium 2019**, Brno, Czech Republic. Chair of the Organizing Committee. (Book of Abstracts ISBN 978-80-210-9373-7)
- 31.08.-1.9.2017: **EUSynBioS Symposium**, Madrid, Spain. Member of the Steering Committee.
- 3.10.2017 and 09/2015: **The Biomania Student Scientific Meeting** on Biotechnology and Biomedicine, Brno, Czech Republic. Member (2017) and Chair (2015) of the Organizing Committee (www.biomania.cz). (Books of Abstracts ISBN 978-80-210-8737-8 and 978-80-210-7933-5)
- 10.-12.4.2013 and 12.-13.4.2012 **The International Student Scientific Conference on Biotechnology and Biomedicine** (www.biomania.cz/conference-2013 or -2012), member of Organizing committee (2012) and vice-chair of Organizing Committee (2013), Brno, Czech Republic. (Books of Abstracts ISBN 978-80-210-5811-8 and 978-80-210-6200-9)
- 7.-8.4.2011 **The Student Scientific Conference on Cancer Research** (www.biomania.cz/conference-2011), member of Organizing committee, Brno, Czech Republic. (Book of Abstracts ISBN 978-80-210-5442-4)
- 8.-9.4.2010 **The Student Scientific Conference for Students Working with Genetically Modified Organisms (GMO)**; (www.biomania.cz), member of Organizing committee, Brno, Czech Republic. (Book of Abstracts ISBN 978-80-210-5160-7)

Publications in international peer-reviewed journals

Total citations (accessed 08/07/22): 665 (WoS), 715 (Scopus), 4 % of autocitations

Bujdoš, D., Popelářová, B., Volke, D.C., Nickel, P.I., Sonnenschein, N., **Dvořák, P.*** 2022 Engineering of *Pseudomonas putida* for accelerated co-utilization of glucose and cellobiose yields aerobic overproduction of pyruvate explained by an upgraded metabolic model. Manuscript under review. (*corresponding author)

Dvořák, P., Galvão, T.C., Pflüger-Grau, K., de Lorenzo, V., Jiménez, J.I. 2022 Water potential governs effector specificity of the transcriptional regulator XylR of *Pseudomonas putida* *in vivo*. Manuscript under review.

Obruča, S., **Dvořák, P.**, Sedláček, P., Koller, M., Sedlář, K., Pernicová, I., Šafránek, D., 2022: Polyhydroxyalkanoates synthesis by halophiles and thermophiles: towards sustainable production of microbial bioplastics. *Biotechnology Advances*. 58:107906. (Q1, 2021 IF = 17.681)

Dvořák, P., Alvarez-Carreño, C., Ciordia, S., Paradela, A., de Lorenzo, V., 2021: An updated structural model of the A domain of the *Pseudomonas putida* XylR regulator poses an atypical interplay with aromatic effectors. *Environmental Microbiology* 23(8):4418-4433. (Q1, 2021 IF = 5.491)

Espeso, D.R., **Dvořák, P.**, Aparicio, T., de Lorenzo, V., 2020: An automated DIY framework for experimental evolution of *Pseudomonas putida*. *Microbial Biotechnology* 14(6):2679-2685. (Q1, 2020 IF = 5.328)

Dvořák, P.*, Bayer, E.A., de Lorenzo, V., 2020: Surface display of designer protein scaffolds on genome-reduced strains of *Pseudomonas putida*. *ACS Synthetic Biology* 9(10):2749-2764. (*co-corresponding author, Q1, 2020 IF = 4.411)

Dvořák, P.*, Kováč, J., de Lorenzo, V., 2020: Biotransformation of D-xylose to D-xylonic acid coupled to medium chain length polyhydroxyalkanoate production in cellobiose-grown *Pseudomonas putida* EM42. *Microbial Biotechnology* 13(4):1273-1283. (*corresponding author, Q1, 2020 IF = 5.328)

Demko, M., Chrást, L., **Dvořák, P.**, Damborský, J., Šafránek, D., 2019: Computational Modelling of Metabolic Burden and Substrate Toxicity in *Escherichia coli* Carrying a Synthetic Metabolic Pathway. *Microorganisms* 7(11), 553. (Q2, 2019 IF = 4.167)

Dvořák, P., de Lorenzo, V., 2018: Refactoring the upper sugar metabolism of *Pseudomonas putida* for co-utilization of cellobiose, xylose, and glucose. *Metabolic Engineering* 48:48-108. (Q1, 2018 IF = 8.142).

Vanacek, P., Sebestova, E., Babkova, P., Bidmanova, S., Daniel, L., **Dvorak, P.**, Stepankova, V., Chaloupkova, R., Brezovsky, J., Prokop, Z., Damborsky, J., 2018: Exploration of Enzyme Diversity by Integrating Bioinformatics with Expression Analysis and Biochemical Characterization. *ACS Catalysis* 8: 2402–2412. (Q1, 2018 IF = 10.614)

Dvorak, P., Bednar, D., Vanacek, P., Balek, L., Eiselleova, L., Stepankova, V., Sebestova, E., Bosakova, M.K., Konecna, Z., Mazurenko, S., Kunka, A., Vanova, T., Zoufalova, K., Chaloupkova, R., Brezovsky, J., Krejci, P., Prokop, Z., Dvorak, P., Damborsky, J., 2018: Computer-Assisted Engineering of Hyperstable Fibroblast Growth Factor 2. *Biotechnology and Bioengineering* 115:850-862. (Q1, 2018 IF = 4.481, **article selected for cover picture of the journal volume in April 2018**)

Dvořák, P., Nickel, P.I., Damborský, J., de Lorenzo, V., 2017: Bioremediation 3.0: Engineering pollutant-removing bacteria in the times of systemic biology. *Biotechnology Advances* 35: 845-866. (Q1, 2017 IF = 10.597)

Brezovsky, J., Babkova, P., Degtjarik, O., Fortova, A., Gora, A., Iermak, I., Rezacova, P., **Dvorak, P.**, Kuta Smatanova, I., Prokop, Z., Chaloupkova, R., Damborsky, J., 2016: Engineering a de Novo Transport Tunnel. *ACS Catalysis* 6: 7597-7610. (Q1, 2016 IF = 10.614)

Dvorak, P., Chrast, L., Nickel, P.I., Fedr, R., Soucek, K., Chaloupkova, R., de Lorenzo, V., Prokop, Z., Damborsky, J., 2015: Exacerbation of substrate toxicity by IPTG in *Escherichia coli* BL21(DE3) carrying a synthetic metabolic pathway. *Microbial Cell Factories*, 14:201. (Q1, 2015 IF = 4.544, **among the most influential articles in MCF in 2015 and 2016 based on Altmetric.com**)

Dvorak, P., Kurumbang, N.P., Bendl, J., Brezovsky, J., Prokop, Z., Damborsky, J., 2014: Maximizing the Efficiency of Multi-enzyme Processes by Stoichiometry Optimization. *ChemBioChem*, 15:1891-1895. (Q1, 2014 IF = 3.088)

Kurumbang, N.P.*, **Dvorak, P.***, Bendl, J., Brezovsky, J., Prokop, Z., Damborsky, J., 2014: Computer-Assisted Engineering of the Synthetic Pathway for Biodegradation of a Toxic Persistent Pollutant. *ACS Synthetic Biology*. 3: 172-181. (*shared first author, Q1, 2014 IF = 3.951)

Dvorak, P., Bidmanova, S., Prokop, Z., Damborsky, J., 2014: Immobilized Synthetic Pathway for Biodegradation of Toxic Recalcitrant Pollutant 1,2,3-Trichloropropane. *Environmental Science and Technology*. 48: 6859–6866. (Q1, 2014 IF = 5.33, **ACS Editors' Choice May 24 2014, the best Technology article out of 1,500 published papers in 2014 in Environmental Science and Technology**)

Koudelakova, T., Bidmanova, T., **Dvorak, P.**, Pavelka, A., Chaloupkova, R., Prokop, Z., Damborsky, J., 2013: Haloalkane Dehalogenases: Biotechnological Applications. *Biotechnology Journal*. 8: 32-45. (Q1, 2013 IF = 3.37, **most cited article in Biotechnology Journal in 2014**).

Klvana, M., Pavlova, M., Koudelakova, T., Chaloupkova, R., **Dvorak, P.**, Prokop, Z., Stsiapanava, A., Kutý, M., Kuta-Smatanova, I., Dohnalek, J., Kulhanek, P., Wade, R.C., Damborsky, J., 2009: Pathways and Mechanisms for Product Release in the Engineered Haloalkane Dehalogenases Explored using Classical and Random Acceleration Molecular Dynamics Simulations. *Journal of Molecular Biology*. 392(5): 1339-1356. (Q1, 2009 IF = 4.018)

Patents

Dvořák, P., de Lorenzo V., 2017: Recombinant *Pseudomonas putida* for the production of D-xylonate from D-xylose. **Consejo Superior de Investigaciones Científicas, Spain. Patent WO2019008131A1**. Spanish patent application No. ES1641.1300. Filing number PCT/EP2018/068347, claiming priority date 06/July/2017.

Dvorak, P., Krejci, P., Balek, L., Eiselleova, L., Konecna, Z., Dvorak, P., Bednar, D., Brezovsky, J., Sebestova, E., Chaloupkova, R., Stepankova, V., Vanacek, P., Prokop, Z., Damborsky, J., Bosakova, M., 2021: Thermostable FGF2 Polypeptide. **Masaryk University and Enantis, s.r.o., Brno, Czech Republic. Patent SG 11201804402W**.

Damborsky, J., Dvorak, P., Bednar, D., Brezovsky, J., Sebestova, E., Chaloupkova, R., Balek, L., Krejci, P., Dvorak, P., Konecna, Z., Eiselleova, L., Bosakova, M., Vanacek, P., Stepankova, V., Prokop, Z., 2020: Thermostable FGF2 Polypeptide, Use thereof and Culture Medium Containing Thermostable FGF2 Polypeptide. **Masaryk University and Enantis, s.r.o., Brno, Czech Republic. Patent EP3380508B1**.

Article in domestic non-peer reviewed journals

Pešta M., **Dvořák, P.**, 2021: Indukovaná bunková smrť baktérií a jej využitie v biotechnológiách. *Bulletin of Czechoslovak Society for Microbiology*.

Dvorak, P., 2015: Metabolické inženýrství. *Bulletin of Czech Society for Biochemistry and Molecular Biology*. ISSN 1211-2526.

Selected oral contributions at conferences and seminars

Dvořák, P., Bujdoš, D., Popelářová, B., Volke, D.C., Nikel, P.I., Sonnenschein, N. Engineering of *Pseudomonas putida* for fast co-utilization of glucose and cellobiose yields aerobic overproduction of pyruvate. 1.7.2022. FEMS Conference on Microbiology, Belgrade, Serbia (**presentation**).

Dvořák, P. Knowledge-driven engineering of bacteria and their biochemical pathways for bioprocessing of waste compounds. 9.2.2022 Seminar of Institute of Organic Chemistry and Biochemistry (IOCB), Prague, Czech Republic. (**invited lecture**).

Dvořák, P. Knowledge-driven de-bottlenecking of semi-synthetic xylose and cellobiose metabolism in *Pseudomonas putida*. 19.11.2021 Seminar of the Systems and Synthetic Biology Programme, CNB-CSIC, Madrid, Spain. (**on-line presentation**).

Dvořák, P., de Lorenzo, V. Upgrading *Pseudomonas putida* by synthetic biology for biotechnological processing of lignocellulosic substrates. 31.8.2021. XXVI. Annual Congress of Czech and Slovak Societies for Biochemistry and Molecular Biology with cooperation of Austrian and German Biochemical Section, České Budějovice, Czech Republic (**presentation**).

Dvořák, P. Engineering *Pseudomonas putida* whole-cell biocatalysts for biotechnological processing of lignocellulosic substrates. 16.6.2021. BioTech 2020, Prague, Czech Republic (**on-line presentation**).

Dvořák, P., de Lorenzo, V. Expanding the biocatalytic potential of *Pseudomonas putida* with surface-exposed designer protein scaffolds. 2.-4.11.2020 Applied Synthetic Biology in Europe V, Delft, The Netherlands (**on-line presentation**).

Dvořák, P. Re-factoring the interior and exterior of *Pseudomonas putida* for biotechnological processing of lignocellulosic waste. 29.10.2020: EUSynBioS webinar series (www.eusynbios.org, **on-line presentation**)

Dvořák, P., de Lorenzo, V. Engineering the interior and exterior of *Pseudomonas putida* for biotechnological processing of lignocellulosic substrates. 24.-26.9.2020 European Biotechnology Congress, Prague, CR (**on-line presentation**).

Dvořák, P., Engineering biocatalysts for biodegradation and valorization of recalcitrant waste compounds. 14.1.2020. DTU Biosustain seminar, Danish Technical University, Lyngby, Denmark (**invited presentation**).

Dvořák, P., Employing systemic biology in engineering bacteria and their biochemical pathways for biodegradation and valorization of recalcitrant waste compounds. 8.11.2019. Seminar of Institute of Molecular Biology and Biotechnology, Faculty of Biology, Adam Mickiewicz University, Poznan, Poland (**invited presentation**).

Dvořák, P., Martínez-García, E., de Lorenzo, V., Empowering *Pseudomonas putida* with surface-displayed designer protein scaffolds. 7.-11.7.2019 FEMS Congress, Glasgow, UK (**presentation**).

Dvořák, P., de Lorenzo, V., Refactoring metabolism of *Pseudomonas putida* for co-utilisation and valorization of lignocellulose-derived sugars. 24.-28.6.2018 Metabolic Engineering 12, Munich, Germany (poster, presented during **Rapid Fire Poster Session II**).

Dvořák, P., de Lorenzo, V., Making *Pseudomonas putida* like lignocellulose-derived sugars. 7.6.2018 Tomáškovy dny (domestic conference of Czechoslovak Society for Microbiology), Brno, Czech Republic (**presentation**).

Dvořák, P., de Lorenzo, V., Engineering *Pseudomonas putida* EM42 for co-utilization of lignocellulose-derived sugars. 2.5.2018 Symposium on Biotechnology for Fuels and Chemicals, Clearwater Beach, Florida, U.S.A. (**presentation**).

Dvorak, P., Re-factoring *Pseudomonas putida* for biosynthesis of value-added chemicals from lignocellulosic waste. 27.9.2017 EMBO Practical course: Synthetic Biology in action, Heidelberg, Germany (**invited lecture**).

Dvorak, P., Kurumbang, N.P., Bendl, J., Brezovsky, J., Prokop, Z., Damborsky, J., Computer-Assisted Engineering of a Synthetic Biodegradation Pathway: Revisiting Biodegradation with Synthetic Biology. EUSynBioS Symposium, 19.4.2016, Imperial College London, UK (**presentation**)

Dvorak, P., Kurumbang, N.P., Bendl, J., Brezovsky, J., Prokop, Z., Damborsky, J., Engineering of Biodegradation Pathway Using Methods of Synthetic Biology (in Czech). XXIV. Congress of the Czech and Slovak Societies of Biochemistry and Molecular Biology, 18.-21.9.2014. Bratislava, Slovakia (**presentation and chairing of the Biotechnology session of the congress**)

Dvorak, P., Kurumbang, N.P., Bendl, J., Brezovsky, J., Prokop, Z., Damborsky, J., Engineering of Metabolic Pathway for Biodegradation of Anthropogenic Pollutant Using Methods of Synthetic Biology (in Czech). *Interdisciplinary Meeting of Young Biologists, Biochemists, and Chemists*, 13.-16.5.2014. Milovy, Czech Republic (**presentation**)

Dvorak, P., Rational Engineering of Synthetic Biodegradation Pathway. Seminar of Centro Nacional de Biotecnología (CNB-CSIC), 7.10.2013, Madrid, Spain (**presentation**)

Dvorak, P., Kurumbang, N.P., Bendl, J., Brezovsky, J., Prokop, Z., Damborsky, J., *In Vitro* and *In Silico* Engineering of Multi-enzyme Reactions. *Biotrans*, 21.-25.7.2013. Manchester, UK (**presentation**)

Dvorak, P., Kurumbang, N.P., Bendl, J., Brezovsky, J., Prokop, Z., Damborsky, J., Rational Engineering of Synthetic Biodegradation Pathway. *Symposium Consistent Bioprocess Development*, 1.3.2013. Technische Universität Berlin, Germany (**invited lecture**)

Dvorak, P., Prokop, Z., Bednar, D., Brezovsky, J., Bidmanova, S., Damborsky, J., *In Vitro* Protein and Metabolic Engineering of Biodegradation Pathway. *Biotrans*, 2.-6.10.2011, Giardini Naxos, Italy (**presentation**)

Presentations for public

Dvořák, P., Genetically Modified Microorganisms and Their Use in Modern Biotechnologies (in Czech). Seminar for public during Day of Open Doors of MUNI 2019, MUNI, Czech Republic.

Dvořák, P., Synthetic Biology and Biotechnology for 21st Century. Seminar of Science and Technology Club, Brno University of Technology, 11.4.2017, Brno, Czech Republic (in Czech)

Short research stays

- 01/2020: Two week stay at **DTU Biosustain**, Lyngby, Denmark, group of dr. Pablo I. Nikel (contact person).
- 07/2016: One-month research stay at **Weizmann Institute of Science**, Rehovot, Israel, group of prof. Edward A. Bayer (contact person). Topics of interest: design of synthetic cellulosomes and synthetic bacterial consortia.
- 09-11/2013: Research stay at the **Centro Nacional de Biotecnología**, Madrid, Spain, group of prof. Víctor de Lorenzo (contact person). Topics of interest: SEVA standards and pSEVA plasmid vectors, flow cytometry techniques for determination of oxidative stress in G- bacteria, construction of a synthetic operon.
- 12/2010: One-week study stay at the **Wissenschafts Zentrum Straubing, Technische Universität München**, Germany, group of dr. Volker Sieber (contact person dr. Jan K. Gutterl.). Topic of interest: robotic screening of mutant libraries generated by directed evolution of industrially relevant enzymes.

International courses

- 3.-7.12.2018: **EMBL course Microbial Communities: Modelling Meets Experiments**, EMBL Heidelberg, Germany.
- 15.-19.6.2014: **International Synthetic and Systems Biology Summer School**, Taormina, Sicily, Italy.
- 29.10.-2.11.2012: **Advanced Course Metabolomics for Microbial Systems Biology**, BSDL-EDU, TU Delft, Delft, Netherlands.
- 6.-10.9.2010: **Protein Engineering - Rational Design & Directed Evolution**, Dechema Summer School, Institute of Biochemistry, Greifswald University, Germany.

Memberships in committees and societies

- 2019-now Permanent member of the State Exam Committee for Bachelor and Diploma study program B1530 B Experimental Biology, study field Special Biology, Microbiology, Masaryk University.
- 2019-now Society for Applied Microbiology (SFAM, UK)
- 2018-now European Federation of Biotechnology
- 2017 Member of Steering Committee (Engagement Officer) of The European Association of Students and Post-docs in Synthetic Biology (EUSynBioS)
- 2011-now Czech Society for Biochemistry and Molecular Biology (FEBS)
- 2011-now Czechoslovak Society for Microbiology (FEMS)

Reviewer Activities (2015-2022)

Microbial Biotechnology (John Wiley & Sons), Nucleic Acids Research (Oxford Academic), ACS Synthetic Biology, Current Opinion in Chemical Biology (Elsevier), Biotechnology Journal (John Wiley & Sons), Journal of Biotechnology (Elsevier), Scientific Reports (Nature Publishing Group), Applied Microbiology and Biotechnology (Springer), Folia Microbiologica (Springer), ACS Omega (ACS), mSystems (American Society for Microbiology), MicrobiologyOpen (John Wiley & Sons), Journal of Chemical Technology & Biotechnology (Wiley), Biomass Conversion and Biorefinery (Springer).