JERNEJ TURNŠEK

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EDUCATION

Harvard University Nov. 2019
Ph.D. in Biological and Biomedical Sciences, *Advisors: Andrew E. Allen, Pamela A. Silver*
Dissertation: Towards Subcellular Proteomic Maps in Model Marine Diatoms

University of Ljubljana June 2012
M.Sc. in Biotechnology, *Advisor: Roman Jerala*
Thesis: Synthetic biology approach towards improvement of carotenoid biosynthetic pathway using zinc fingers

FUNDING

The Gordon and Betty Moore Foundation Grant GBMF4958 Aug. 2015–July 2018
$401,010 | Awarded | Co-authored with another Ph.D. student

Open Philanthropy Project Challenge: Bioinspiration and Unusual Biology Oct. 2018
$113,000 | Top 10% among 375 applicants | Unfunded | Lead author

PUBLICATIONS

Turnšek J, Brunson JK, Deerinck TJ, Oborník M, Horák A, Bielinski VA, Allen AE. 2019. Phytotransferrin endocytosis mediates a direct cell surface-to-chloroplast iron trafficking axis in marine diatoms. *bioRxiv* (under review at *eLife*). doi: https://doi.org/10.1101/806539

Faktorová D, (…), **Turnšek J**, (…), Lukeš J. 2019. Genetic tool development in marine protists: Emerging model organisms for experimental cell biology. *bioRxiv* (*Nature Methods*, accepted). doi: https://doi.org/10.1101/718239

Turnšek J. 2018. Revisited *Thalassiosira pseudonana* (*Tp*) conjugation protocol enables fusion protein delivery to *Tp* frustule. *protocols.io*. doi: dx.doi.org/10.17504/protocols.io.nbzdap6

Conrado RJ, Wu GC, Boock JT, Xu H, Chen SY, Lebar T, **Turnšek J**, Tomšič N, Avbelj M, Gaber R, Koprivnjak T, Mori J, Glavnik V, Vovk I, Benčina M, Hodnik V, Anderluh G, Dueber JE, Jerala R, DeLisa MP. 2012. DNA-guided assembly of biosynthetic pathways promotes improved catalytic efficiency. *Nucleic Acids Res* **40**:1879–1889. doi: https://doi.org/10.1093/nar/gkr888

PRESENTATIONS

TALKS (*Invited)

Methods for studying phase separation in biology, Dresden, Germany Feb. 2019
ASCB|EMBO 2018 meeting, San Diego, CA Dec. 2018
Scripps Institution of Oceanography, La Jolla, CA Nov. 2017
Wyss Institute for Biologically Inspired Engineering, Boston, MA Mar. 2016
4th ISS: International Summer School, Piran, Slovenia* Aug. 2011
6th CeBiTec Symposium: Genome-based Microbiology, Bielefeld, Germany* July 2011
1st Bio:Fiction, Science, Art and Film Festival, Vienna, Austria* May 2011
iGEM 2010 Jamboree, Cambridge, MA Nov. 2010

POSTERS

Phase Transitions in Polymeric and Protein Systems, Dresden, Germany — Feb. 2019
ASCB|EMBO 2018 meeting, San Diego, CA — Dec. 2018
ASM Microbe 2018, Atlanta, GA — June 2018
A New Age of Discovery for Aquatic Microeukaryotes, Heidelberg, Germany — Jan. 2016
The Eleventh Annual Broad Institute Retreat, Boston, MA — Dec. 2015
Wyss Institute 7th Annual Retreat, Boston, MA — Nov. 2015
Molecular Life of Diatoms 2015, Seattle, WA — July 2015
2014 MRS Fall Meeting and Exhibit, Boston, MA — Dec. 2014

TEACHING AND MENTORING

Research Mentor, J. Craig Venter Institute, La Jolla, CA — Apr. 2017–Sept. 2018
Mentored a UCSD undergraduate—Pardis Gholami. Introduced her to molecular cloning techniques, genetic engineering of diatoms, and fluorescence microscopy.

Biochemistry Bootcamp Mentor, Wellesley College, Wellesley, MA — Jan. 2015
Taught and supervised two students—Emily Whitehead and Tatsiana Mello—for two weeks. They expressed kinesin in bacteria, purified it, assayed its activity, and presented their findings.

Mathematics, Physics, and English Tutor — 2006–2008
Conducted High School level Mathematics, Physics, and English in-home tutoring in Slovenia.

SERVICE AND OUTREACH

SERVICE

Invited Pre-Proposal Reviewer, Symbiosis in Aquatic Systems Initiative by the Gordon and Betty Moore Foundation, Palo Alto, CA — Aug.–Sept. 2019
Ambassador, protocols.io, Berkeley, CA — Nov. 2017–present

OUTREACH

Ocean Lights: bioluminescent bloom info booth, La Jolla, CA — May 2018
TriForOceans: saving coral reefs through triathlon, Gilford, NH | View — Aug. 2016

POPULAR SCIENCE WRITING

Turnšek J. Going with the Flow: New Evidence for Liquid Water on Mars. | View — Oct. 2015
Turnšek J. Diatoms: Nature's nanotechnologists. | View — May 2014
Turnšek J. 2011. Slovenski uspeh na tekmovanju iz biomolekularnega dizajna BIOMOD 2011. *Proteus*. **75**:347–352. (Kavčič Award) — Aug. 2013
Jerala R, Gaber R, Mori J, **Turnšek J**. 2012. Synthetic Biology: from Nanoscale to the Molecular Assembly Line. *Quark, Research and Development in Slovenia*. Summer 2012:20–23. — July 2012

CREATIVE WRITING

Turnšek J. Describing my Ph.D. in 15 seconds with video poetronica. | View — Apr. 2018
Turnšek J. 2018. Marine Microbes: Triathlete's Best Friends. *Triathlon Club of San Diego newsletter*. Jan./Feb. 2018:1 & 6. | View — Feb. 2018
Turnšek J. Tahonts. | View — Oct. 2017
Turnšek J. DNA Sciku. | View — Mar. 2014
Dudley Review contributor. — 2014–2016

PROFESSIONAL EXPERIENCE AND DEVELOPMENT

Research Fellow Sept. 2016–present
J. Craig Venter Institute, Microbial and Environmental Genomics, La Jolla, CA
Advisor: Andrew E. Allen

Graduate Research Fellow May 2014–Nov. 2019
Department of Systems Biology, Harvard Medical School, Boston, MA
Advisor: Pamela A. Silver

Visiting Graduate Student Sept. 2016–May 2019
Scripps Institution of Oceanography, UC San Diego, La Jolla, CA
Center for Research in Biological Systems, UC San Diego, La Jolla, CA
Advisor: Andrew E. Allen

Organism Engineer Oct. 2012–July 2013
Ginkgo Bioworks, Inc., Boston, MA
Advisor: Curt Fischer

Expert Associate June 2010–July 2012
National Institute of Chemistry, Ljubljana, Slovenia
Advisor: Roman Jerala

SHORT COURSES AND WORKSHOPS

EMBO Practical Course: Methods for studying phase separation in biology Feb. 2019
Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany

ASCB and Keck Graduate Institute Biotech Mini-Course Dec. 2018
Biocom, San Diego, CA

Microbial Sciences Initiative Microscopy Short Course Jan. 2016
Harvard University, Cambridge, MA

Material Research Society Science Writing Workshop Nov. 2015
Hynes Convention Center, Boston, MA

Discover Management Program July 2011
IEDC-Bled School of Management, Bled, Slovenia

SKILLS

WET LAB
Molecular cloning • Recombineering • Bacterial, yeast, diatom culture and genetic engineering • Fluorescence microscopy • Transmission electron microscopy (TEM) • RNA isolation • Pull-down assays • Proximity labeling• Yeast two-hybrid • Protein purification • SDS-PAGE • Western blot

DRY LAB
Geneious • Chimera • Basic knowledge of Unix, R, Python, and MATLAB

LANGUAGES
English • Slovenian • Bosnian-Croatian-Montenegrin-Serbian (Limited working proficiency) • German (Elementary proficiency) • Spanish (Elementary proficiency)

HONORS AND AWARDS

Kavčič Award for Popular Science Writing, Ljubljana, Slovenia	Apr. 2013
University of Ljubljana Prešeren Award for Diploma Thesis, Ljubljana, Slovenia	Nov. 2012
Krka Prize for Diploma Thesis, Novo mesto, Slovenia	Oct. 2012
University of Ljubljana Rector's "Best Innovation Award", Ljubljana, Slovenia	Dec. 2011
Gold Medal, BIOMOD 2011, Boston, MA	Nov. 2011
Grand Prize, iGEM 2010, Cambridge, MA	Nov. 2010
Zois Stipend, Ljubljana, Slovenia	2002–2011

HOBBIES AND INTERESTS

ENDURANCE SPORTS

USA Triathlon Olympic-Distance Age Group National Championships qualifier.	2018, 2019
Two-time Half-Ironman and marathon finisher.	2013–present

BASKETBALL

Two-time University of Ljubljana champion.	2008, 2009
Played semi-professionally for three Slovenian teams in college.	2007–2010

INTERESTS

Space exploration • Mathematics • Exercise physiology • Sports technology industry • Traveling • Coffee culture • Electronic music • Vinyl record collecting

ACADEMIC REFERENCES

Andrew E. Allen aallen@jcvi.org | 858-200-1826
Professor, Microbial and Environmental Genomics, J. Craig Venter Institute
Associate Professor, Scripps Institution of Oceanography, University of California San Diego

Christopher L. Dupont cdupont@jcvi.org | 858-200-1886
Associate Professor, Microbial and Environmental Genomics, J. Craig Venter Institute

Sinem Beyhan sbeyhan@jcvi.org | 858-750-4029
Assistant Professor, Infectious Disease, J. Craig Venter Institute