

Dr. Anela Tosevska

Experience

- 01.2021-present **Senior Scientist in Bioinformatics**, *Division of Rheumatology*, Medical University of Vienna, Vienna, Austria.
* Analysis of NGS data
- 08.2020-12.2020 **Scientist - part time**, *Institute for Digital Health and Patient Safety*, Ludwig Boltzmann Institute, Vienna, Austria.
* Bibliometric analyses
* Content creation for the DHPS Platform <https://digitalpatientsafety.com>
- 11.2016-12.2020 **Postdoctoral Researcher**, *Matteo Pellegrini's lab*, Department of Molecular, Cell, and Developmental Biology, University of California Los Angeles, USA.
* Bioinformatics and biostatistics analyses on 15+ projects
* Methyloomics and transcriptomics in disease and aging, cell-free DNA and RNA
- since 07.2019: NGS analyst and consultant, QCBio Cellaboratory at UCLA
- since 07.2019: Instructor, QCBio Cellaboratory at UCLA; Design and teaching quarterly workshop on DNA methylation analysis
- 02.2012-03.2016 **Scientific Assistant**, *Research Platform Active Ageing*, University of Vienna, Austria.
* Characterization of the role of bilirubin on aging and telomere length
- 04.2016-08.2016: Visiting Graduate Researcher in Matteo Pellegrini's lab at UCLA; Project: Comprehensive NGS analysis and integration of high throughput data in ageing and disease
- 03.2014-11.2015: Lecturer in Practical course in human nutrition I and II at the Department of Nutritional Sciences, University of Vienna
- 04.2013-05.2013: Visiting Researcher in Michael Fenech's lab at CSIRO, Australia; Project: Techniques for measurement of telomere length
- 04.2011-10.2011 **Scientific Personnel**, *Andrea Barta's lab*, Max F. Perutz Laboratories, Department of Medical Biochemistry, Medical University of Vienna, Austria.
*Characterisation of CYP59 protein in Arabidopsis Thaliana
- 09.2010-01.2011 **Intern**, Faculty of Pharmacy, Ss. Cyril and Methodius University, Skopje, Macedonia.
*Probiotics formulation and bioavailability

Education

- 03.2012-09.2016 **PhD studies in Natural Sciences, with distinction**, *Faculty of Life Sciences, University of Vienna, Austria*.
PhD thesis: Telomere length and bilirubin metabolism in ageing and disease.
Supervisors: Prof. Dr. Karl-Heinz Wagner, Prof. Dr. Verena Dirsch.
- 10.2005-05.2010 **Integrated Bachelor and Master (Diploma equivalent) studies in Pharmaceutical Sciences, with highest distinction**, *Faculty of Pharmacy, Ss. Cyril and Methodius University, Skopje, Macedonia*.

Skills

- Project-related skills Project management, Scientific writing, Clinical study management, Clinical and NGS data analysis, Machine Learning, Mentoring.
- Computer skills Unix, R, Bioconductor, Python, LaTeX, MS Office, SPSS.
- Laboratory skills DNA/RNA, qPCR, Sequencing Libraries preparation and QC, Cell culture screens, HPLC, Blood preparation, ELISA, Flow Cytometry, Microscopy.

Languages Macedonian, English, German, Serbo-Croatian, Spanish.

Volunteering and professional activities

- 06.2019 **Organizer**, *Inaugural Los Angeles Postdoctoral Research Symposium, University of California Los Angeles, USA.*
- 03.2019 **UCLA Grad Slam judge**, *Graduate division at the University of California Los Angeles, USA.*
- 01.2019-06.2019 **Vice Chair of Advocacy and Campus Relations**, *PDA-Postdoctoral association at the University of California Los Angeles, USA.*
- 12.2017 **Undergraduate Research Fellow Program Review Committee member**, *University of California Los Angeles, USA.*
- 07.2015 **Volunteer organizer**, *12th Symposium of the International Society of Exercise and Immunology (ISEI): Cells Meet Function in Exercise Immunology, Vienna, Austria.*
- 12.2013 **Volunteer organizer**, *TEDxVienna UNLIMITED, Vienna, Austria.*
- 12.2009-08.2010 **Main organizer**, *Academic summer course: Traditional food and drinks from the land of the sun, Board of European students of technology, Skopje, Macedonia.*

Scholarships and Awards

- **Collaboratory Fellowship Award** from the Institute for Quantitative and Computational Biosciences, University of California Los Angeles, 2019
- **Marshall Plan Fellowship** for academic exchange between Austria and the USA, 2016
- **Bronze Best Presentation Award**, seminar Cell Signalling 2013 contest.
- **Max F. Perutz Laboratories PhD Studentship**, 2011.
- **Foundation "Trajce Mukaetov" Award** for the best student of the generation in Pharmacy, 2010.
- **DAAD Group Study Trip Scholarship** (Clinical Pharmacy), 10/2010.
- **Foundation "Trajce Mukaetov" Scholarship** for Excellent Students in Pharmacy 2007-2010.

Peer review of publications

- Clinical and Translational Medicine (CTRM); Article doi: 10.1186/s40169-020-0257-2
- Plos One; Article doi: 10.1371/journal.pone.0184668 [* a reviewer thank you article has been published in 2018, acknowledging my contribution doi.org/10.1371/journal.pone.0194158]
- Journal of Translational Medicine; Article doi: 10.1186/s12967-017-1208-6.

Selected Talks and Posters

- Bruins-In-Genomics (B.I.G.) Summer Undergraduate Research Program Lunch talk series, Los Angeles, USA, Jul 5, 2019
Talk: Circulating cell-free nucleic acid sequencing for disease diagnostics and monitoring
- EACR-ESMO Joint Conference on Liquid Biopsies, Bergamo, Italy, May 15-17, 2019
Poster: Using circulating plasma cell free RNA as a diagnostic biomarker for anti-cancer treatment effectiveness
- MCDB research conference, Lake Arrowhead, CA, USA, Nov 30 - Dec 2, 2018
Talk: Distinct patterns of DNA methylation and gene expression in hyperbilirubinemia
- International Conference on Systems Biology of Human Disease (SBHD), Los Angeles, CA, USA, Jun 4 - Jun 6, 2018
Poster: Analysis of cell-free DNA for biomarkers of Preeclampsia and Gestational Diabetes
- 33rd TBI Winterseminar on Computational Biology, Computational Mathematics, Cheminformatics, Theoretical Biology, Bioinformatics, Biological Networks, Lake Bled, Slovenia, Feb 11 - Feb 18, 2018
Talk: Age-associated DNA methylation drift
- MCDB research conference, Lake Arrowhead, CA, USA, Dec 1 - Dec 3, 2017

- Talk: Delayed age-related DNA methylation drift in hyperbilirubinemia
- ASHG Annual meeting, Orlando, FL, USA, Oct 17 - Oct 21, 2017
Poster: Exploratory transcriptome and methylome analysis in Gilbert's syndrome
- Don Ostrow Trieste Yellow Retreat, Trieste, Italy, Sep 6 - Sep 7, 2017
Talk: Bilirubin decreases macrophage cholesterol efflux and ABCA1 protein expression
- OEGE Annual meeting, Vienna, Austria, Nov 24 - Nov 25, 2016
Poster: Effects of exercise and nutrition on gene expression in the skeletal muscle of older women
- 21st APHAR Symposium, Graz, Austria, Sep 16 - Sep 18, 2015
Poster: Effect of plasma from high- and low- serum unconjugated bilirubin (UCB) individuals on cholesterol efflux
- Don Ostrow Trieste Yellow Retreat, Trieste, Italy, Sep 2 - Sep 3, 2015
Talk: Telomere attrition in Gilbert's syndrome: a link to longevity and cardiovascular health
- CSHL Conference on Telomeres and Telomerase, Cold Spring Harbor, NY, USA, Apr 28 - May 2, 2015
Poster: Telomere length and bilirubin in gender dimorphism: an unexpected collaboration
- 30th Ernst Klenk Symposium in Molecular Medicine, DNA Damage Response and Repair Mechanisms in Aging and Disease, Cologne, Germany, Sept. 21 - 23, 2014
Poster: Oxidative DNA damage and repair capacity in a primary cell model of Diabetes Mellitus
- NIH, NIA, Laboratory of molecular gerontology, Baltimore, MA, USA, Aug 5, 2014
Talk: Oxidative stress and telomere stability in aging and disease.
- EMBO Conference on Telomeres, Telomerase and Disease, Brussels, Belgium, Apr 30 - May 4, 2014
Poster: Effects of Bilirubin on telomere integrity and dynamics

█ Hackathons

- Citizen Science meets Societal Challenges Hackathon; Topic: Flaschenpost, connecting isolated individuals through technology; Vienna, Austria, September 15 - 16, 2020 - 2nd place.
- QCBio Python Hackathon; Topic: Automated submission of analyses to online servers; Institute for Quantitative and Computational Biosciences, UCLA, Los Angeles, CA, USA, December 08, 2017.
- NCBI BioFrontiers Hackathon; Topic: Creation of a Python Package That Provides Utilities to Summarize RNA-Seq Experiments; UC Boulder, Boulder, CO, USA, May 22 - 24, 2017.

█ Publications

Andy Wai Kan Yeung, Anela Tosevska, Elisabeth Klager, Fabian Eibensteiner, Christos Tsagkaris, Emil D Parvanov, Faisal A Nawaz, Sabine Völkl-Kernstock, Eva Schaden, Maria Kletecka-Pulker, et al. Medical and health-related misinformation on social media: Analysis of the scientific literature. *Journal of medical Internet research*, 2021.

Claudia A Hana, Lan V Tran, Christine Mölzer, Elisabeth Müllner, Marlies Hörmann-Wallner, Bernhard Franzke, Anela Tosevska, Patrick A Zöhrer, Daniel Doberer, Rodrig Marculescu, et al. Serum metabolomics analysis reveals increased lipid catabolism in mildly hyperbilirubinemic gilbert's syndrome individuals. *Metabolism*, 125:154913, 2021.

Patrick A Zöhrer, Claudia A Hana, Nazlisadat Seyed Khoei, Christine Mölzer, Marlies Hörmann-Wallner, Anela Tosevska, Daniel Doberer, Rodrig Marculescu, Andrew C Bulmer, Craig W Herbold, et al. Gilbert's syndrome and the gut microbiota—insights from the case-control bilihealth study. *Frontiers in Cellular and Infection Microbiology*, page 897, 2021.

Nicola A Gillies, Bernhard Franzke, Barbara Wessner, Barbara Schober-Halper, Marlene Hofmann, Stefan Oesen, Anela Tosevska, Eva-Maria Strasser, Nicole C Roy, Amber M Milan, et al. Nutritional supplementation alters associations between one-carbon metabolites and cardiometabolic risk profiles in older adults: a secondary analysis of the vienna active ageing study. *European Journal of Nutrition*, pages 1–14, 2021.

Maria Kletecka-Pulker, Himel Mondal, Dongdong Wang, R Gonzalo Parra, Abdulkadir Yusuf Maigoro, Soojin Lee, Tushar Garg, Eoghan J Mulholland, Hari Prasad Devkota, Bikramjit Konwar, et al. Impacts of biomedical hashtag-based twitter campaign:# dhpsp utilization

for promotion of open innovation in digital health, patient safety, and personalized medicine. *Current Research in Biotechnology*, 3:146–153, 2021.

Colin Farrell, Michael Thompson, Anela Tosevska, Adewale Oyetunde, and Matteo Pellegrini. Bisulfite bolt: A bisulfite sequencing analysis platform. *GigaScience*, 10(5):giab033, 2021.

Angelika Pointner, Christine Mölzer, Ulrich Magnet, Katja Zappe, Berit Hippe, Anela Tosevska, Elena Tomeva, Elisabeth Dum, Diana Gessner, Stephanie Lilja, et al. The green tea polyphenol egcg is differentially associated with telomeric regulation in normal human fibroblasts versus cancer cells. *Functional Foods in Health and Disease*, 11(3):73–91, 2021.

Andy Wai Kan Yeung, Anela Tosevska, Elisabeth Klager, Fabian Eibensteiner, Daniel Laxar, Jivko Stoyanov, Marija Glisic, Sebastian Zeiner, Stefan Tino Kulnik, Rik Crutzen, et al. Virtual and augmented reality applications in medicine: Analysis of the scientific literature. *Journal of medical internet research*, 23(2):e25499, 2021.

Colin Farrell, Michael Thompson, Anela Tosevska, Adewale Oyetunde, and Matteo Pellegrini. Bisulfite bolt: A bisulfite sequencing analysis platform. *bioRxiv*, 2020.

Rimao Wu, Feiyang Ma, Anela Tosevska, Colin Farrel, Matteo Pellegrini, and Arjun Deb. Cardiac fibroblast proliferation rates and collagen expression mature early in life and do not change with advancing age. *JCI Insights*.

Giorgia Del Vecchio, Qingjiao Li, Wenyan Li, Shanthie Thamotharan, Anela Tosevska, Marco Morselli, Kyunghyun Sung, Carla Janzen, Xianghong Zhou, Matteo Pellegrini, and Sherin U. Devaskar. Cell-free dna methylation and transcriptomic signature prediction of pregnancies with adverse outcomes. *Epigenetics*, 0(0):1–20, 2020.

Adam S Neal, Miguel Nunez, Tiffany Lai, Anela Tosevska, Marco Morselli, Malaika Amneus, Mae Zakhour, Neda A Moatamed, Matteo Pellegrini, and Sanaz Memarzadeh. Expression of stromal progesterone receptor and differential methylation patterns in the endometrium may correlate with response to progesterone therapy in endometrial complex atypical hyperplasia. *Reproductive Sciences*, pages 1–13, 2020.

Saroj K Basak, Alakesh Bera, Alexander J Yoon, Marco Morselli, Chan Jeong, Anela Tosevska, Tien S Dong, Michael Eklund, Eric Russ, Hassan Nasser, et al. A randomized, phase 1, placebo-controlled trial of apg-157 in oral cancer demonstrates systemic absorption and an inhibitory effect on cytokines and tumor-associated microbes. *Cancer*, 2020.

Bernhard Franzke, Barbara Schober-Halper, Marlene Hofmann, Stefan Oesen, Anela Tosevska, Armen Nersesyan, Siegfried Knasmüller, Eva-Maria Strasser, Marlies Wallner, Barbara Wessner, et al. Chromosomal stability in buccal cells was linked to age but not affected by exercise and nutrients—vienna active ageing study (vaas), a randomized controlled trial. *Redox Biology*, page 101362, 2019.

Bernhard Franzke, Barbara Schober-Halper, Marlene Hofmann, Stefan Oesen, Anela Tosevska, Eva-Maria Strasser, Rodrig Marculescu, Barbara Wessner, and Karl-Heinz Wagner. Fat soluble vitamins in institutionalized elderly and the effect of exercise, nutrition and cognitive training on their status—the vienna active aging study (vaas): A randomized controlled trial. *Nutrients*, 11(6):1333, 2019.

Bernhard Franzke, Barbara Schober-Halper, Marlene Hofmann, Stefan Oesen, Anela Tosevska, Trine Henriksen, Henrik E Poulsen, Eva-Maria Strasser, Barbara Wessner, and Karl-Heinz Wagner. Age and the effect of exercise, nutrition and cognitive training on oxidative stress—the vienna active aging study (vaas), a randomized controlled trial. *Free Radical Biology and Medicine*, 121:69–77, 2018.

Dongdong Wang, Anela Tosevska, Elke H Heiß, Angela Ladurner, Christine Mölzer, Marlies Wallner, Andrew Bulmer, Karl-Heinz Wagner, Verena M Dirsch, and Atanas G Atanasov. Bilirubin decreases macrophage cholesterol efflux and atp-binding cassette transporter a1 protein expression. *Journal of the American Heart Association*, 6(5):e005520, 2017.

Christine Mölzer, Marlies Wallner, Carina Kern, Anela Tosevska, René Zadnikar, Daniel Doberer, Rodrig Marculescu, and Karl-Heinz Wagner. Characteristics of the heme catabolic pathway in mild unconjugated hyperbilirubinemia and their associations with inflammation and disease prevention. *Scientific Reports*, 7(1):755, 2017.

Anela Tosevska, Bernhard Franzke, Marlene Hofmann, Immina Vierheilig, Barbara Schober-Halper, Stefan Oesen, Oliver Neubauer, Barbara Wessner, and Karl-Heinz Wagner. Circulating cell-free dna, telomere length and bilirubin in the vienna active ageing study: exploratory analysis of a randomized, controlled trial. *Scientific Reports*, 6, 2016.

Christine Mölzer, Marlies Wallner, Carina Kern, Anela Tosevska, Ursula Schwarz, Rene Zadnikar, Daniel Doberer, Rodrig Marculescu, and Karl-Heinz Wagner. Features of an altered ampk metabolic pathway in gilbert's syndrome, and its role in metabolic health. *Scientific Reports*, 6, 2016.

Annemarie Grindel, Bianca Guggenberger, Lukas Eichberger, Christina Pöppelmeyer, Michaela Gschaider, Anela Tosevska, George Mare, David Briskey, Helmut Brath, and Karl-Heinz Wagner. Oxidative stress, dna damage and dna repair in female patients with diabetes mellitus type 2. *PloS one*, 11(9):e0162082, 2016.

Anela Tosevska, Christine Moelzer, Marlies Wallner, Milan Janosec, Ursula Schwarz, Carina Kern, Rodrig Marculescu, Daniel Doberer, Wolfram Weckwerth, and Karl-Heinz Wagner. Longer telomeres in chronic, moderate, unconjugated hyperbilirubinaemia: insights from a human study on gilbert's syndrome. *Scientific Reports*, 6:22300, 2016.

Bernhard Franzke, Barbara Halper, Marlene Hofmann, Stefan Oesen, Béatrice Pierson, Ariane Cremer, Evelyn Bacher, Birgit Fuchs, Andreas Baierl, Anela Tosevska, et al. The effect of six months of elastic band resistance training, nutritional supplementation or cognitive training on chromosomal damage in institutionalized elderly. *Experimental gerontology*, 65:16–22, 2015.

Bernhard Franzke, Barbara Halper, Marlene Hofmann, Stefan Oesen, Waltraud Jandrasits, Andreas Baierl, Anela Tosevska, Eva-Maria Strasser, Barbara Wessner, Karl-Heinz Wagner, et al. The impact of six months strength training, nutritional supplementation or cognitive training on dna damage in institutionalised elderly. *Mutagenesis*, 30(1):147–153, 2015.

Bernhard Franzke, Barbara Halper, Marlene Hofmann, Stefan Oesen, Heidemarie Peherstorfer, Klemens Krejci, Birgit Koller, Karin Geider, Andreas Baierl, Anela Tosevska, et al. The influence of age and aerobic fitness on chromosomal damage in austrian institutionalised elderly. *Mutagenesis*, 29(6):441–445, 2014.

Patents

- o "Methods concerning ongoing treatment for cancer," U.S. Provisional Pat. Ser. No. 62/848,494, filed on 5/15/2019.