Dmitry Mozzherin

Curriculum Vitae

Illinois Natural History Survery
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http://globalnames.org

Education and Postdoctoral Training

1994–2001 **Postdoctoral Associate**, *State University of New York*, Stony Brook, NY, Department of Pharmacology.

1989–1993 **Graduate Student**, *The Engelhardt Institute of Molecular Biology*, Moscow, Russia, Lab of Chemical and Biochemical Analysis of Biopolymers and Cells.
Ph.D. in Biochemistry

1979–1985 **Undergraduate Student**, *Ural State University — Biology Major*, Yekaterinburg, Russia, Department of Physiology and Biochemistry of Plants.
Speciality: Biologist, Teacher of Biology and Chemistry

Professional and Academic Appointments

2015–present **Bioinformatician**, *University of Illinois*, Champaign, IL, Species File Group, Global Names Architecture.

2009–2015 **Research Associate**, *Marine Biological Laboratory*, Woods Hole, MA, Encyclopedia of Life, Global Names Architecture.

2008–2015 **Scientific Informatics Project Leader**, *Marine Biological Laboratory*, Woods Hole, MA, Encyclopedia of Life, Global Names Architecture.

2001–2008 **Research Instructor, Senior Programmer Analyst**, *State University of New York*, Stony Brook, NY, Department of Pharmacology, Department of Medical Informatics.

1993–1994 **Scientific Researcher**, *The Engelhardt Institute of Molecular Biology, Russian Academy of Sciences*, Moscow, Russia, Lab of Chemical and Biochemical Analysis of Biopolymers and Cells.

1985–1989 **Senior Engineer**, *Omutninsk Chemical Plant*, Kirov region, Russia.
Head of the group responsible for purification of *Avian Myeloblastosis Virus Reverse Transcriptase*

Experience and Skills

Science	Molecular Biologist, Biochemist, Biodiversity Informatician, Computer Sciencist
Programming	Go, Ruby, Scala, Elm, Python, R, JavaScript, C, Assembly, Java, Perl, PHP, Cold Fusion, etc.
Management	NSF Primary Investigaor, Agile/Scrum Master
DevOps	Linux System Administration, Ansible, Docker, Kubernetes, Chef
Markup	HTML, CSS, SASS, HAML, Markdown, LaTeX
Design/Art	Blender, Photoshop, Gimp, Photography, Sculpture

Honors and Awards

2014	**PI on NSF Award DBI-1356347**	*University of Illinois*
2002	**PI on NLM Award 1G07LM007762-01**	*State University of New York at Stony Brook*
1996	**Catacosinos Cancer Research Award**	*State University of New York at Stony Brook*
1993	**Outstanding young scientist**	*The Engelhardt Institute of Molecular Biology*

Extra-Curricular Awards

2006	**Winner of Best of Wild Life Photography**	*Smithsonian National Museum of Natural History (as part of Long Island Wild Life Photography submission)*

Interests

- Biodiversity Informatics
- Open Source Programming
- Sculpture
- Wild Life Photography
- Molecular Biology
- Machine Learning
- 3D Modelling
- Biking

Teaching

2018-2019	**Mentoring students for Computer Science 492 Course**	*University of Illinois*
2015-2019	**Mentoring students working on Phylotastic project**	*Phylotastic project*
2010, 2011, 2015	**Computer Science Students Mentoring**	*Google Summer of Code*
2011, 2012	**Computer Science Students Mentoring**	*UCOSP Capstone Project Canada*
2013,2014	**Scientific Illustration Students Mentoring**	*Rode Island School of Design, Marine Biological Laboratory*

Selected Open Source Software (principle of major contributor)

2020–present	**BHL Names**	*Linking taxonomic publications to BHL pages*
2020–present	**Global Names Verifier (Go)**	*Scientific name reconciliation/resolution*
2018–present	**Global Names Parser (Go)**	*Scientific name parsing*
2017–present	**bhlindex**	*Indexer of scientific names in Biodiversity Heritage Library*
2017–present	**gnfinder**	*General purpose scientific names detection*
2015–present	**Global Names Parser (Scala)**	*Scientific name parsing*
2015–present	**Global Names Resolver**	*Taxonomic resolution of scientific names*
2015–present	**Global Names Crossmap**	*Bulk resolution of scientific names from CSV file*
2012–present	**Global Names Recognition and Discovery**	*Scientific names finding service*
2012–present	**NameSpotter**	*A library for finding scientific names*
2012–present	**DamerauLevenshtein**	*A library to determine edit distance between strings*
2012–present	**BHL Indexer**	*A tool for finding names in Biodiversity Heritage Library*
2011–present	**DwCA Hunter**	*A convertor of biodiversity resources to DarwinCore Archive*
2010–present	**DwC Archive**	*A DarwinCore Archive reader/writer*
2009–present	**Taxamatch for Ruby**	*A fuzzy-matching library for scientific names*
2009–2013	**Global Names Interative Editor**	*Classification Editor*

2008–present	**Global Names Index**	*Global index of scientific names*
2008–2015	**Biodiversity**	*Scientific names parser*
2008–2015	**Encyclopedia of Life**	*An online ncyclopdia about known species*
2000–2004	**BioMail**	*Biomedical publications alert service*

Peer-reviewed Publications

1. Mozzherin, Dmitry, Myltsev, Alexander, Patterson, David: "gnparser": a powerful parser for scientific names based on Parsing Expression Grammar. BMC Bioinformatics (2017). doi:10.1186/s12859-017-1663-3

2. Patterson, D., Mozzherin, D., Shorthouse, D., Thessen, A.: Challenges with using names to link digital biodiversity information. Biodiversity Data Journal **4**, 8080 (2016). doi:10.3897/BDJ.4.e8080

3. Kripke, E., Mozzherin, D., Senft, S., Hanlon, R.: Visualizing Biological Complexity in Cephalopod Skin: A Synergy of Art and Science Technologies. Leonardo **48**(5), 486–487 (2015). doi:10.1162/LEON_a_01124

4. Fischer, A.H.L., Mozzherin, D., Eren, a.M., Lans, K.D., Wilson, N., Cosentino, C., Smith, J.: SeaBase: a multispecies transcriptomic resource and platform for gene network inference. Integrative and comparative biology **54**(2), 250–63 (2014). doi:10.1093/icb/icu065

5. Boyle, B., Hopkins, N., Lu, Z., Raygoza Garay, J.A., Mozzherin, D., Rees, T., Matasci, N., Narro, M.L., Piel, W.H., McKay, S.J., Lowry, S., Freeland, C., Peet, R.K., Enquist, B.J.: The taxonomic name resolution service: an online tool for automated standardization of plant names. BMC bioinformatics **14**(1), 16 (2013). doi:10.1186/1471-2105-14-16

6. Morris, R.a., Barve, V., Carausu, M., Chavan, V., Cuadra, J., Freeland, C., Hagedorn, G., Leary, P., Mozzherin, D., Olson, A., Riccardi, G., Teage, I., Whitbread, G.: Discovery and publishing of primary biodiversity data associated with multimedia resources: the audubon core strategies and approaches. Biodiversity Informatics (1), 185–197 (2013). doi:10.17161/bi.v8i2.4117

7. Thessen, A.E., Cui, H., Mozzherin, D.: Applications of natural language processing in biodiversity science. Advances in bioinformatics **2012**, 391574 (2012). doi:10.1155/2012/391574

8. Mozzherin, D.J., McConnell, M., Miller, H., Fisher, P.a.: Site-specific mutagenesis of Drosophila proliferating cell nuclear antigen enhances its effects on calf thymus DNA polymerase delta. BMC biochemistry **5**, 13 (2004). doi:10.1186/1471-2091-5-13

9. Fisher, P.A., Moutsiakis, D.L., McConnell, M., Mozzherin, D.: A Single Amino Acid Change (E85K) in Human PCNA That Leads, Relative to Wild Type, to Enhanced DNA Synthesis by DNA Polymerase δ past Nucleotide Base Lesions (TLS) as Well as on Unmodified Templates. Biochemistry **43**(50), 15915–15921 (2004). doi:10.1021/bi048558x

10. Mozzherin, D.J., Tan, C.K., Downey, K.M., Fisher, P.A.: Architecture of the active DNA polymerase δ·proliferating cell nuclear antigen·template-primer complex. Journal of Biological Chemistry **274**(28), 19862–7 (1999). doi:10.1074/jbc.274.28.19862

11. Mozzherin, D.J., McConnell, M., Fisher, P.A.: Drosophila replication and repair proteins: proliferating cell nuclear antigen (PCNA). Methods **18**(3), 401–406 (1999). doi:10.1006/meth.1999.0798

12. Zaika, A., Mozzherin, D.J., Tan, C.K., Downey, K.M., Fisher, P.A.: A two-dimensional support for selective binding of polyhistidine-tagged proteins: identification of a proliferating cell nuclear antigen point mutant with altered function in vitro. Anal Biochem **268**(2), 193–200 (1999)

13. Mozzherin, D.J., Shibutani, S., Tan, C.K., Downey, K.M., Fisher, P.a.: Proliferating cell nuclear antigen promotes DNA synthesis past template lesions by mammalian DNA polymerase delta. Proceedings of the National Academy of Sciences of the United States of America **94**(12), 6126–31 (1997)

14. Mozzherin, D.J., McConnell, M., Jasko, M.V., Krayevsky, A.A., Tan, C.K., Downey, K.M., Fisher, P.A.: Proliferating cell nuclear antigen promotes misincorporation catalyzed by calf thymus DNA polymerase delta. J Biol Chem **271**(49), 31711–31717 (1996)

15. Mozzherin, D.J., Fisher, P.A.: Human DNA polymerase epsilon: enzymologic mechanism and gap-filling synthesis. Biochemistry **35**(11), 3572–3577 (1996)

16. McConnell, M., Miller, H., Mozzherin, D.J., Quamina, a., Tan, C.K., Downey, K.M., Fisher, P.a.: The mammalian DNA polymerase delta–proliferating cell nuclear antigen–template-primer complex: molecular characterization by direct binding. Biochemistry **35**(25), 8268–74 (1996). doi:10.1021/bi9530649

17. Jasko, M.V., Fedorov, I.I., Atrazhev, A.M., Mozzherin, D.Y., Novicov, N.A., Bochkarev, A.V., Gurskaya, G.V., Krayevsky, A.A.: Synthesis, Molecular and Crystal Structure of 3'-N-Alkylamino-3'-deoxythymidines and Some Biochemical Properties of Their Phosphorous Esters. Nucleosides and Nucleotides **14**(1-2), 23–37 (1995). doi:10.1080/15257779508014650

18. Jasko, M.V., Semizarov, D.G., Victorova, L.S., Mozzherin, D., Krayevsky, A.A., Kukhanova, M.K.: New modified substrates for discriminating between human DNA polymerases alpha and epsilon. FEBS Lett **357**(1), 23–26 (1995). doi:001457939401319V [pii]

19. Kukhanova, M., Liu, S.H., Mozzherin, D., Lin, T.S., Chu, C.K., Cheng, Y.C.: L- and D-enantiomers of 2',3'-dideoxycytidine 5'-triphosphate analogs as substrates for human DNA polymerases. Implications for the mechanism of toxicity. J Biol Chem **270**(39), 23055–9 (1995)

20. Mozzherin, D.J., Atrazhev, A.M., Kukhanova, M.K.: [A method of isolation and properties of DNA-dependent DNA-polymerase epsilon from human placenta]. Molekuliarnaia Biologiia **26**(5), 999–1010 (1992)

21. Viktorova, L.S., Rozovskaia, T.A., Mozzherin, D.J., Krayevsky, A.A.: [Acyclic analogs of 2',3'-dideoxy-2',3'-didehydronucleoside-5'-triphosphates–terminators of DNA synthesis, catalyzed by a broad set of DNA polymerases]. Molekuliarnaia Biologiia **27**(1), 143–152 (1992)

22. Victorova, L.S., Dyatkina, N.B., Mozzherin, D.J., Atrazhev, A.M., Kraevsky, A.A., Kukhanova, M.K.: Formation of phosphonoester bonds catalyzed by DNA polymerases. Nucleic Acids Research **20**(4), 783–789 (1992). doi:10.1093/nar/20.4.783

23. Jasko, M.V., Atrazhev, A.M., Mozzherin, D.J., Novikov, N.A., Fedorov, I.I., Kraevsky, A.A.: [Synthesis and various biochemical properties of alkylated derivatives of 2',3'-dideoxy-3'-aminothymidine]. Bioorganicheskaya Khimia **18**(2), 299–301 (1992)