

**Timea Gerczei Fernandez**

Visiting Assistant Professor

Chemistry

College of Sciences and Engineering Technology

**Degrees Earned**

PhD in Chemistry    Lorand Eotvos University, Budapest Hungary, 2000.

MS in Chemistry    Lorand Eotvos University, Budapest Hungary, 1996.

**Professional Licensure and Certifications****Peer-Review Publications and Artistic Performances/Exhibitions****Articles**

1. **Gerczei T.** Site-directed mutagenesis study of an antibiotic-sensing noncoding RNA integrated into a one-semester project-based biochemistry lab course. *J. Chem. Educ.*, 2017, 94 (8), pp 1083–1089 (**Impact factor 1.1**).
2. **Gerczei T.** (2016) The impact of an in-class biochemistry mini-conference on students' perception of science. *J. Chem. Ed.* **93** (9), pp 1521–1527. (**Impact factor 1.1**)
3. **Gerczei T.**, Shah BN, Manzo AJ, Walter NG, Correll CC. (2009) RNA chaperones stimulate formation and yield of the U3 snoRNA-Pre-rRNA duplexes needed for eukaryotic ribosome biogenesis, *J Mol Biol.*, **390**(5): 991-1006. (**Impact Factor 4.3; Times Cited: 17**)
4. **Gerczei, T. and Correll, C.C.** (2004) Imp3p and Imp4p mediate an essential U3-pre-rRNA hybridization, presumably to recruit the small subunit processome to the pre-rRNA. *Proc Natl Acad Sci U S A* 101, 15301-15306. (**Impact Factor: 9.67, Times Cited: 27**)
5. **Correll, C.C. Yang, X. Gerczei, T. Beneken, J. Plantinga, M. J.** (2004) RNA recognition and base flipping by the toxin sarcin. *J Synchrotron Radiat* 11, 93-96. (**Impact Factor: 2.19, Times Cited: 8**)
6. **Yang, X. Gerczei, T. Glover, L. T. Correll, C. C.** (2001) Crystal structures of restrictocin-inhibitor complexes with implications for RNA recognition and base flipping. *Nat Struct Biol* 8, 968-973. (**Impact Factor: 13.3, Times Cited: 70**)
7. **Gerczei T, Fazekas A. and Keseru G** (2000) Theoretical Study on the Nitric Oxide Binding to Nitrophorin 1, an NO-carrier. *THEOCHEM* 503, 51-58. (**Impact Factor: 1.54, Times Cited: 0, Gerczei is misspelled as Gerzei in article**)

8. **Gerczei, T. Keseru, G. M. Naray-Szabo, G. (2000)** Construction of a 3D model of oligopeptidase B, a potential processing enzyme in prokaryotes. J Mol Graph Model 18, 7-17, 57-18. **(Impact Factor: 4.3, Times Cited: 22)**
  
9. **Gerczei, T. et al. (1999)** Conservative electrostatic potential patterns at enzyme active sites: The anion-cation-anion triad. Journal of Chemical Information and Computer Sciences 39, 310-315. **(Impact Factor: 2.81, Times Cited: 8)**
  
10. **Gerczei, T. Bocskei, Z. Keseru, G. M. Samu, E. Huszthy, P. (1999)** Enantiomeric recognition of alpha-(1-naphthyl)ethylammonium perchlorate by enantiomerically pure dimethylphenazino-18-crown-6 ligand in solid and gas phases. Tetrahedron-Asymmetry 10, 1995-2005. **(Impact Factor: 2.16, Times Cited: 14)**
  
11. **Gerczei, T. Bocskei, Z. Szabo, E. Asboth, B. Naray-Szabo, G. (1999)** Structure determination and refinement of the Al<sup>3+</sup> complex of the D254,256E mutant of *Arthrobacter* D-xylose isomerase at 2.40 Å resolution. Further evidence for inhibitor-induced metal ion movement. Int J Biol Macromol 25, 329-336. **(Impact Factor: 3.1, Times Cited: 9)**
  
12. **Naray-Szabo, G. and Gerczei T. (1996)** The (-+ -) charge distribution: A common pattern in the transition state of some enzymes. Croatica Chemica Acta 69, 955-965. **(Impact Factor: 0.72, Times Cited: 3)**
  
13. **Bocskei, Z. Gerczei, T. Bodor, A. Schwartz, R. and Naray-Szabo, G. (1996)** Three testosterone derivatives. Acta Crystallographica Section C-Crystal Structure Communications 52, 2899-2903. **(Impact Factor: 0.32, Times Cited: 3)**

#### **Books**

**Gerczei T and Pattison S.** (2014) Biochemistry laboratory manual; *in print with DeGruyer Open Access and available online at <http://www.degruyter.com/view/product/449852>.*

#### **Chapters**

#### **Proceedings**

#### **Artistic Performances**

#### **Artistic Exhibitions**

#### **Research Monographs and Technical Reports**

## Funded External Grants

1. **NSF Grant** (2016) Rustbelt RNA Meeting 2017 to be held at the Sheraton Indianapolis City Centre Hotel in Indianapolis, IN on October 13-14, 2017 "co-PI with Dr. Sarath Chandra Janga (IUPUI). \$26,529.
2. **Indiana Academy of Sciences** (2011) "Bacterial toxin sensors are effective new targets in the fight against antibiotic resistance" Awarded: \$3,000.
3. **Discovery grant** (2010) "The Future of Biochemistry Education at Ball State University" Awarded: \$17,500

## Peer-Review Presentations/Posters

1. **The Rustbelt RNA Meeting**, 2015, Cedar Point, OH. (talk) "A mechanistic and structural study of a yet uncharacterized RNA sensor: the ykkCD riboswitch" Beau Champ, Ambar Rana, Nicholas Frecker, Delores James, **Timea Gerczei**.
2. **The Rustbelt RNA Meeting**, 2015, Cedar Point, OH., "Using the ykkCD riboswitch as a caging compound for targeted drug delivery. Evan Jones, Von Grogg, and **Timea Gerczei**.
3. **The Rustbelt RNA Meeting**, October 17-18, 2014 Pittsburgh, PA. "Using SHAPE chemistry to determine the structure of the ykkCD riboswitch." Beau Champ and **Timea Gerczei**.
4. **The Rustbelt RNA Meeting**, October 17-18, 2014 Pittsburgh, PA. "Using the ykkCD riboswitch as caging compound for targeted drug deliveries". Evan Jones and **Timea Gerczei**.
5. **The Rustbelt RNA Meeting**, October 17-18, 2014 Pittsburgh, PA. "Mapping of Structural Changes to the ykkCD Antibiotic Sensor RNA Caused by Tetracycline Binding". Caroline Conley and **Timea Gerczei**.
6. **The 13<sup>th</sup> International Conference on RNA Nanotechnology and Therapeutics**, 2013 April Lexington, KY "Mapping the Structural Change Caused By Tetracycline Binding to the ykkCD Antibiotic Sensor RNA " Laura Howell and **Timea Gerczei**.
7. **The 128<sup>th</sup> Annual Meeting of the Indiana Academy of Sciences**, (talk) 2013 March, Indianapolis IN. "Gene expression regulation by the ykkCD putative riboswitch in *B. Subtilis*"; Nicholas Frecker and **Timea Gerczei**.
8. **The Rustbelt RNA Meeting 2012**, October, Dayton OH  
Regulation of the putative ykkCd riboswitch by tetracycline and related antibiotics in *B. Subtilis*; Nicholas Frecker and Timea Gerczei
9. **Biochemistry Teaching Workshop**, Purdue University, 2012 fall
10. **The Rustbelt RNA Meeting 2011**, October, Dayton OH  
How expression of antibiotic resistance genes is triggered in bacteria: a structural study of the ykkCD tetracycline-responsive riboswitch RNA; Alysa Frank and Timea Gerczei
11. **ACS, 2011** Anaheim CA; Understanding the structural underpinnings of tetracycline recognition by the antibiotic sensor riboswitch ykkCD; *Delores James and Timea Gerczei*
12. **ACS, 2011** Anaheim CA; Characterization of ykkCD – a riboswitch that regulates a riboswitch that regulates expression of a multidrug-resistant efflux pump; *Alysa Frank and Timea Gerczei*
13. **ACS, 2011** Anaheim CA; Mutagenesis studies to uncover a hot-spot for antibiotic recognition by the antibiotic sensor riboswitch ykkCD; *Laura Edward and Timea Gerczei*
14. **ACS, 2009** Salt Lake City, Utah; Mapping the structure of the ON and OFF state of the ykkCD riboswitch; *Krystal Street Roark and Timea Gerczei*

15. **ACS, 2009** Salt Lake City, Utah; Exploring the binding specificity of the ykkCD riboswitch aptamer domain using fluorescent spectroscopy
16. **13<sup>th</sup> Annual Meeting of the RNA Society, 2008**, *Berlin, Germany* - Initial characterization of ykkCD - a riboswitch that regulates gene expression of membrane transporters; *Krystal Street Roark, Kyle Stephens, Whitney Howe, Amanda Robinson, Svetlana Pekovic and Timea Gerczei*
17. **13<sup>th</sup> Annual Meeting of the RNA Society, 2008**, *Berlin, Germany* Mechanistic insights into how RNA chaperone activity facilitates eukaryotic ribosome biogenesis; *Timea Gerczei, Anthony Manzo, Nils Walter, Carl Correll*.
18. **The Rustbelt RNA Meeting, 2008** October, *Mt Sterling Ohio*; Mapping the structure of the ON and OFF state of the ykkCD riboswitch; *Krystal Street Roark and Timea Gerczei*
19. **The Rustbelt RNA Meeting, 2008** October, *Mt Sterling Ohio*; Exploring the binding specificity of the ykkCD riboswitch aptamer domain using fluorescent spectroscopy.; *Svetlana Pekovic, Whitney Howe and Timea Gerczei*
20. **The Rustbelt RNA Meeting, 2008** October, *Sterling Ohio*; Investigation of the expression of the ykkCD multidrug-resistant efflux pump in response to antibiotics; *Ambar Rana, John McKillip and Timea Gerczei*
21. **The Rustbelt RNA Meeting, 2008** October, *Sterling Ohio*; The mechanism of gene expression regulation by the ykkCD riboswitch; *Whitney Howe and Timea Gerczei*
22. **The Indiana section of the ACS, 2008** October, *Ball State University*; Mapping the structure of the ON and OFF state of the ykkCD riboswitch; *Krystal Street Roark and Timea Gerczei*
23. **The Indiana section of the ACS, 2008** October, *Ball State University*; Exploring the binding specificity of the ykkCD riboswitch aptamer domain using fluorescent spectroscopy.; *Svetlana Pekovic, Whitney Howe and Timea Gerczei*
24. **The Indiana section of the ACS, 2008** October, *Ball State University*; Investigation of the expression of the ykkCD multidrug-resistant efflux pump in response to antibiotics; *Ambar Rana, John McKillip and Timea Gerczei*
25. **The Indiana section of the ACS, 2008** October, *Ball State University*; The mechanism of gene expression regulation by the ykkCD riboswitch; *Whitney Howe and Timea Gerczei*

#### **Work or Professional Experiences**

#### **Honors and Awards**

#### **Other Competencies**