

PETIA Z. GATZEVA-TOPALOVA • CURRICULUM VITAE

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- PhD in Biochemistry with over 10 years of research experience across diverse life science fields
 - Record of success in preparing scientific and CME documents, including peer-reviewed manuscripts, grant proposals, needs assessments, Power Point slide sets, posters, training materials, exam questionnaires and other
 - Experienced in the analysis, extraction and summarizing of relevant information from scientific publications in diverse disciplines; proficient at conveying information in a concise form to audiences with varying degree of scientific skills
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EDUCATION:

PhD in Biochemistry with certification in Biophysics (2001-2005)
University of Colorado, Boulder, Colorado

Doctoral studies in Biochemistry (1999-2000)
(transfer to University of Colorado at Boulder)
Clark University, Worcester, MA

MSc with Honors, Organic Chemistry (1992-1997)
University of Sofia, Sofia, Bulgaria

EXPERIENCE:

Freelance Medical Writer (2011 - present)

- Prepared news articles, Power Point slide sets on various biomedical topics, and CME content, including needs assessments, symposium summaries, and others
- Experienced in preparing posters, grant applications and publications for peer-reviewed journals

Senior Research Associate, Department of Chemistry and Biochemistry University of Colorado at Boulder, CO (2009 – 2013)

- Research: developed a project aimed at the structural and biochemical investigation of enzymes involved in the *Pseudomonas* Quinolone Signal (PQS) biosynthesis and obtained NIH funding for this project as a Principal Investigator
- Funding: National Institute of Allergy and Infectious Disease (NIH)
- Writing experience – successful grant applications, research manuscripts, oral presentations, posters, editing of grant applications for other scientists
- Mentoring: students, post-doctoral fellows and research assistants

Research Associate, Department of Chemistry and Biochemistry
University of Colorado at Boulder, CO (2005 – 2009)

- Research: Structural characterization of proteins involved in the outer membrane synthesis of Gram-negative bacteria, *Salmonella* Type III secretion system effector proteins, Shoc2-PP1C, a target for the inhibition of the MAPK pathway in cancer (in collaboration with Dr. Rodrigues-Viciana)
- Funding: National Institute of Allergy and Infectious Disease (NIH)
- Writing experience: research manuscripts, oral presentations, posters
- Mentoring: research assistants, undergraduate and graduate students

Graduate Research Assistant, Department of Chemistry and Biochemistry
University of Colorado at Boulder, CO (2001-2005)

- Research: structural and biochemical characterization of proteins responsible for cell wall modifications leading to bacterial resistance toward antibiotics
- Teaching: teaching assistant in general chemistry
- Writing experience: research manuscripts, oral presentations, posters
- Mentoring: undergraduate students

Graduate Research Assistant, Department of Chemistry and Biochemistry
Clark University, Worcester, MA (1999-2000)

- Research: macromolecular NMR
- Teaching: head teaching assistant in general chemistry
- Writing experience: wrote research manuscripts, developed student laboratory unit

Professional Research Associate, Biophysics Institute,
Bulgarian Academy of Sciences, Sofia, Bulgaria (1997-1998)

- Research: biophysical characterization of mixed Langmuir monolayers

HONORS AND AWARDS:

- Recipient of NIH RO3 grant (2010-present)
- Recipient of AAAS Excellence in Science Award (2006)
- NIH Molecular Biophysics Training Grant Recipient (2003-2005)
- Graduate School Achievement Award, University of Colorado, Boulder, CO (2003)
- Graduate Teaching Excellency Award, University of Colorado, Boulder, CO (2002)

MEMBERSHIPS:

- American Medical Writers Association (2011-present)
- American Association for the Advancement in Science (AAAS) member by invitation (2006-present)

PUBLICATIONS:

“Structure and Flexibility of the Complete Periplasmic Domain of BamA. The Protein Insertion Machine of the Outer Membrane”

Gatzeva-Topalova, P. Z., Warner, L.R., Pardi A., and Sousa, M. C. *Structure* (2010) 18 (11), 1492-1501.

“Crystal Structure of YaeT: Conformational Flexibility and Substrate Recognition”

Gatzeva-Topalova, P. Z., Walton, T. A., and Sousa, M. C. *Structure* (2008) 16 (12), 1873-1881.

“Dissecting ArnA – A Required Enzyme In The Polymyxin Resistance Pathway”

Gatzeva-Topalova, P. Z., and Sousa, M. C. *FASEB J* (2006) 20 (5), A904, Part 2.

“Structure and Mechanism of ArnA: Conformational Change Implies Ordered Dehydrogenase Mechanism in Key Enzyme for Polymyxin Resistance”

Gatzeva-Topalova, P. Z., May, A. P., and Sousa, M. C. *Structure* (2005) 13 (6), 929-42 (cover article).

“Crystal Structure and Mechanism of the Escherichia coli ArnA (Pmrl) Transformylase Domain. An Enzyme for Lipid A Modification with 4-Amino-4-deoxy-l-arabinose and Polymyxin Resistance”

Gatzeva-Topalova, P. Z., May, A. P., and Sousa, M. C. *Biochemistry* (2005) 44(14), 5328-38.

“Crystal structure of Escherichia coli ArnA (Pmrl) decarboxylase domain. A key enzyme for lipid A modification with 4-amino-4-deoxy-L-arabinose and polymyxin resistance”

Gatzeva-Topalova, P. Z., May, A. P., and Sousa, M. C. *Biochemistry* (2004) 43(42), 13370-9.

“Molecular dynamics of Ca²⁺ binding loop variants of parvalbumin with modifications at the 'gateway' position”

Elkins, K.M., **Gatzeva-Topalova, P.Z.**, Nelson, D.J *Protein Engineering* (2001) 14(2): 115-126

“Mixed Langmuir Monolayers with fluorinated and non-fluorinated hydrophilic head groups”

Gatzeva-Topalova, P.Z. and Petrov, J. G. *Annuaire de L'Universite de Sofia "St. Kliment Ohridski" Faculte de Chimie* (2001) v. 92-94, 37-42

“Molecular dynamics of calcium ion binding loop variants of Silver hake parvalbumin: A novel biophysical computational laboratory”

Nelson, D.J., Elkins, K.M., **Gatzeva-Topalova, P.Z.** *Abstracts Of Papers Of The ACS* (2000) 220 (57-CHED Part1)