

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

Clients: Hitt Medical Writing, LLC (2011 - present)

- Prepared news articles, Power Point slide sets on various biomedical topics, and CME content, including needs assessments, symposium summaries, and others

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

- 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)