Katya Nacheva, PhD
Visiting Assistant Professor of Chemistry, Eckerd College
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EDUCATION

PhD, Chemistry (January 2007 – November 2012) **University of South Florida, Tampa, FL**

Thesis:

Development of a Bio-Molecular Fluorescent Probe Used in Kinetic Target-Guided Synthesis for the Identification of Inhibitors of Enzymatic and Protein-Protein Interaction Targets

Advisor: Dr. Roman Manetsch

MS, Chemistry (1995 - 1997) **University of Plovdiv, Bulgaria**

Thesis:

Application of intermolecular amide-alkylation for the synthesis of alfa-carbolines

PROFESSIONAL WORK EXPERIENCE

Visiting Assistant Professor (August 2022 - present)
Eckerd College, St. Petersburg, FL

- General Chemistry I /II Lectures, General Chemistry Labs

Teaching Instructor (January 2013 - present)
SPC, Tarpon Springs and HCC, Tampa

- General Chemistry Lectures (CHM 2045), General Chemistry Labs, Introduction to Chemistry (CHM 1025), Organic Chemistry I Labs (2210L), Organic Chemistry II Lectures (CHM 2211), Organic Chemistry II Labs (CHM 2211L).

Postdoctoral Research Assistant (March 2013 – 2015)

- HPLC, triple quadrupole mass spectrometry analysis to identify protein-protein interaction modulators for Bcl-xL and Mcl-1
- Validation of acylsulfonamide kinetic TGS screening platforms to a variety of novel protein targets

Synthetic Chemist – Intern (March 2011 – February-2012) **Draper Laboratories, Tampa, FL**

- Synthesis and purification of a novel therapeutic decoy liposome used in Engineered Nanoparticle for Virus Elimination by Opsonization (ENVELOP) targeting infections caused by the influenza virus

Material Science Quality Control (April 2000 - April 2006) **Belac LLC, Oldsmar**

- Conducted quality assurance in material science laboratory analysis using Ultrasonic Testing (UT) technology, Fluorescent Penetrating Inspection (FPI), and X-ray
- Performed Scanning Electron Microscope (SEM) analysis of aerospace parts to determine chemical of surface coating

PUBLICATIONS & PATENTS

- Katya P. Nacheva, William A. Maza, David Z. Mayer, Frank R. Fronczek, Randy W. Larsen and Roman Manetsch*: ***Fluorescent properties and resonance energy transfer of 3,4-bis(2,4-difluorophenyl)-maleimide***; Org. Biomol. Chem., 2012, 10(38):7840-6, **doi.org/10.1039/C2OB25981H**
- Katya Nacheva, Sameer S. Kulkarni, Mintesinot Kassu, David Flanigan, Andrii Monastyrskyi, Iredia D. Iyamu, Kenichiro Doi, Megan Barber, Niranjan Namelikonda, Jeremiah D. Tipton, Prakash Parvatkar, Hong-Gang Wang, and Roman Manetsch* ***Going beyond Binary: Rapid Identification of Protein−Protein Interaction Modulators Using a Multifragment Kinetic TargetGuided Synthesis Approach***
  J. Med. Chem. 2023, 66, 5196−5207, https://pubs.acs.org/doi/pdf/10.1021/acs.jmedchem.3c00108
- Manetsch, Roman and Nacheva, Katya Pavlova and Flanigan, David Lawrence and Namelikonda, Niranjan Kumar and Iyamu, Iredia David and Kulkarni, Sameer Shamrao and Barber, Megan M. and Tipton, Jeremiah Dwayne and Wang, Hong-gang and Doi, Kenichiro. ***Target binding molecules identified by kinetic target-guided synthesis***. **US Patent 14889443**. Feb 04, 2020
- Manetsch, Roman and Ferreira, Gloria C. and Stojanovski, Bosko M. and Nacheva, Katya Pavlova. 5***-aminolevulinate synthase inhibitors and methods of use thereof.*** **US Patent 16625363**. Oct 25, 2022.

PRESENTATIONS AND INVITED TALKS

- Katya P. Nacheva, William A. Maza, David Z. Mayer, Frank R. Fronczek, Randy W. Larsen and Roman Manetsch*: Fluorescent properties and resonance energy transfer of 3,4-bis(2,4-difluorophenyl)-maleimide; Org. Biomol. Chem., 2012, 10(38):7840-6

- Katya P. Nacheva, Sameer S. Kulkarni, and Roman Manetsch*: *In situ* generated novel carbonic anhydrase inhibitors; Manuscript in preparation

- Katya Nacheva, David Flanigan, Sameer S. Kulkarni, Iredia Iyamu, Megan Barber, Kenichiro Doi, Hong-Gang Wang, Roman Manetsch*. Development of a Triple Quadrupole Mass Spectrometry Screening Platform for the Parallel Testing of Protein-Protein Interaction Targets via Sulfo-click Kinetic Target-Guided Synthesis. Manuscript in preparation

- Katya Nacheva, William A. Maza, Randy W. Larsen, Roman Manetsch: 3,4-Bis(2,4-Difluorophenyl)-Maleimide as Fluorescence Probe and its Incorporation in a Fluorescent Resonance Energy Transfer Substrate of β-Secretase. Florida Annual Meeting and Exposition 2010 (American Chemical Society Meeting). Palm Harbor, Florida, May 13 to 14, 2010

- Katya Nacheva, David Mayer, Roman Manetsch: In Situ Click Chemistry Reaction Templated by bCAII. Symposium on Drug Design, Discovery and Delivery 2009. Blase Alfano Center, University of South Florida, Tampa, Florida, October 14 to 16, 2009

- Katya Nacheva, William A. Maza, Randy W. Larsen, Roman Manetsch: 3,4-Bis(2,4-Difluorophenyl)-Maleimide as Fluorescence Probe and its Incorporation in a Fluorescent Resonance Energy Transfer Substrate of β-Secretase. Florida Annual Meeting and Exposition 2010 (American Chemical Society Meeting). Palm Harbor, Florida, May 13 to 14, 2010

- Katya Nacheva, William A. Maza, Randy W. Larsen, Roman Manetsch: Fluorescence and Resonance Energy Transfer of 3,4-bis(2,4-difluorophenyl)-maleimide. Raymond Castle conference, University of South Florida, Tampa, Florida, April 9, 2011

Awards, Honors and Scholarships:

- GPA: 3.88
- Fred & Helen M. Tharp Endowed Scholarship Award (2007-2011)

- Awarded with the Center for Drug Discovery and Innovation (CDDI) Doctoral Research Fellowship, USF Training Program for Drug Discovery in Infectious Diseases (Fall 2012)
- Certified Marketing and Management Specialists