

Melinda Layten

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Education:

Pre-doctoral student in the Molecular and Cellular Biology program at Stony Brook University – Ph.D. expected in Dec, 2007 (ABD)

Dissertation Title: "Effects of point mutations on protein folding and ligand binding" Advisor: Carlos Simmerling

BA from Thomas Edison College in Natural Sciences and Mathematics
September, 2002

Teaching Experience:

- Spring 2003 TA for Cellular Biology
Taught voluntary recitation sections and held office hours to answer student questions. Participated in proctoring and grading of exams.
- Fall 2003 TA for Introductory Chemistry
Taught mandatory recitation sections that emphasized team work and problem solving skills. Directly responsible teaching 3 sections of 35 students each for 90 minutes per week. Proctored large exam rooms and aided grading of exams.
- Spring 2004 TA for Physical Chemistry
Only TA for a class of 50 students. Responsible for all grading of quizzes and exams. Prepared problem sets for mandatory group recitation sections and led guided learning during these 3 weekly recitation sections.
- Fall 2005 TA for Introductory Chemistry (Remedial)
Taught mandatory computer based recitation sections that emphasized group work and problem solving skills.
- Spring 2007 TA for Introductory Chemistry Lab
Responsible for 2 lab sections of 25 students each. Exercises focused on synthesis, titration, spectroscopy and calorimetry.

Awards:

5/2004 Travel Scholarship Award from the Kevin King and John Miller Scholarship Fund to present a poster at the August National Meeting of the American Chemical Society. Served on the selection committee in subsequent years.

Research Experience:

- 4/2003 – Present Graduate Student in the Molecular and Cellular Biology Program working with Dr. Carlos Simmerling with the Department of Chemistry at Stony Brook University. Performing Molecular Dynamic protein studies of HIV Protease and Trp-Cage mutants as model systems for the way in which point mutations effect tertiary structure.
- 7/2002 – 4/2003 Rotation Student in the Molecular and Cellular Biology Program working with Dr. Janet Leatherwood, Dr. Joanne Engebrecht and Dr. Aaron Neiman in various aspects of yeast genetics and biochemistry include 2-hybrid screens, PCR analysis and building a microarray data set.
- 9/1994 – 6/2002 Computer Programmer. Worked in the various industries writing and maintaining software for both small and large businesses.
- 5/1994 – 8/1994 Summer Intern working with Dr. Stanley Krystek in the Computational Drug Design Group at Bristol Myers Squibb. Developed a perl program to translate pdb coordinates into secondary structural elements for molscript.

Publications and Presentations:

1. Geney, R., **Layten, M.**, Gomperts, R., Hornak, V. & Simmerling, C. (2006). Investigation of Salt Bridge Stability in a Generalized Born Solvent Model. *Journal of Chemical Theory Computation* **2**, 115-127.
2. Okur, A., Wickstrom, L., **Layten, M.**, Geney, R., Song, K., Hornak, V. & Simmerling, C. (2006). Improved efficiency of replica exchange simulations through use of a hybrid explicit/implicit solvation model. *Journal of Chemical Theory and Computation* **2**, 420-433.
3. **Layten, M.**, Hornak, V. & Simmerling, C. (2006). The Open Structure of a Multi-Drug-Resistant HIV-1 Protease is Stabilized by Crystal Packing Contacts, *Journal of the American Chemical Society* **128**, 13360-13361.

Future Goal: Teaching at a small liberal arts college in rural America