

Matthew J. Ranaghan

Local Address

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Professional Address

91 N. Eagleville Rd., U-3125
Storrs, CT 06269
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OBJECTIVE

Seeking a position as a research scientist or lab technician working with viral systems, protein chemistry or drug development.

EDUCATION

University of Connecticut, Molecular and Cellular Biology, Storrs, CT
Biochemistry Ph. D., expected graduation December 2010

Roger Williams University, Bristol, RI
Chemistry B.S., May 2003

LABORATORY SKILLS

Western blotting	Molecular biology techniques
SDS-PAGE	Polymerase chain reaction
Column chromatography	Spectroscopy
Protein purification	Circular dichroism
Differential scanning calorimetry	Site directed mutagenesis

COMPUTER SKILLS

Microsoft (MS) Word	MS Excel
MS Powerpoint	MS Access
ChemDraw	ChemSketch
Swiss-PDBViewer	REAL Basic
Adobe Photoshop	Adobe Illustrator
Gaussian 2003	Kaleidagraph (Mac)
ClustalX	Endnote

EXPERIENCE

1/06 – Present

University of Connecticut, Dept. of Molecular and Cellular Biology, Storrs, CT
Graduate Research Assistant

- Thermal characterization of wild-type and mutational variants of the integral transmembrane proteins Bacteriorhodopsin and Proteorhodopsin.
- Optimization of the growth conditions of *Halobacterium salinarum* and expression of functionally deficient Bacteriorhodopsin variants.
- Research requires the use of differential scanning calorimetry, circular dichroism and UV-vis spectroscopy, site directed mutagenesis, polymerase chain reactions, software development.

8/03 – 12/05

University of Connecticut, Dept. of Molecular and Cellular Biology, Storrs, CT
Graduate Research Assistant

- Investigating biochemical assembly mechanisms of *Salmonella typhimurium* bacteriophage P22.
- Conduct *in vivo* and *in vitro* assays for determining mutational phenotypes and characterization.
- Research required random mutagenesis, SDS-PAGE, light scattering, circular dichroism and western blotting

5/03 – 8/03

SensIR Technologies, Chemical Software Development, Danbury, CT
Summer Research Associate

- Development of proprietary IR spectral databases including generation of technical constraints (CAS registry numbers, physical properties, etc.) into organizational software.
- IR and ATR spectral analysis for a novel chemical functional group structure database.
- Skills required proficiency in Excel, Access, FT-IR/ATR instrumentation, and software development.

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8/02 – 5/03

Roger Williams University, Dept. of Chemistry, Bristol, RI
Laboratory Research Assistant

- Undergraduate research project entitled “Nitric Oxide production from synthesized Ruthenium (III) porphyrins.”
- Organic synthesis of Ruthenium (III) porphyrin complexes.
- Research included utilization of IR Spectroscopy, Ultraviolet/Visible Spectroscopy, Cyclic Voltammetry, and Gas Chromatography.

5/02 – 8/02

Ciba Specialty Chemicals, Dept. of Personal Care, Tarrytown, NY
Summer Research Assistant

- Analysis of novel stabilizer additives, chemical interactions and comparisons with market competitor stabilizers.
- Ranked stabilizer additives for chemical viability and pigment integrity.
- Projects required utilization of Xenon Weatherometer, Colorimeter and Gas Chromatography.

PUBLICATIONS

Parent, K. N., **Ranaghan, M. J.**, Teschke, C. M.. (2004) *Mol Microbiol.* 54(4):1036-50.
A second-site suppressor of a folding defect functions via interactions with a chaperone network to improve folding and assembly *in vivo*.

POSTERS

Ranaghan, M. J., Poulin, D. S., Rangarajan, R., Whited, G., Albert, A. D., Birge, R. R. (2007) 4th North Eastern Structural Symposium (NESS). Thermodynamic analysis of wild type Green & Blue Proteorhodopsin's.

Ranaghan, M. J., Whited, G., Albert, A. D., Birge, R. R. (2007) 234th American Chemical Society (ACS) National Meeting. Thermal characterization and differential scanning calorimetric investigations of wild type Green & Blue Proteorhodopsin's. #1108749 (BIOL 102)

Ranaghan, M. J., Koscielcki, J. F., Sullivan, J. O., Rangarajan, R., Wise, K. J., Albert, A. D., Birge, R. R. (2006) 3rd North Eastern Structural Symposium (NESS). Differential Scanning Calorimetric Studies of Bacteriorhodopsin Variants.

Ranaghan, M. J., Suh, J., O'Shea, S. K., and Timpson, C. J. (2003) 225th American Chemical Society (ACS) National Meeting. Nitric Oxide Production from Synthesized Ruthenium (III) Porphyrins. #0926

HONORS & AWARDS

2007

Molecular & Cell Biology Outstanding TA Award

2007

ACS Regional High School Olympiad, Laboratory Exam Judge

TEACHING EXPERIENCE

2007

Molecular & Cell Biology 203: Introductory Biochemistry lecture TA

2006

Molecular & Cell Biology 204: Biochemistry lab TA

2004 - 2008

Educational Testing Services (ETS) Proctor, University of Connecticut (regional)

2004 - 2006

Molecular & Cell Biology 203: Introductory Biochemistry Lab TA

2004

Biology 102: Introduction to Biology Lab TA

TEACHING HANDOUTS

Ranaghan, M. J. MCB 203: Tips for Creating a Lab Report. University of Connecticut, Molecular & Cell Biology, MCB 203 Biochemistry Laboratory Handout. Created and distributed in MCB 203 from January 4, 2007 to present.

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TEACHING HANDOUTS (cont.)

Ranaghan, M. J. MCB 203: Excel Tutorial. University of Connecticut, Molecular & Cell Biology, MCB 203 Biochemistry Laboratory Handout. Created and distributed in MCB 203 from January 10, 2006 to present.

ORGANIZATIONS

- **American Chemical Society (2003 – present)**
- **American Association for the Advancement of Science (2007)**

REFERENCES

References are available upon request.