Rachel Redler **Curriculum Vitae**

Contact Information

Department of Biochemistry and Biophysics
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Education

2008 – present	Ph.D. candidate, Biochemistry, University of North Carolina at Chapel Hill, Chapel Hill, NC
2002 – 2006	Bachelor of Science, Biochemistry, Texas A&M University, College Station, TX GPA = 3.99/4.00

Honors and Awards

2011 – 2014	Ruth L. Kirschstein National Research Service Award Predoctoral Fellowship, National Institute of Neurological Disorders and Stroke, National Institutes of Health
2006	Graduation *Summa Cum Laude,* Texas A&M University
2002 – 2006	National Merit Scholar Finalist, Texas A&M University
2002 – 2006	Minnie Stevens Piper Foundation Scholarship
2002 – 2006	IBM Thomas J. Watson Memorial Scholarship
2002 – 2006	Terry Foundation Scholarship

Research Experience

Aug. 2008 – present: Graduate Research Assistant, Department of Biochemistry and Biophysics, University of North Carolina at Chapel Hill
Principal Investigator: Nikolay V. Dokholyan
Thesis: "Impact of post-translational modification on Cu/Zn superoxide dismutase (SOD1) aggregation in amyotrophic lateral sclerosis (ALS)"
Techniques: Protein purification, molecular biology, analytical chromatography, immunoblotting, surface plasmon resonance, inductively coupled plasma mass spectrometry, stopped-flow spectrometry, circular dichroism spectroscopy, mammalian cell culture (NSC-34 neuroblastoma/spinal cord), X-ray crystallography

Jan. 2005 – Aug. 2005: Undergraduate Research Assistant, Department of Plant Pathology, Texas A&M University
Principal Investigator: Charles M. Kenerley
Techniques: Molecular biology, confocal and fluorescence microscopy, fungal culture maintenance and sterile technique

Teaching Experience

2010 – present	Guest lecturer, BIOC 706: Biochemistry of Human Disease (graduate course)
2009	Teaching assistant, BIOC 107: Introduction to Biochemistry (undergraduate course)

Publications

Kotelnikova, E. A., Pyatnitskiy, M. A., **Redler, R. L.** and Dokholyan, N. V. "Role of Ca^{2+}-mediated signaling in ALS pathology", *Biological Models: From Knowledge Networks to Biological Models*. Ed. Anton Yuryev, Ph.D. and Nikolai Daraselia, Ph.D. Bentham eBooks, 24-72 (2012)

Redler, R. L. and Dokholyan, N.V. "The complex molecular biology of amyotrophic lateral sclerosis (ALS)", *Progress in Molecular Biology and Translational Science*, 107:215-262 (2012)

Tsao, D., Wieskopf, J. S., Rashid, N., Sorge, R. E., **Redler, R. L.**, Segall, S. K., Mogil, J. S., Maixner, W., Dokholyan, N. V. and Diatchenko, L. "Serotonin-induced hypersensitivity via inhibition of catechol O-methyltransferase activity", *Molecular Pain*, 8:25 (2012)

Redler, R. L., Wilcox, K. C., Proctor, E. A., Fee, L., Caplow, M., and Dokholyan, N. V. "Glutathionylation at Cys 111 triggers dissociation of wild type and FALS mutant SOD1 dimers", *Biochemistry*, 50:7057-7066 (2011)

K. C. Wilcox, L. Zhou, J. Jordon, Y. Huang, Y. Yu, **R. L. Redler**, X. Chen, M. Caplow, and N. V. Dokholyan, “Modifications of SOD1 in human erythrocytes: A possible role in ALS”, *Journal of Biological Chemistry*, 284: 13940-13947 (2009)

Presentations

2012	Neuroscience 2012 (Society for Neuroscience annual meeting) New Orleans, LA *(Poster)*
2012	Physics of Protein Folding and Aggregation Bressanone, Italy *(Oral presentation)*
2011	Mechanisms of Neurodegeneration in the Central Nervous System Rocky Mountain Laboratories, Hamilton, MT *(Poster)*

Professional Service

2012 – present	Associate Faculty Member, Faculty of 1000
2011 – present	Reviewer, *Biochimica et Biophysica Acta- Molecular and Cell Biology of Lipids*
2010 – present	Reviewer, *Biochimica et Biophysica Acta- Molecular Basis of Disease*