

Paul Clinton Spiegel, Jr., Ph.D.

Assistant Professor
Western Washington University
Department of Chemistry
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EDUCATION:

Doctor of Philosophy, Biochemistry
Program in Biomolecular Structure and Design
University of Washington Department of Biochemistry and the Fred Hutchinson
Cancer Research Center, Seattle, WA (2004)

Bachelor of Science, Biochemistry and Biophysics
University Honors College, Oregon State University, Corvallis, OR (1999)

EXPERIENCE:

- 09/07 – present Assistant Professor, Department of Chemistry, **Western Washington University**. Research Focus: Ribosome structure and function, RNA-based biotechnological applications.
- 09/04 – 09/07 Jane Coffin Childs Postdoctoral Fellow, Department of Molecular, Cellular and Developmental Biology, **University of California, Santa Cruz**, in the lab of Dr. Harry F. Noller. Research Focus: Structural and functional studies of ribosome translocation.
- 06/99 – 08/04 Graduate student in the Division of Basic Sciences (**FHCRC**) and the Department of Biochemistry (**University of Washington**) in the lab of Dr. Barry L. Stoddard. Research Focus: Structural and mechanistic studies of blood coagulation factor VIII.
- 03/98 – 06/99 Undergraduate Research Assistant, Department of Biochemistry and Biophysics, **Oregon State University**, in the lab of Dr. Victor L. Hsu. Research Focus: NMR and CD spectroscopic studies of protein deamidation products in oligopeptides (honors college thesis project).
- 06/98 – 08/98 Summer Undergraduate Research Fellow, **University of Texas Southwestern Medical Center**, in the lab of Dr. Richard G.W. Anderson. Research Focus: Localization of Caveolin-1 to actin patches in *S. cerevisiae*.

TEACHING EXPERIENCE:

Lectureship Experience

University of Washington **Biochemistry 405/406 (Winter/Spring, 2004)** – Developed curriculum, instructed 50% of lectures, developed and maintained class website, constructed and graded all exams.

Teaching Assistant Experience:

University of Washington **Biochemistry Lab (Fall, 2000)** – Developed, organized and presented lecture material, demonstrated laboratory techniques, constructed and administered exams and assignments.

Protein Structure, Regulation and Modification (Spring, 2001) – Held office hours, developed class website, assisted in developing course material.

Oregon State University **General Biochemistry (Fall, 1998)** – Instructed weekly recitation section, held office hours, constructed exams and graded course material.

Basic Biochemistry (Winter/Spring, 1999) – Held office hours, graded all exams and course material.

PUBLICATIONS:

Shen BW*, **Spiegel PC***, *et. al.*, Stoddard, BL. (2007). Tertiary Structure and Domain Organization of Coagulation Factor VIII. *Submitted*. *Denotes Co-first author.

Spiegel PC, Ermolenko DN, Noller HF. (2007). Elongation Factor G Stabilizes the Hybrid-State Conformation of the 70S Ribosome. *RNA*. 13(9): 1473-82.

Ermolenko DN, Majumdar ZK, Hickerson RP, **Spiegel PC**, Clegg RM, Noller HF. (2007). Observation of Intersubunit Movement of the Ribosome in Solution Using FRET. *Journal of Molecular Biology*. 370(3): 530-40.

Ermolenko DN*, **Spiegel PC***, Majumdar ZK, Hickerson RP, Clegg RM, Noller HF. (2007). The Antibiotic Viomycin Traps the Ribosome in an Intermediate State of Translocation. *Nature Structural and Molecular Biology*. 14(6): 493-7. *Denotes Co-first author.

Spiegel PC, Chevalier B, Sussman D, Turmel M, Lemieux C, Stoddard BL. (2006). The Structure of I-CeuI Homing Endonuclease: Evolving Asymmetric DNA Recognition from a Symmetric Protein Scaffold. *Structure*. 14(5): 869-880.

Spiegel PC, Murphy P, Stoddard BL. (2004). Surface-exposed hemophilic mutations across the factor VIII C2 domain have variable effects on stability and binding activities. *Journal of Biological Chemistry*. 279(51): 53691-8. *Cover Article*

Spiegel PC, Kaiser SM, Simon JA, Stoddard BL. (2004). Disruption of protein-membrane binding and identification of small molecule inhibitors of coagulation factor VIII. Chemistry and Biology. 11(10): 1413-22.

Bolduc JM, **Spiegel PC**, Chatterjee P, Caprara MG, Waring RB Stoddard BL. (2003). The structure and DNA recognition of a bifunctional homing endonuclease and group I intron splicing factor. Genes and Development. 17(23): 2875-88. *Cover Article*

Spiegel PC and Stoddard BL. (2002). Optimization of factor VIII replacement therapy: can structural studies help in evading antibody inhibitors? British Journal of Haematology. 119(2): 310-22. *Review*

Spiegel PC, Jacquemin M, Saint-Remy JM, Stoddard BL, Pratt KP. (2001). Structure of a factor VIII C2 domain-immunoglobulin G4kappa Fab complex: identification of an inhibitory antibody epitope on the surface of factor VIII. Blood. 98(1): 13-9. *Plenary Article*.

ORAL PRESENTATIONS:

“Movements of tRNA during ribosomal translocation”, UC Santa Cruz RNA Club, January 2007.

“Ribosome Function in an RNA World”, Western Washington University, December 2006.

“Structural investigations into tRNA movements during ribosomal translocation”, The Scripps Research Institute, August 2006.

“Crystal Structure of the LAGLIDADG Homing Endonuclease, I-Ceul”, UC Santa Cruz Structure Club, January 2005.

“Factor VIII, Hemophilia A, and Antibody Inhibitors”, Dissertation Defense, FHCRC, July 2004.

“Identification and characterization of small molecule inhibitors of Factor VIII and coagulation”, Friday Evening Seminar, FHCRC, November 2003.

“Identification and characterization of small molecule inhibitors of Factor VIII and coagulation”, Molecular Biophysics Seminar, UW, December 2003.

“Crystallographic studies of a group I intron-encoded homing endonuclease and putative maturase from *Chlamydomonas eugametos* (I-Ceul)”, Molecular Biophysics Seminar, UW, March 2003.

“Coagulation factor VIII, hemophilia A, and antibody inhibitors”, 2002 Volcano Conference in Bioorganic Chemistry, Feb. 23, 2002.

“Structural and Mechanistic Studies of Blood Coagulation Factor VIII”, Molecular Biophysics Seminar, UW, December 2001.

“Crystal structure of the factor VIII C2 domain complexed with the Fab fragment of a factor VIII inhibitor antibody”, Friday Evening Seminar, FHCRC, December 2000

“Crystal structure of the factor VIII C2 domain complexed with the Fab fragment of a factor VIII inhibitor antibody”, 42nd Annual Meeting of the American Society of Hematology, December 4, 2000.

HONORS/AWARDS:

Recipient of a three-year postdoctoral fellowship from the Jane Coffin Childs Fund for Medical Research and sponsored by the Agouron Institute.

Recipient of a three-year predoctoral Molecular Biophysics Training Grant sponsored by the NIH (T32 GM08268).

Recipient of a Summer Undergraduate Research Fellowship at the Univ. of Texas, Southwestern Medical Center.

Recipient of the 1998-1999 Oregon Space Grant Scholarship.

Graduated from OSU *Magna Cum Laude*, member of Phi Theta Kappa Honor Society, Member of the OSU Honors College.