

Martina Ralle



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Current Position

- Assistant Professor of Molecular & Medical Genetics, Oregon Health & Science University, 2014 - present

Background

- Research Assistant Professor, Department of Molecular & Medical Genetics, Oregon Health & Science University (OHSU), 2013-2014
- Research Assistant Professor, Department of Biochemistry & Molecular Biology, OHSU, 2005-2013
- Research Associate, Department of Biochemistry & Molecular Biology, OHSU, 2003-2005
- Director, Elemental Analysis Core, Department of Biochemistry & Molecular Biology, OHSU, 2003-present
- Research Scientist, Department of Biochemistry & Molecular Biology, OGI School of Science and Engineering, OHSU, 1996-2003
- Adjunct Faculty, Department of Allied Health, Portland Community College, 2005-2006
- Adjunct Faculty, Chemistry Department, Lewis and Clark College, January 1998-May 1998
- Postdoctoral Research Associate, Chemistry Department, University of Tennessee (UT) and Oak Ridge National Laboratory, 1994-1996
- Postdoctoral Research Associate, Chemistry Department, UT, 1993-1995
- Ph.D., Solid state chemistry, University of Bonn, Germany, 1989-1993

Honors

- Visiting Scientist, Argonne National Laboratory, Advanced Photon Source, October-November 2013
- Visiting Professor, Chemistry Department, Reed College, 2009-2010
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Feodor Lynen Fellowship, Alexander von Humboldt-Foundation, 1993-1995

Activities

I have worked at synchrotrons as a user for more than 20 years. In 2013 I was awarded a visiting scientist fellowship and spent 10 weeks at the APS to improve sample preparation methods for X-ray imaging. I have

served on the SSRL-UO committee and am a current member of the proposal review panels at both, SSRL and the APS.

Interests

My research interests revolve around elucidating the role of metals in neurodegenerative diseases. A central part in my research is to employ synchrotron radiation to determine the location and concentration of elements in tissues and cells at the cellular and subcellular level.

I have also used EXFAS spectroscopy to determine the copper coordination in enzymes and proteins and we are now employing EXAFS in bulk biological material (homogenized cells of tissue) to explore the dominant copper coordination.

Lastly, we are employing XANES and μ -XANES on bulk and tissue samples (focused XANES) to investigate the copper and sulfur environment in biological specimen.

Goals

My goal as a member of this committee is to improve communication between the user community and the APS administration. As a long-standing user as well as an experienced member of the proposal review panel at the APS, I feel that I bring the necessary experience and expertise to this panel. As a chemist-turned-biologist, I am also able to speak for the biological research performed at the APS which has become a significant part at many beamlines over the past years. Lastly, over the years as user I have developed good working relationships with many beamline scientists and am able to understand their perspective towards improving user operations.