Georg Ehlers

ehlersg@ornl.gov
+1 (865) 574-5243

Neutron Technologies Division
Oak Ridge National Laboratory
Oak Ridge, 37831-6466 TN, USA

Career

Oak Ridge National Laboratory (ORNL) — Oak Ridge, USA

Section Head *Oct '20 – present*

Leader of the *Neutron Instrument Technologies* Section. Managerial responsibility for approximately 55 employees.

Group Leader *Aug '19 – Oct '20*

Leader of the *Instrument Methods, Projects and Technologies* Group. Managerial responsibility for approximately 25 employees.

Senior Instrument Development Scientist *Oct '18 – Jul '19*

Moved to the Neutron Technologies Division to take the role of an instrument development scientist, looking at ORNL's instrument suite at HFIR and SNS. Increasing involvement with the redesign of the HFIR cold guide systems.

Senior Instrument Scientist *Jan '14 – Sep '18*

Lead instrument scientist at CNCS. Main accomplishment: Established CNCS as a world-leading instrument in its class, with associated sample environment, data reduction and data analysis support. One of many research highlights: the quantum spin liquid candidate material $YbMgGaO_4$.

Instrument Scientist *Mar '03 – Dec '13*

Joined the Spallation Neutron Source (SNS) at Oak Ridge to build an instrument (CNCS) for the user scattering program. Lead a small project team of scientists, engineers and scientific associates. The successful completion of this project (the first user experiment was conducted in 2009) is probably the biggest accomplishment in my professional career.

Institut Laue-Langevin (ILL) — Grenoble, France

By impact and volume of scientific output, ILL has been since its founding the leading international research institution for neutron scattering.

ILL Staff Instrument Scientist *Feb '99 – Mar '03*

Responsible scientist at the IN11 spin-echo instrument. Main accomplishment: long-term sustained research success with dynamics in geometrically frustrated magnets with neutron spin-echo methods. Conceptual design of a new type of instrument (WASP). Several long-lasting key improvements of the IN11 instrument. Research highlight: dynamics in spin-ice.

Instrument Scientist *Mar '97 – Feb '99*

Long-term invited researcher at ILL (seconded from HZB Berlin). Responsible scientist at the IN15 spin-echo instrument. Main accomplishment: first ever neutron time-of-flight spin-echo experiment (lead: B. Farago). Research highlight: measured the incoherent scattering length of ^{3}He using a polarized cell, far surpassing the previously achieved best precision of the measurement.

Helmholtz-Zentrum Berlin (HZB) — Berlin, Germany

Known as Hahn-Meitner Institut during my time there, HZB is a leading German federal research institute with 800 members of staff.

Post-Doctoral Researcher — *Jun '96 – Mar '97*

Conceptual design of a long-wavelength Laue diffractometer at a long-pulse Spallation Source. Pre-McStas era. Self developed low-level code for neutron Monte Carlo study.

Ph.D. Student — *Nov '93 – Jun '96*

Magnetic neutron powder diffraction. Dissertation project: "Frustrated magnetic $4f$-moments in intermetallic compounds of the Lanthanides which adopt the ZrNiAl-structure". Defended 06/06/1996.

Education

Humboldt University Berlin — Berlin, Germany

Diploma Degree in Physics — *1993*

Studies of the ac-susceptibility of thin superconducting films of $YBa_2Cu_3O_{7-\delta}$.

Humboldt University Berlin — Berlin, Germany

University courses, Physics — *1990 – 1993*

Friedrich-Schiller-University Jena — Jena, Germany

University courses, Physics — *1988 – 1990*

Skills

Technical skills: Neutron scattering instrument design (time-of-flight spectroscopy, spin-echo, diffraction), combining scientific vision with technical innovation. Designed and built neutron optics and polarization components. Developed, implemented and operated complex data acquisition systems, specializing in neutron scattering. Contributed to the low-level instrumentation side as well as the high-level user-interface side (GUI workflow design). Use of professional software (Igor Pro, Xcode, McStas, MS Office, etc.) and hardware (National Instruments, Keithley, Quantum Design Inc., etc.). Programming languages: C, C++, Fortran.

Experience: Working in areas requiring special attention and work control procedures (radiation areas). DOE project management experience.

Languages: German, English, with full professional proficiency, I can speak fluently and write formal and informal documents in these languages. French, with limited professional proficiency, I speak fluently and can have a business conversation but writing documents is a challenge.

Professional accomplishments

Neutron scattering community: Member of two technical advisory panels (STAPs) for the European Spallation Source, for spectroscopy and spin-echo, chairing both. Served on instrumentation advisory panels for ILL, NIST, and ORNL. Member of the *Neutron Scattering Society of America*.

Publications: For the complete list of my papers published in peer-reviewed journals and scientific books, please refer to the document provided separately.