

**FRANZ X. GALLMEIER**  
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**A. Education and Training**

- 1993 Ph.D. in Physics, Technische Universität Muenchen (TUM)/Germany  
As a member of the FRM-II research reactor project team I worked on Optimization of Installations for the Utilization of the reactor such as beam tubes, cold and hot sources, fast neutron beam, and irradiation facilities.
- 1988 Diploma in Physics, TUM/Germany  
Diploma-Thesis conducting experiments of the solid-liquid phase transition on oriented single-crystal gallium

**B. Research and Professional Experience**

- 2008 – present Team leader for SNS Neutronics since 2008  
Directing and overseeing the neutronics analysis and source performance diagnostics work for SNS and HFIR of a team of 6-8 team members.  
Developed integrated shielding solutions for all SNS beamlines and instruments.  
Supporting HFIR's neutron scattering mission performing shielding assessments for new and reconfigured instruments in the Thermal Beam Room and Cold Guide Hall.  
Developing, evaluating, and diagnose neutron transport in neutron beamlines to optimize best performance of instruments.  
Developed and integrated tooling to improve the fidelity of neutron transport, shielding, and activation predictions in analysis workflows.  
Defined and guided a research program on moderator and material studies with the goal of improving source performance of SNS and HFIR, and future ORNL neutron sources such as STS and SEEMS.  
Acting as Level-3 manager in supporting the Proton Power Upgrade project.  
Supporting SNS operations by providing shielding assessments, and handling and disposal of activated end-of-life components.
- 2000 – 2007 Staff Scientist, ORNL, Spallation Neutron Source  
Continued to work with the MCNPX development team to advance the radiation transport tools for assessment of spallation systems in particular to enable distributed computing to speedup the calculation turnaround.  
Conducted shielding and prompt and remnant radiation field assessments to support the SNS accelerator systems buildout, and commissioning and supported the shielding aspect in the SNS ARR reviews.  
Developed beamline and instrument enclosure shielding solutions for the SNS instruments CNCS, EQSANS, and VULCAN.
- 1998 – 1999 Staff Scientist, ORNL, Computational Physics and Engineering Division  
Developing radiation transport methods to be utilized for designing accelerator driven systems to support the SNS project, and as member of the MCNPX development team
- 1996 – 1997 Nuclear analyst, TUM, FRM-II project  
Working on reactor physics and shielding problems, and fuel element development
- 1993-1995 Postdoctoral position, Oak Ridge National Laboratory (ORNL)  
Working on reactor physics topics of the Advanced Neutron Source Project

### C. Selected Publications

1. F. X. Gallmeier, P. D. Ferguson, I. I. Popova, E. B. Iverson, The Spallation Neutron Source (SNS) Project: A Fertile Ground for Radiation Protection and Shielding Challenges, International Conference on Radiation Protection and Shielding, Funchal, Portugal, May 9-14, 2004, Radiation Protection Dosimetry, Vol 115 No1-5, p 23-32 (2005).
2. F.X. Gallmeier, P.D. Ferguson, E.B. Iverson, I.I. Popova, W. Lu, Neutron Beamline Shielding Calculations at SNS, Proceedings of the 7<sup>th</sup> International Conference on Accelerator Applications, Venice, Italy, August 28-September 1, 2005, Nuclear Instruments and Methods in Physics Research A, vol 562, p 946-949 (2006).
3. Gallmeier, F.X., Wohlmuther, M., Filges, U., Kiselev, D. and Muhrer, G. Implementation of Neutron Mirror Modeling Capability into MCNPX And Its Demonstration In First Applications, Nuclear Technology Vol. 168(3), pp. 768- 772 (2009).
4. Jean-Christophe David, Detlef Filges, Franz Gallmeier, Mayeen Khandaker, Alexander Konobeyev, Sylvie Leray, Guenter Mank, Alberto Mengoni, Rolf Michel, Naohiko Otuka and Yair Yariv, Benchmark of Spallation Models, Proceedings of The Joint International Conference of the 7th Supercomputing in Nuclear Application and the 3rd Monte Carlo (SNA+MC 2010), Progress in Nuclear Science and Technology, 2, p. 942-947 (2011).
5. Zhao, J.K., Robertson, J.L., Herwig, K.W., Gallmeier, F.X. and Riemer, B.W., Optimizing moderator dimensions for neutron scattering at the spallation neutron source, Review of Scientific Instruments, Vol. 84(12), pp. 125104 (2013).
6. E.B. Iverson D.V. Baxter, G. Muhrer, S. Ansell, R. Dalglish, F.X. Gallmeier, H. Kaiser, W. Lu, Enhancing neutron beam production with a convoluted moderator, Nucl. Inst. Meth. A, 762, p. 31-41, (2014).
7. Igor Remec, Franz X. Gallmeier, Mark J. Rennich, Thomas J. McManamy, Wei Lu , Neutronics Analyses for the SNS second Target Station, *Joint International Conference on Mathematics and Computation (M&C), Supercomputing in Nuclear Applications (SNA) and the Monte Carlo (MC) Method* • Nashville, TN • April 19-23, 2015, on CD-ROM, American Nuclear Society, LaGrange Park, IL (2015).
8. F.X. Gallmeier, Lu W, Riemer BW, Zhao JK, Herwig KW, Robertson JL, Conceptual moderator studies for the Spallation Neutron Source short-pulse second target station, Rev Sci. Inst. 87, 063304 (2016).
9. D. D. DiJulio, N. Cherkashyna, J. Scherzinger, A. Khaplanov, D. Pfeiffer, C. P. Cooper- Jensen, K. G. Fissum, K. Kanaki, O. Kirstein, G. Ehlers, F. Gallmeier, D. E. Hornbach, E. B. Iverson, R. J. Newby, R. J. Hall-Wilton, P. M. Bentley, "Characterization of the radiation background at the Spallation Neutron Source." Journal of Physics: Conference Series 746(1), 012033 (October 2016).
10. F. X. Gallmeier, E.B. Iverson, W. Lu, D.V. Baxter, G. Muhrer, S. Ansell, Introducing single-crystal scattering and optical potentials into MCNPX: Predicting Neutron Emission from a Convoluted Moderator, Nucl. Instr. Meth. A, Vol 814, p 39-49 (2016).
11. G. Ehlers, F. X. Gallmeier, V. B. Graves, K. W. Herwig, G. Sala, L. L. Daemen, A. J. Ramirez-Cuesta, "Future directions for spectroscopy at the Spallation Neutron Source." Physica B: Condensed Matter 564, 5-9 (July 2019).
12. K. B. Grammer, F. X. Gallmeier and E. B. Iverson, A Chopper Extension to model neutron transport with non-static surfaces and high-speed moving media in MCNPX 2.7, Nucl. Inst. Meth. A. Vol 932, pp 43-49 (2019).
13. K. B. Grammer and F. X. Gallmeier, The small-angle neutron scattering extension in MCNPX and the SANS cross section for nanodiamonds, Nucl. Inst. Meth. A. Vol 953, p 163226 (2020).