RONALD S. MOORE, Ph.D.

1ronmoore1@gmail.com (865) 399-3545 U.S. Citizen

QUALIFICATION SUMMARY

Senior Scientist & Operations Director

Senior-level Scientist & Operations Director with more than 20 years of achievement driving innovation, leading cutting-edge research and data analysis initiatives, and coaching cross-functional teams to success. Unique ability to balance technical expertise and executive decision-making, with a record of structuring research and laboratory operations for optimal performance, efficiency, and quality. Accomplished physicist who has been entrusted with the execution and administration of some of the world's most advanced research equipment and programs, including operational leadership of the Tevatron at the Fermi National Accelerator Laboratory. Proven capacity to advance the strategic priorities of top tier institutions through hardware/software design, systems engineering, data analysis, and ground-level research. Holds Ph.D. and M.S. in Physics.

OAK RIDGE NATIONAL LABORATORY – Oak RIdge TN 2021 to present

US Department of Energy national laboratory conducting world-leading research and development across a variety of disciplines to advance pressing scientific questions and technological challenges.

SENIOR R&D STAFF MEMBER (ENRICHMENT SCIENCE AND ENGINEERING DIVISION)

Conduct research and development for stable isotope enrichment. Analyze device diagnostic data to drive improvements for enrichment, retention, and overall throughput.

- Coordinate operation and studies for an Electromagnetic Isotope Separators (EMIS) device.
- Develop software models of EMIS units to understand beam transport and increase efficiency.
- Write Python code to analyze diagnostic data from the cyclotron, beamline, and instrumentation to monitor system performance and drive hardware and software improvements that provide more robust and reliable operation.

PRONOVA SOLUTIONS – Knoxville TN 2014 to 2021

A part of Provision Healthcare, ProNova Solutions has developed a next generation proton beam therapy system for treating cancerous tumors and making this advanced treatment more affordable and available to potential customers around the world.

SENIOR PHYSICIST AND RADIATION SAFETY OFFICER

Led commissioning of our SC360 proton therapy system at clinical customer sites and provided support for clinical operations. Analyzed diagnostic data to drive improvements in system performance.

- Integrated the ~235 MeV cyclotron that serves as the proton source for patient treatment into the SC360.
- Developed accelerator physics models of the beam transport lines.
- Led and conducted beam studies to commission the beam transport lines, energy degraders, and instrumentation.
- Wrote Python code to analyze diagnostic data from the cyclotron, beamline, and instrumentation to monitor system performance and drive hardware and software improvements that provided more robust and reliable operation.
- Provided on-call support for clinical operations and our radiation damage testing program.
- Served as Radiation Safety Officer - oversaw employee dosimetry program and liaised with state regulatory agency.

MASSACHUSETTS GENERAL HOSPITAL / HARVARD MEDICAL SCHOOL – Boston, MA 2011 to 2014

Primary teaching hospital of Harvard Medical School and premier biomedical research facility; Massachusetts General Hospital (MGH) operates a $400M annual research budget and is consistently ranked as a U.S. Best Hospital by U.S. News & World Report.

ASSISTANT PHYSICIST – DEPT. OF RADIOLOGY, DIVISION OF NUCLEAR MEDICINE & MOLECULAR IMAGING

ASSISTANT PROFESSOR – DEPT. OF RADIOLOGY

Supported and advanced the work of MGH's world-renowned Nuclear Medicine & Molecular Imaging division through ground-level research and testing. Continually analyzed research operations for effectiveness and identified strategies to grow quality and consistency. Helped conceptualize and deliver new research capabilities to support MGH innovation in the field of nuclear medicine. Represented MGH expertise through both regional and national speaking engagements and contributions to peer-reviewed journals.

- Operated GE PETtrace cyclotron to produce positron-emitting isotopes for clinical and research use, and to design and test new cyclotron targetry for carbon-11 and positron emitting radiometal isotopes.
- Identified need and introduced data-mining of cyclotron performance to better monitor and respond to operational trends, providing actionable data analysis to proactively spot emerging problems and begin remediation.
- Conducted quality control (chemical and radionuclidic purity) of short-lived radiotracers using gas chromatography and gamma ray spectrometry.
- In recognition of performance and expertise, selected to serve on the Radiation Safety Committee for the Center for Translational Nuclear Medicine and Molecular Imaging.
- Delivered regional presentations at the MIT Laboratory for Nuclear Science and Northeastern University's Physics Department, and national presentations at the Physics Departments of Pennsylvania State University and Florida State University, among others.
- Received a Universities Research Association (URA) Visiting Scholars Program award (2012) to explore the feasibility of accelerator-based production of medical isotopes at the Fermilab Project X Injector Experiment (PXIE) Facility.

FERMI NATIONAL ACCELERATOR LABORATORY – Batavia, IL 2001 to 2011

US Department of Energy national laboratory specializing in high-energy particle physics; Fermilab is widely regarded as America's top laboratory for particle physics research.

SCIENTIST 2

Progressed from Associate Scientist to Scientist 2, serving in a range of roles including Run Coordinator, Head of Tevatron Department, and Associate Head of Accelerator Division. Held chief responsibility for operation of some of Fermilab's most critical programs and equipment. Helped structure internal processes for optimal performance and productivity, coordinated cross-functional efforts of global teams, and led cutting-edge experiments in support of some of the world's most significant particle physics research.

- Presided over the operation of Tevatron proton-antiproton collider for 6 years, administering the U.S. flagship accelerator for experimental high-energy physics and formerly the highest energy machine in the world.
- Directed team of 15 Ph.D scientists and engineering physicists in the execution of proton-antiproton collisions for use by 2 large experimental collaborations, each with nearly 400 scientists, engineers, post-docs, and students from leading universities and institutions around the world.
- Developed and maintained Java and C software applications for accelerator operation, overseeing controls and data acquisition for accelerator instrumentation, beam monitoring algorithms for control room operators, graphical interfaces for displaying online accelerator data, and storing/retrieving accelerator configuration data in Oracle database via SQL.

(Fermi National Accelerator Laboratory continued next page)

*(**FERMI NATIONAL ACCELERATOR LABORATORY** – CONTINUED)*

- Drove multiple accelerator improvement initiatives, including electrostatic separators and collimator installation; led teams of physicists, engineers, and technicians in the design and installation of new hardware for the accelerator to improve operational reliability and enhance the visualization of machine performance data.
- Supported the Collider Detector at Fermilab (CDF) experimental collaboration, including development of an application that helped protect a critical detector component and enabled its shut down if necessary; authored firmware changes for electronics that extended their useful life for an additional 6 years.
- Wrote C++ code and used ROOT software for physics analysis (lifetime of the B_c meson subatomic particle): identify desired events from > 1 PB of CDF experiment data, model signal and backgrounds, perform mathematical fits.
- Elected to and played leadership roles for multiple local, national, and international committees, including service as Chair of the Users Executive Committee, representing approximately 2,500 scientists.
- Two-time recipient of Fermilab Exceptional Performance Recognition Award, and delivered presentations at the NIST Center for Neutron Research and University of Chicago's Enrico Fermi Institute, among others; also launched and maintained Tevatron Facebook page and Twitter feed showcasing research initiatives and breakthroughs to lay audience.

UNIVERSITY OF MICHIGAN – Ann Arbor, MI — 1997 to 2001

POSTDOCTORAL RESEARCH FELLOW

Strengthened the Physics department's standing as a leading research institute and trusted thought-leader, conducting a host of research projects and identifying process improvement opportunities. Represented the department in collaborative projects with some of the nation's leading facilities and institutions, including Fermilab.

- Led design, production, and commissioning of custom digital electronics for CDF experiment at Fermilab, coaching team of undergraduates and coordinating efforts of scientists, engineers, and post-docs from multiple institutions.
- Used Mentor Graphics software for PCB-level schematic entry, layout, routing, simulation; also schematic and VHDL designs for FPGAs, CPLDs, and PALs.
- Drove production and debugging effort of 540 Time-to-Digital Converters (TDC), a critical component of the CDF experiment; discovered manufacturing defect and design flaws, developed solutions; wrote assembly language code for embedded Digital Signal Processor (DSP)
- Created Java GUI clients (Windows/Linux) and C server code (VxWorks) for electronics certification/debugging, configuration and operation, store/retrieve board configuration data via SQL from Oracle and MS Access databases.

EDUCATION

University of Michigan – Ann Arbor, MI, Ph.D. in Physics, M.S. in Physics
- Awarded Regents'-Crane Fellowship
- Dissertation: Measurement of the Chirality Parameter in the Charged-Current Coupling of the Tau Lepton

Pennsylvania State University – University Park, PA, B.S. in Physics (Honors), B.S. in Mathematics
- Thesis: Trigger Electronics for a Scintillating Fiber Tracker for the Solenoidal Detector Collaboration at the Superconducting Super Collider
- NCAA Division 1 Academic All-American, Men's Cross Country

PROFESSIONAL DEVELOPMENT, AFFILIATIONS, LICENSES

Harvard School of Public Health, Radiation Safety Officer Training for Laboratory Professionals

University of Chicago Booth School of Business, Strategic Laboratory Leadership Program (for FNAL & ANL)

American Physical Society, Member

Phi Beta Kappa, Member

US FCC Amateur Radio Operator - KM4OO