

## PETER JAMES NORRIS

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### RESEARCH AND DEVELOPMENT

Dynamic, creative researcher with an extensive physics and mathematics background, as well as comprehensive experience in private technical industry, educational and research environments.

- Possesses exceptional qualitative and quantitative analytical and critical reasoning skills.
- Participates in research and development experiments in alignment with team objectives and goals.
- Provides training and mentorship within laboratory and classroom situations.
- Exhibits exceptional problem solving abilities within unfamiliar situations.

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Leadership • Research • Planning • Metric Development / Analysis • Group Dynamic Analysis  
Scheduling • Motivation • Teaching / Mentoring • Qualitative / Quantitative Analysis  
Verbal / Written Communication • Curriculum Development • Database Development / Administration

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### PROFESSIONAL EXPERIENCE

#### **ECHOSTAR, Englewood, Colorado • 2008-2009**

Designer, developer and distributor of award winning advanced television set-top boxes and related programs for pay television providers, as well as performing satellite operations.

#### Education Specialist II

Instituted software development curriculum and classes, including DBS basics, Linux OS, bash and Makefile, scripting, C/C++ coding, debugging and testing, code inspection workshops, software configuration management, database structure/queries and OS Shell design in alignment with corporate needs. Consulted with Subject Matter Experts (SMEs) in developing software development class materials. Scheduled instructional space, and led classes. Trained other educators in class development, materials and teaching methods for software development classes. Documented, evaluated and reported student performance to management.

- Developed branded educational materials by authoring Visual Basic for Applications (VBA) macros to automate instructional material and report production.
- Collaborated with the Software Security Team in establishing Code Inspection Workshops (CIW), metrics and reports.
- Launched and maintained the SharePoint Code Inspection Workshop site for metrics recording.
- Met corporate needs by cooperating with the code management group, modifying CodeStriker DB and html front end.

#### **QUALXSERV (now Worldwide TechServices), Tewksbury, Massachusetts • 2007-2008**

A provider of technology deployment and field maintenance service in support of partner service events.

#### Field Service Technician

Conducted on-site evaluations and repairs for clients' Dell, IBM and Apple desktop and laptop computers in territories in Kansas and Colorado.

- Earned the #1 Field Service Technician ranking out of 16 for 10 weeks, including 6 consecutive weeks.

#### **SAGAR DENTAL, Manhattan, Kansas • 2004-2006**

A dental practice.

#### Web Designer / IT Consultant

Created 2 front-end websites for a ZIRCore User website, employing html, CSS, JavaScript, Perl, cgi-bin, DreamWeaver and Photoshop.

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### **SAGAR DENTAL (continued)**

Determined MySQL was the appropriate database back-end for the ZIRCore User website. Created the database with Zusers table having 42 columns and Zcard tables having 23 columns. Integrated the ZIRCore User database and the 2<sup>nd</sup> ZIRCore User website. Developed html-based database administrator webpage. Trained the office staff in use of the database administrator webpage. Used Apache as the ZIRCore User website server. Provided a wide range of IT consulting and support, including data backup, teleconferencing and personnel training. Procured, installed and integrated new hardware and software. Performed SEO and other web analytics.

- Deployed 1 static website and 1 active website with a MySQL back side.

### **SYKES ENTERPRISES, Manhattan, Kansas • 1998-2001**

A global provider of outsourced contact center services to leading companies worldwide.

#### Help Desk Technician / 1<sup>st</sup> Level Technician

Provided 1<sup>st</sup> Level telephone computer support. Authorized on-site tech dispatch with replacement parts and executed "hot" calls.

- Promoted to the Help Desk within 1 month of employment.
- Created an html-based set of troubleshooting flowcharts used by technicians and to train technicians.

## **RESEARCH EXPERIENCE**

### **UNIVERSITY OF KANSAS (KU) AND BROOKHAVEN NATIONAL LAB (BNL)**

**Lawrence, Kansas; Upton, New York • 1999-2002**

#### Graduate Research Assistant

Developed statistical thermodynamic models of particle flux for a Threshold Cherenkov Detector (TCD) for the Mid-Rapidity Spectrometer (MIDS) of the Broad Range Hadron Magnetic Spectrometers (BRAHMS) experiment at the Relativistic Heavy Ion Collider (RHIC). Simulated CERN's NA44's TCD as a possible TCD for MIDS. Accepted manufacturer parts and material bids, placed, and tracked orders for the new TCD after demonstrating the NA44 TCD was inadequate. Performed QA for delivered TCD materials and parts, rejecting and requesting replacements as appropriate. Machined, assembled, leak-chased and tested new TCD. Determined need and proposed a device for better measurement and maintenance of bias-current of the Silicon MicroStrip Detector (SMSD) of the MIDS. Participated in daily data acquisition shifts for BRAHMS that included regular monitoring of data acquisition and detector function, calibration and repair, shift record keeping and data entry. Developed web-based interfaces for various experimental needs, including power supply control, data acquisition, detector modeling, data display, modeling and analysis, as well as databases. Collaborated with the Kansas State University Electronic Design Lab in designing and manufacturing of bias-current devices (BCD) for SMSD. Participated in data reduction and statistical analysis of experiment data. Partnered in writing and editing notes, various papers and presented group reports based on experiment data.

- Determined the need for the MIDS BCD, and collaborated in their design, manufacture and installation.
- Partnered in the design and construction of the MIDS TCD.

### **KANSAS STATE UNIVERSITY (KSU) AND FERMI NATIONAL LAB (FNL)**

**Manhattan, Kansas; Batavia, Illinois • 1994-1996**

#### Graduate Research Assistant

#### **KSU**

Performed statistical analysis of Fermilab E791's data for  $f_0(980) \rightarrow K+K^-$  signal on Mac II, DecStation 5000s (Ultrix 4.X) and PCs, using FORTRAN, C/C++, PAW (CERN's Physics Analysis Workstation), PYTHIA and GEANT (CERN's HEP packages), Excel and Matlab. Reconstructed data in parallel on 3 farms of 74 DecStations. Simulated E791's detector. Modified PYTHIA statistical algorithms for realistic  $f_0(980) \rightarrow K+K^-$  generation.

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### **KANSAS STATE UNIVERSITY AND FERMI NATIONAL LAB (continued)**

Generated Monte Carlo simulations on 2 farms of 36 DecStations. Established rejection criteria (relative and absolute gain, quantum efficiency and noise), developed and implemented testing procedures for ~600 photomultiplier tubes (PMTs) to be installed in Fermilab (E815) NuTeV's calorimeter. Designed and built a light-tight box and filter-wheel to hold photographic filters to test PMT response to ten levels of light-attenuation in NuTeV calorimeter wave-shifting bars, and analyzed their frequency response. Engineered clear silicone-rubber "cookie" inserts to hold Kodak filter material on and protect the PMT face from wave-shifter bars. Managed a fellow graduate research assistant and 2 undergraduate students. Participated in NuTeV PMT testing.

#### **FNL**

Managed and participated in NuTeV PMT installation and balancing that required radioactive sources. Managed the upgrade of software and computer power supply control for NuTeV bending magnets. Established web-based interfaces for various experimental needs such as power supply control and data acquisition. Conducted an *in situ* radiation survey of the  $\pi^-$  beam-dump berm, collecting samples for laboratory analysis. Collaborated in daily test-beam and actual data acquisition shifts for NuTeV that included regular monitoring of data acquisition and detector function, detector calibration and repair, shift record keeping and data entry.

- Modified Pythia to accurately model the  $f_0(980) \rightarrow K+K^-$ .
- Earned an MS in Physics.
- Assisted in writing and editing various papers and group reports and notes based on experiment data.

### **BROOKHAVEN NATIONAL LAB (BNL), Upton, New York • 1993**

Participant: Department of Energy (DOE) Science & Engineering Research Semester Program (SERS)

Simulated and analyzed the output of a ring imaging Cherenkov detector (RICH) for the BRAHMS experiment at RHIC on DEC VAXStations, using FORTRAN, PAW, and optical ray tracing. Tested the performance of prototype pixilated photomultiplier tube (PMT) for RICH. Collaborated in data reduction and statistical analysis of experiment data. Presented group reports as needed using posters and MS PowerPoint. Assisted in writing and editing "In-Beam Tests of a Ring Imaging Cherenkov Detector..."

- Simulations of the RICH and testing the prototype resulted in multiple journal publications.
- Collaborated in writing and editing "In-Beam Tests Of A Ring Imaging Cherenkov Detector..." for *Nuclear Instrumentation and Methods*.

### **KANSAS STATE UNIVERSITY (KSU), Manhattan, Kansas • 1992**

Participant: National Science Foundation (NSF) Research Experiences for Undergraduate Program

Conducted statistical data analysis from a fragmentation of CH<sub>4</sub> due to impact of high velocity p+ experiment performed the previous summer by I Ben-Itzhak of relative cross-sections for various fragmentation channels.

- Presented the results of our analysis at the XI Applications of Accelerators in Research and Industry in Denton TX on November 6, 1992

### **TEACHING EXPERIENCE**

#### **METROPOLITAN STATE COLLEGE OF DENVER (MSCD), Denver, Colorado • 2008**

Adjunct Professor

- Developed and taught 2 sections of Introduction to Philosophy and 1 section of Introduction to Ethics, and created online instructional materials.

#### **UNIVERSITY OF COLORADO AT DENVER, Denver, Colorado • 2008**

Adjunct Professor

- Developed and taught Introduction to Ethics and College Physics (college algebra based), and created online instructional materials.

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**OTTAWA UNIVERSITY, Ottawa, Kansas • 2007**

Adjunct Professor

- Developed and taught College Physics (calculus-based) and its Lab, and created online instructional materials.

**BAKER UNIVERSITY (BU), Baldwin City, Kansas • 2002**

Instructor - Department of Math, Computer Science and Physics.

- Served as a replacement professor for General Physics III.

**KANSAS STATE UNIVERSITY (Minority Engineering Program), Manhattan, Kansas • 1999-2000**

Graduate Assistant / Tutor

- Tutored Minority Engineering Program students in Differential Equations, Engineering Physics and Calculus III.

**EDUCATION**

**Doctor of Philosophy Program in Philosophy – 34 Hours**  
**Doctor of Philosophy Program in High Energy Physics – 42 Hours**  
University of Kansas, Lawrence, Kansas

**Master of Art in Philosophy**  
University of Kansas, Lawrence, Kansas

**Master of Science in High Energy Physics**  
Kansas State University, Manhattan, Kansas

**Bachelor of Science in Physics**  
**Bachelor of Science in Philosophy**  
Metropolitan State College, Denver, Colorado

**PROFESSIONAL DEVELOPMENT**

Electrical Engineering – University of Colorado • Lean Six Sigma Courses

**COMPUTER COMPETENCIES**

Coding: FORTAN • C/C++ • JavaScript • Perl • PHP • VBA • HTML  
CSS • XML • Matlab • Simulink  
OS: Windows (95, 98, NT, XP) • Mac (9, 10, 1-5) • UNIX/Linux (bash/csh) • VAX/VMS  
Network: Telnet • Apache • cgi-bin • TCP/IP • LAN • WLAN • WAN  
Software: MS Office • Visio • Access • LaTeX • Adobe Suite • Mantis  
ClearCase • AutoCAD • MySQL

**PUBLICATIONS AND TALKS**

Published in peer-review journals and presented papers and posters at professional conferences in both physics and philosophy - full list of publications and talks available upon request

**AWARDS**

Who's Who Among Students in American Universities and Colleges  
Colorado Scholar's Award for Philosophy AYs 1991-1992, 1992-1993