

James A. Gerald

JGerald@deltastate.edu

Education

Johns Hopkins University

1995 PhD in Physics

- Worked with the Experimental High Energy Physics Group on the L3 Experiment at CERN in Geneva, Switzerland (1992 – 1995)
- JHU Graduate Research Fellowship (1992-1995).

1992 MA in Physics and Astronomy

- NSF Graduate Fellowship (1990-1991), JHU Graduate Teaching Fellowship (1991-1992).

Syracuse University

1993 PhD in Electrical Engineering

- Specialized in Computational Electromagnetics with Prof. Roger F. Harrington
- Completed a PhD thesis on the effect of a gridded ground plan on microwave circuits embedded in a ceramic substrate.
- Left SU for JHU in August 1990 and completed the SU PhD Thesis work while at JHU.
- NSF Graduate Fellowship (1988-1990).

1988 MS in Electrical Engineering

- Completed a Master's thesis on the reflection of incident radiation from apertures in cylindrical objects interconnected by microwave networks.
- SU Graduate Fellowship (1987-1988)

University of Mississippi

1987 BS in Electrical Engineering, *Summa Cum Laude*

- Worked as an Undergraduate Research Assistant on the design and implementation of data acquisition systems.
- Served on the Honors Senate for 4 years.
- Honors Scholar (1983-1987), Carrier Scholarship (1983-1987), Taylor Medal Recipient (1987).

Experience

Delta State University | 1003 W Sunflower Road, Cleveland, MS 38733

Assistant Professor of Physics *Aug 2014 – Present*

Primary responsibility for teaching the core physics courses at DSU as a part of the Department of Chemistry and Physics. Responsible for content development for Physics Laboratory courses.

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Responsible for Curriculum Development and planning for the department. Courses taught include Astronomy, Physics of Sound, Physics for Life Sciences, General Physics, Electronics, and Geometrical and Clinical Optics. In 2015, began teaching the dual-enrollment Physical World course for Bayou Academy with students getting college credit at Delta State.

CapitolMed | 1141 Ringwood Ave, Ste 7, Haskell, NJ 07420

Senior Account Manager *Oct 2008 – July 2014*

Provided program design and management capabilities for pharmaceutical companies and assisted them in managing their patient programs. Defined and designed the IT systems and medical logistics for the launch of a nation-wide fleet of mobile clinics. Brought a unique analysis perspective to medical and pharmaceutical data in conjunction with US Census data in order to help field sales personnel focus their efforts in the areas with the greatest relevant disease burden and to assist in defining the gaps in coverage for the sales force. Managed other proof-of-concept projects, assisted in sculpting projects for other contractors, and coordinated project methods and objectives as well as promotional materials with our clients' legal review teams. Managed direct call market research projects and teams and physician call centers. Analyzed and evaluated managed care reimbursement rates.

EqualNox Consulting | Yorktown, VA

President *October 2000 – October 2008*

Working with the Air Combat Command Surgeon General's Office, designed, developed, and fielded the first field capable Electronic Medical Record system intended for both field hospitals and smaller medical units down to a single medical technician deployed down-range. This system represented the first, and as of 2008, only medical software system to pass Air Force and DoD security testing. Supported 30+ deployed facilities with a team of 5 developers. Collected and analyzed over 500,000 medical records world-wide as well as occupation and environmental health data. Provided data driven modernization of the manpower profile for deployed medical units. Provided data driven modernization of the equipment and pharmaceutical profile for deployed units. Provided real-time analysis and surveillance of disease outbreaks. Worked closely with Public Health to manage troop health and manpower retention. Provided a proof-of-concept and demonstration of capability for detecting incident laser radiation at a variety of wavelengths.

CellAvant | Newport News, VA

Consultant *February 2006 – December 2006*

Assisted in the launch of CellAvant, a mobile application development company. Determined the direction of the branding, the logo, and platform choices. Assisted with early software development projects.

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Signal Corporation | Air Combat Command Surgeon General, Langley AFB, VA
Chief Scientist *October 1999* – October 2000

Performed a proof-of-concept demonstration of capability for a deployable electronic medical record. Expanded disease management protocols to include civilian populations under the care of Air Force clinics.

BTG | Air Combat Command Surgeon General, Langley AFB, VA
Chief Scientist *January 1998* – October 1999

Launched the first data driven disease management program for the US Air Force using the 18 clinics within Air Combat Command. Analyzed medical data from deployed locations and assisted in evaluating Electronic Medical Records for deployment.

Christopher Newport University | Newport News, VA
Assistant Professor *August 1997* – May 1998

Taught Electromagnetics, Electronics, and Computer Algorithms courses for the Department of Physics and Computer Science. Have occasionally assisted them as an adjunct professor teaching Introductory Physics Lab in 2004 and Optics in 2012.

University of Minnesota | Brookhaven National Labs, Long Island, NY
Postdoctoral Research Associate *February 1996* – August 1997

Managed a hyperbaryon experiment at BNL. Helped design and modernize the data acquisition system.

Johns Hopkins University | Geneva, Switzerland
Graduate Research Assistant *November 1992* – December 1995

Worked for the Experimental High Energy Physics Group on the L3 Experiment at CERN in Geneva, Switzerland. Providing modelling and simulation for new central tracking designs. Served as the L3 central tracking Shift Leader and expert on call. Served as the L3 Head Shift Leader managing the data acquisition team. Ported the Tau Physics group's analysis package from the Apollo to the HP-UX platform. Designed and authored a new data processing and analysis package for the Tau Physics group. Led the analysis of the Michele parameters in the tau system. Led the analysis of tau polarization.

Johns Hopkins University | Baltimore, MD
Graduate Teaching Assistant *August 1991* – November 1992

Taught the Electromagnetics course and managed the teaching assistants for the introductory Physics course.

James A. Gerald



DuPont | Wilmington, DE

Research Associate *May 1991* – August 1991

Worked as a consultant with the High Power Microwave Circuit group assisting in the design, development, and testing of high power microwave components embedded in ceramics.

Syracuse University | Syracuse, NY

Graduate Research Associate *August 1987* – August 1990

Developed novel mathematical and computational techniques for determining the effect of a gridded ground plane on microwave circuits. Simulated the reflection of incident radiation on apertures on a cylindrical surface backed by microwave networks. Earned both a Syracuse Graduate Fellowship and a NSF Graduate Fellowship.

Naval Summer Graduate Fellowship Program | Kirtland AFB, Albuquerque, NM

Graduate Research Associate *June 1987* – August 1987

Worked with US Air Force Applied Research Group at Kirtland, AFB providing mathematical and computational assistance in the modeling and simulation of high powered microwave pulse technology.

University of Mississippi | Oxford, MS

Undergraduate Research Assistant *August 1985* – May 1987

Worked on the design and development of data acquisition systems using GPIB technologies for the Department of Electrical Engineering.

Skills

- Program and Project Management
- System Design and Deployment
- Software Design and Development
- Software Deployment and Lifecycle Management
- Data Analysis and Knowledge Creation
- Proof-of-Concept and Demonstration of Capabilities
- Databases: MS SQL Server and SQL Query, MS Access
- Coding: Visual Basic (100,000+ lines of code), Fortran (100,000+ lines of code), C++
- Data Acquisition
- MS Project
- XML, HTML



Publications

High School Physics for Delta State E-Learning

J. Gerald, OpenStax-CNX Web site. <http://legacy.cnx.org/content/col12009/1.3/>, Jun 6, 2016.

Performance of the L3 plastic scintillating fibre calibration system

G. Alverson, J. Bao, P. Fisher, J. Gerald, A. Gougas, I. Leedom, A. Pevsner, C. Spartiotis, S. Reucroft, L. Taylor

Published in Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, Volume 380, Issue 3, 11 October 1996, Pages 555–561

Measurement of the Michel parameters and the average tau-neutrino helicity from tau decays in $e^+e^- \rightarrow \tau^+\tau^-$

L3 Collaboration (M. Acciarri et al.). Mar 1996. 15 pp.

Published in Phys.Lett. B377 (1996) 313-324

Tests of the charged weak current in correlated hadronic tau decays using L3 at LEP

James A. Gerald (Johns Hopkins U.). 1995. 134 pp.

UMI-96-17520, CERN-THESIS-98-007, CERN-THESIS-98-07, CERN-THESIS-98-7

Multiconductor transmission lines in multilayered dielectric media over a gridded ground plane

Gerald, James A. (1993). Electrical Engineering and Computer Science - Dissertations. Paper 216.

Mode extraction from an electromagnetic slow wave system

James A. Gerald, Dec. 1987.

Published in Universal Energy Systems, Inc., United States Air Force Graduate Student Summer Support Program, Volume 1 20 p (SEE N89-12754 04-31)

L3 Papers with a Significant Contribution

Large collaborations like L3 at LEP contain author lists numbering in the 100s. Of the 59 papers bearing my name as a part of that collaboration, I have selected to list only those to which I believe I made a significant contribution.

Measurement of the Michel parameters and the average tau-neutrino helicity from tau decays at LEP

L3 Collaboration (M. Acciarri et al.). Jul 1998. 15 pp.

Published in Phys.Lett. B438 (1998) 405-416

Measurement of the anomalous magnetic and electric dipole moments of the tau lepton

L3 Collaboration (M. Acciarri et al.). Mar 1998. 13 pp.



Published in Phys.Lett. B434 (1998) 169-179

Measurement of tau polarization at LEP

L3 Collaboration (M. Acciarri et al.). Feb 1998. 19 pp.

Published in Phys.Lett. B429 (1998) 387-398

Measurement of the weak dipole moments of the tau lepton

L3 Collaboration (M. Acciarri et al.). Feb 1998. 14 pp.

Published in Phys.Lett. B426 (1998) 207-216

Measurement of $D(s^- \rightarrow \tau^- \text{ anti-}\tau\text{-neutrino})$ and a new limit for $B^- \rightarrow \tau^- \text{ anti-}\tau\text{-neutrino}$

L3 Collaboration (M. Acciarri et al.). Dec 1996. 18 pp.

Published in Phys.Lett. B396 (1997) 327-337

Measurement of the lifetime of the tau lepton

L3 Collaboration (M. Acciarri et al.). Sep 1996. 14 pp.

Published in Phys.Lett. B389 (1996) 187-196

Measurement of the branching ratios $b \rightarrow e \text{ neutrino } X, \mu \text{ neutrino } X, \tau\text{-neutrino } X$ and $\text{neutrino } X$

L3 Collaboration (M. Acciarri et al.). Apr 1996. 27 pp.

Published in Z.Phys. C71 (1996) 379-390

One prong tau decays with neutral kaons

L3 Collaboration (M. Acciarri et al.). Apr 1995. 17 pp.

Published in Phys.Lett. B352 (1995) 487-497

Measurement of exclusive branching fractions of hadronic one space prong tau decays

L3 Collaboration (M. Acciarri et al.). Nov 1994. 15 pp.

Published in Phys.Lett. B345 (1995) 93-102

A Measurement of tau polarization at LEP

L3 Collaboration (M. Acciarri et al.). Sep 1994. 20 pp.

Published in Phys.Lett. B341 (1994) 245-256