

**NAME:** Jason W. Hinson

**PRESENT POSITION:** Post-Doctoral Research Associate, Purdue University.

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**PERSONAL:** Born on June 11, 1969 in Griffin, Georgia, U.S.A.  
Married Tabitha Louise Shellman on August 10, 1991.  
One Child, Hannah Louise Hinson, born September 29, 2000.

**EDUCATION:** B.S., physics and mathematics, University of Alabama in Huntsville (U.A.H.), 1991.  
M.S., physics, Purdue University, 1993.  
Ph.D., physics, Purdue University, 2001. Thesis advisor: Edward I. Shibata. Thesis title: Axial Vector and Pseudoscalar Hadronic Structure in  $\tau^- \rightarrow \pi^- \pi^- \pi^+ \nu_\tau$  Decays with Implications on Light Quark Masses.

**PREVIOUS POSITIONS:** Space Science Laboratory Assistant, Magnetospheric Branch of National Aeronautics and Space Administration's (N.A.S.A.) Marshall Space Flight Center through U.A.H. Physics Department, 1989–1991.  
Graduate Teaching Assistant, Purdue University, 1991–1993.  
Graduate Research Assistant, Purdue University, 1993–2001

**RECENT RESEARCH AREAS:** Experimental study of  $e^+e^-$  annihilations at high energy, especially the study of  $\tau^- \rightarrow \pi^- \pi^- \pi^+ \nu_\tau$  decays and their relationship to the light quark masses.  
Study of the  $dE/dx$  particle identification methods and upkeep of calibration constants at Cornell's CLEO particle detector.

**AWARDS AND HONORS:** Honored for the Highest Undergraduate Achievement in the College of Science, U.A.H., 1991  
Inducted into Sigma Pi Sigma (Physics Honor Society), 1990  
Received Gerhard B. Heller Memorial Scholarship, 1990  
National Collegiate Natural Science Award, 1990  
All-American Scholar Collegiate Award, 1990  
Inducted into Phi Eta Sigma (a Freshman Honor Society), 1988

**SUMMARY OF RESEARCH:**

1989–1991

As an undergraduate student at the University of Alabama in Huntsville I was a laboratory assistant employed by the Physics Department to work in N.A.S.A.'s Magnetospheric Branch at the Marshall Space Flight Center. There I worked with others in developing a list of calibration constants to be used on data from the retarding ion mass spectrometer aboard the Dynamic Explorer 1 satellite. This data was used by researchers worldwide to study the ion concentrations in the magnetosphere and plasmasphere.

1993–1994

During my first year as a graduate research assistant at Purdue University, I assisted in the development of a scintillating fiber charged particle tracking system to be used in the D0 experiment at Fermi National Laboratory. One of my specific tasks was to study the requirements of the high density scintillating fiber to waveguide fiber connectors needed for the construction. I developed and produced a prototype design for such a connector. I also studied the effects of radiation on some of the adhesives and composite carbon fiber materials to be used in the detector's construction, and I assisted in the study of precision placement of ribbon-like scintillating fiber assemblies onto carbon fiber cylinders.

1994–2001

In the summer 1994, I became a member of the Purdue group at Cornell's CLEO particle detector. My original work in that group included a study of the  $dE/dx$  particle identification method used at CLEO. I was in charge of the upkeep of calibration constants used for this identification method, and I worked with others at CLEO to investigate and better understand various aspects of the  $dE/dx$  identification being used.

My thesis research was also conducted during this time. It involved the study of about 145,000  $\tau^- \rightarrow \pi^- \pi^- \pi^+ \nu_\tau$  decays collected by the CLEO detector. I was able to fit the complicated substructure in the decay to a model involving 9 complex fitting parameters, producing a satisfactory description of the decay. I was also able to use information involving the pseudoscalar component in the decay to help place a lower bound on the average of the up and down quark masses as they appear in the QCD Lagrangian.

2001–present

For the summer of 2001, I have been hired as a post-doctoral research associate by Purdue University so that I may complete a paper involving my thesis research.