CURRICULUM VITAE

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BIOGRAPHICAL DATA

Date of birth: September 28^{th}, 1970
Place of birth: Cairo, Egypt
Nationality: Egyptian

EDUCATION

1991 Bachelor of Arts	1993 Master of Science	1999 Doctor of Philosophy
Major: Physics	Major: Physics	Experimental High Energy Physics
University of Colorado	Purdue University	Purdue University
Boulder, CO 80503.	West Lafayette, IN 47907.	West Lafayette, IN 47907
GPA: 3.98/4.0	GPA: 3.92/4.0	GPA: 3.92/4.0

Ph.D. Thesis Title : *" A Study of Semileptonic and 2-Body Decays of Charm Strange Baryons, a Search for CP Violation in Ξ Hyperon Decays and a Study of Surface Treated Planar Microstrip Gas Chambers."*
Major Professor : Prof. Ian P. J. Shipsey

STUDY ABROAD

July 8-18, 1997. International School of Physics "Enrico Fermi" summer course CXXXVII on "Heavy Flavor Physics: A Probe of Nature's Grand Design" in Varenna, Italy.

TEACHING EXPERIENCE

Fall 91 - Spring 93: *Teaching assistant, Physics Department, Purdue University, West Lafayette, IN 47907.*

- Taught sophomore physics labs and recitations for pharmacy and medical students.
- Taught 3^{rd} semester Electricity and Magnetism recitations for electrical engineering majors.
- Graded graduate level quantum mechanics.

RESEARCH EXPERIENCE

Sep 28th, 1998 - present : *Research Associate, Fermi National Accelerator Laboratory, Particle Physics Division/CDF collaboration, Batavia, IL 60510-0500.*

Spring' 02 - Present: Physics analysis at CDF Run II

- **Measurement of the J/ψ and $b \to J/\psi X$ production cross-sections.**
  Initial measurements of the J/ψ and b-hadron inclusive cross-sections carried out during Run I of the Fermilab Tevatron collider (1992-1995) only probed xthe cross-sections for transverse momenta greater than 5 GeV/c. These measurements represent only 10% and 23% of the total inclusive J/ψ and b-hadron cross-sections respectively. Using the extended reach of the CDF Run II muon trigger down to 1.5 GeV/c, a group of 8 CDF members headed by myself and Dr. Ting Miao of FermiLab have completed **the first measurement of the inclusive J/ψ and b-hadron cross-sections at low transverse momenta** covering the range from 0 GeV/c to 20 GeV/c. This result is the **first measurement of the total production cross-sections of J/ψ and b-hadrons in the central rapidity region produced in $p\bar{p}$ collisions**.
  - The preliminary measurement of the CDF Run II total inclusive J/ψ cross-section in the range $|y| < 0.6$ has been presented at the annual meeting of the American Physical Society (APS2003) in April, 2003. Description of this research can be found at http://www-cdf.fnal.gov/physics/new/bottom/030327.blessed-jpsixsec/xsec_html
  - A preliminary measurement of the inclusive central b production cross-section down to transverse momenta of $p_T = 0$ GeV/c has been presented at the 2^{nd} Workshop on Quarkonium, September 20-22, 2003 at Fermi National Accelerator lab.
- **Measurement of the Λ_b lifetime and decay dynamics at CDF**
  In addition to the cross-section measurements mentioned above, I am currently overseeing the efforts of 2 graduate students in the measurement of the Λ_b lifetime in the hadronic decay mode $\Lambda_b \to J/\psi\Lambda$ and the semileptonic decay mode $\Lambda_b \to \Lambda_c l\nu$. The latter analysis is particularly challenging given the lifetime bias of the CDF Run II silicon secondary vertex trigger.
  - A preliminary measurement of the Λ_b lifetime in the decay $\Lambda_b \to J/\psi\Lambda$ was presented at the 2003 International Europhysics Conference on High Energy Physics in Aachen, Germany (July 17th-23rd, 2003).
- **Search for direct CP violation in the decay of the bottom baryon, $\Lambda_b^0 \to p^+\pi^-$:**
  Co-authored a proposal to search for direct CP violation in the decay of the bottom baryon, $\Lambda_b^0 \to p^+\pi^-$, using the CDF RUN II data. This decay mode is complimentary to the measurement of direct CP violation in $B \to \pi\pi$ (and is accepted by the same trigger), with the added experimental advantage of easier particle identification.

Fall '02 - Winter '03: Co-convener of the B-Physics data validation group.

In Oct '02, a data validation sub-group of the B physics group was officially formed and charged with monitoring and validating all 3 main datasets to be used by the 3 B physics subgroups: J/ψ, hadronic and semileptonic. I began my tenure as co-convener of this group on Oct 11, 2002.

Fall '01 - Fall '02: Co-convener of the J/ψ B-Physics analysis sub-group.

The J/ψ group consists of 45 members of the B-Physics analysis group at CDF. The $J/\psi \to \mu\mu$ dataset is obtained from the CDF Level 1 di-muon hardware trigger. This dataset along with the B hadronic and semileptonic datasets obtained from the Level 2 Silicon Vertex Trigger (SVT) are the 3 main datasets for the CDF B-group Run II analysis. In particular, this dataset is crucial for the measurement of b hadron lifetimes, branching fractions, and the production cross-sections of both b hadrons and quarkonia (J/ψ, Υ, χ_c and η_b). The J/ψ sample is also

the base dataset for the flagship measurements of B_s mixing using $B_s \to J/\psi\phi$ and the CKM angle $\sin 2\beta$ in $B_d \to J/\psi K_s^0$.

During my tenure as co-convener, the group successfully completed the following tasks, in which I was a key participant:

- Development of $J/\psi \to \mu\mu$ reconstruction tools
- Optimization of the Level 1 di-muon trigger performance and measurement of its efficiency
- Validation of the J/ψ dataset for B physics analysis.
- Validation and optimization of low momentum muon reconstruction with transverse momenta in the range 1.35 to 5 GeV/c using the muons from J/ψ.

In addition, using the J/ψ dataset I developed several software tools to conduct tracking studies of the CDF Run II detector and supervised three graduate students in completing studies of the SVXII and COT (Central Outer Tracker of CDFII) tracking performances.

The J/ψ group is now actively involved in finalizing many new physics analysis for publication based on a well understood data sample and trigger.

Fall '01 - present: CDF Internal Reviewer.

- Internal CDF reviewer of the new CDF Run I exclusive B lifetime analysis, published as Phys. Rev.**D 65**:092009,2002.
- Member of the CDF standing review committee charged with monitoring the CDF RUN II Luminosity measurement.

Summer '01 - Jan '02: Silicon vertex detector installation and operations expert.

- Key participant in the final installation of the silicon detector in the CDF Run II collision hall in May/June 2001.
- Leading expert on-call during the initial operation of the silicon vertex detector systems from June 2001 to Jan 2002. My area of expertise covered the SVXII DAQ, silicon hardware and high voltage system operation.

Fall' 98 - Summer '01: Silicon vertex detector data acquisition system commissioning.

- Key participant in the commissioning of the Silicon Vertex Detector (SVXII) at the Collider Detector Experiment at Fermilab (CDF).
- SVXII data acquisition system (DAQ) hardware and software expert.
- Played a leading role in the debugging, setting up and maintaining of several DAQ test-stands used for production testing of various silicon detector components. The SVXII DAQ teststands are comprised of VME readout boards with a master VME controller running VxWorks. Communication between the JAVA DAQ control code and the VME crates is handled via an RPC package based on CORBA 2.0.
- Modified and wrote new sections of the JAVA based monitoring code used on the DAQ test-stands to debug SVXII readout chip circuits (hybrids) and silicon sensor (ladders) performance.
- Assembled and operated the DAQ and test components used in the measurement of the single event upset rate (SEU) of the SVX3D silicon readout ASIC using the 63 MeV proton beam at the University of California, Davis cyclotron.

Summer '99 - Summer' 00: Co-leader of the SVXII Compact Port Card production testing and commissioning effort.

In collaboration with Dr. Yuri Gotra from the University of Pittsburgh, I supervised the final stage of debugging and testing of the Compact Port Card (CPC) boards, a component of the CDF Silicon vertex detector optical data acquisition system:

- Contributed to the determination of the final modifications to the original design.
- Took a leading role in setting up and managing a production testing line involving several graduate and undergraduate students.
- Responsible for data analysis of CPC data acquisition performance before and after irradiation to asses the expected lifetime of the board in the CDF RUN II experiment.

Summer '00 - Winter '00: Co-leader of the SVXII prototype engineering run test.

Co-lead the effort to assemble, test, install and operate SVXII Barrel 4, a working prototype of 6% of the final CDF Silicon system, in the CDF Run II detector during the 6 week engineering run in October/November, 2000. The engineering run was the first attempt at operating the Tevatron accelerator and many sections of the CDF detector simultaneously. At the time, the final SVXII detector was being assembled and could not be integrated with the rest of the CDF detector. With the exception of the cooling and high voltage interlocks, all other components of the SVXII system used during the engineering run were in their final design phase.

The Barrel 4 integration in the Run II CDF engineering run was successful in addressing many issues prior to the assembly and integration of the full silicon detector. In particular:

- Synchronization of the SVXII DAQ with the rest of the CDF detector and the Tevatron.
- Establishing the SVXII online calibration and monitoring framework.
- First in-situ test of the optical readout system.
- Established the SVXII readout chip operating parameters that are still currently in use in the final system.
- Reconstruction of the first silicon charge clusters and tracks in the CDF Run II detector.

Summer 1995 - Fall 1998: *Visiting Fellow, Laboratory of Nuclear Science, Cornell University, Ithaca, NY 14853.*

Data analysis at the CLEO experiment, Cornell University: At CLEO I concentrated on the analysis of the decay dynamics of charm strange baryons to test HQET (Heavy Quark Effective Theory) in heavy to light quark transitions and measure CKM matrix elements. To that end I completed the following key physics analysis:

- **First evidence for the semileptonic decay of the doubly strange charm baryon Ω_c at an e^+e^- collider**.
- **First measurement of parity violation in the hadronic decay of the charm strange baryon $\Xi_c \to \Xi\pi$**. For the $\Xi_c \to \Xi\pi$ measurement, developed a technique to study the decay angular asymmetry using two detached vertices. This is the first study of the decay asymmetry of a weakly decaying charm baryon via a 3 step decay chain where each daughter baryon decay violates parity. Developed an unbinned log likelihood fitting technique to measure the asymmetry in $\Xi_c \to \Xi\pi$ using both the decay angle of the Λ from Ξ and the decay angle of the proton from Λ. This method significantly reduced the error on the measurement of the Ξ_c asymmetry parameter.

Calibration constants librarian, CLEO collaboration:

- Maintained and updated the online and off-line calibration constants database and associated software for the CLEO detector using the CERN ZEBRA package.
- Automated constants submission and installation using the UNIX *sh* command shell and PERL scripts.
- Created a web page with instructions, updated information on constants status and online log files.
- Updated and rewrote instruction manuals for maintaining CLEO constants.

Summer 1992 - Fall 1998: *Research assistant, Physics Department, Purdue University, West Lafayette, IN 47907.*

Microstrip Gas Chambers: At Purdue univeristy, I conducted R&D on Microstrip Gas Chambers (MSGC), a gas ionization detector comprised of thin metal strips etched on an insulating surface of glass or plastic. I played a key role in developing the MSGC research group at Purdue. My key achievements were:

- Tested and measured short term electrical performance and breakdown properties of MSGCs made with different substrate materials and different manufacturing techniques.
- First measurement of gas gain suppression in plastic MSGCs with low surface resistivity.
- First 2-D image of a double hole collimator with a plastic MSGC.
- Played a leading role in the design and set up of an X-ray system to measure the long term radiation aging properties of plastic MSGCs and passivated glass MSGCs.

COMPUTING EXPERIENCE

Familiar with C, FORTRAN, JAVA and C++ programming languages, UNIX and OS/2 operating systems, PAW (Physics Analysis Workstation) and designing web pages using HTML.

CLEO System Librarian for a stand-alone cluster of UNIX workstations at Purdue University.

PRIMARY PUBLICATIONS AS PRINCIPAL AUTHOR [1]

- "Measurement of the J/ψ Meson and b Quark Production Cross Sections in $p\bar{p}$ Collisions at $\sqrt{s} = 1960$ GeV" (in preparation).
- J. Andresen, M. Bishai *et al.*, "The Port Card for the Silicon Vertex Detector Upgrade of the Collider Detector at Fermilab". IEEE Transactions on Nuclear Science, Vol. 48, No. 3 (June 2001) 504-508.
- Cleo Collaboration (S. Chan *et al*), "A Measurement of the Decay Asymmetry Parameters in $\Xi_c^0 \to \Xi^-\pi^+$". Phys. Rev. D63 (2001) 111102.
- G.P. Grim, M. Bishai *et al.*, "Measurement of SEU Cross-sections in the CDF SVX3 ASIC using 63-MeV Protons". Nucl. Instrum. Meth. A447 (2000) 160-166.
- Cleo Collaboration (D.E. Jaffe *et al.*), "Search for Direct CP Violation in Cascade Hyperon Decay", hep-ex/0009037.
- M. Bishai *et al.*, "Micro Strip Gas Chambers Overcoated with Carbon, Hydrogenated Amorphous Silicon, and Glass Films". Nucl. Instrum. Meth. A400 (1997) 233-242

[1] Postscript/PDF copies available at http://www-cdf.fnal.gov/~bishai/research.html#papers

- M.R. Bishai *et al.*, "Performance of Microstrip Gas Chambers Passivated by Thin Semiconducting Glass and Plastic Films". Nucl. Instrum. Meth. A365 (1995) 54-58.

PUBLISHED CONFERENCE PROCEEDINGS [1]

- M. Bishai (for the CDF II Collaboration), "Beauty and Charm Physics in CDF Run II". FERMILAB-CONF- Proceedings of the IV International Symposium on LHC Physics and Detectors (LHC2003), FERMILAB, Batavia, May 1-3 (2003).
- M. Bishai, "Heavy Quark Production at CDF". FERMILAB-CONF-02/315-E. Published Proceedings of the 14th Topical Conference on Hadron Collider Physics (HCP 2002), Karlsruhe, Germany, September 29-October 4 (2002).
- T. Adams, M. Bishai *et al.*,"Young Physicists' Forum". Proceedings of the SNOWMASS 2001 Workshop on the Future of Particle Physics, Snowmass, CO June 29 - July 21 (2001).
- M. Bishai, "SuperSymmetry Searches at the Tevatron". FERMILAB-CONF-01-052-E. Proceedings of the Cairo International Conference on High Energy Physics, Cairo, Egypt 9-14 January (2001). Ed. S. Khalil, Rinton Press, Princeton, NJ (2001).
- J. Andresen, M. Bishai *et al.*, "The Port Card for the Silicon Vertex Detector Upgrade of the Collider Detector at Fermilab". FERMILAB-CONF-00-262-E. Proceedings of the IEEE Nuclear Science Symposium, Lyon, France October 15-20 (2000).
- G.P. Grim, M. Bishai *et al.*, "Measurement of SEU Cross Sections in the CDF SVX3 ASIC Using 63 MeV Protons". Proceedings of the 8th International Workshop on Vertex Detectors, VERTEX99, Texel-Netherlands, 20-25 June (1999).
- M. Bishai *et al.*, "A Measurement of the Decay Asymmetry Parameter in $\Xi_c^0 \to \Xi^-\pi^+$ and $\Xi^- \to \Lambda\pi^-$ and a Search for Direct CP Violation in Hyperon Decays". CLEO CONF 98-16, ICHEP98 1071 (1998). Proceedings of the 29th International Conference on High Energy Physics UBC, Vancouver, B.C. Canada 23-29 July (1998). Eds Alan Astbury, David Axen, and Jacob Robinson, World Scientific, Singapore (1999).
- M. Bishai *et al.*, "First Measurement of the Ξ_c^0 Decay Asymmetry Parameter in $\Xi_c^0 \to \Xi\pi$". Proceedings of the 9th Meeting of the Division of Particles and Fields of the American Physical Society, Minneapolis, MN August 11-15 (1996). Eds. K. Heller, J.K. Nelson and D. Reeder, World Scientific, Singapore (1998).
- CLEO Collaboration (R. Balest *et al.*), "First Measurement of the Ξ_c^0 Decay Asymmetry Parameter in $\Xi_c^0 \to \Xi\pi$". CLEO CONF 96-26 ICHEP-96 PA05-89 (1996). Proceedings of the 28th International Conference on High Energy Physics, Warsaw, Poland 25-31 July (1996). Eds. Z Ajduk and A K Wroblewski, World Scientific, Singapore (1997).
- M. R. Bishai *et al.*, "Performance of Microstrip Gas Chambers Passivated by Thin Semiconductcting Glass and Plastic Films." Proceedings of the 27th International Conference on High Energy Physics, Glasgow, Scotland, Jul 20-27 (1994). Eds P.J. Bussey and I.G. Knowles, IOP (1995) 1151-1154.
- M. R. Bishai *et al.*, "Performance of Microstrip Gas Chambers Passivated by Thin Semiconducting Glass and Plastic Films". Proceedings of the 8th Meeting Division of Particles and Fields of the American Physical Society, Albuquerque, NM August 2-6 (1994). Ed. Sally Seidel, World Scientific, Singapore (1995) 1919-1923.

- M. Bishai *et al.*, "Plastic MSGCs with Two-Sided Readout". Proceedings of the 2nd International Workshop on Micro-strip Gas Chambers, INFN Legnaro, Italy, October 13-14 (1994), Eds G. Della Mea and F. Sauli, Ed. Progetto, Padova, (1995) 12-21.
- I. Shipsey, "Observation of Gain Suppression in a Plastic Substrate MSGC". Proceedings of the International Europhysics Conference on High Energy Physics, HEP 93, Marseille, Eds. J. Carr and M. Perrottet, Editions Frontieres, Gif-Sur-Yvette Cedex, France (1994).

INTERNAL CLEO DOCUMENTS AS PRINCIPAL AUTHOR

- M. Bishai, "How to do Analysis at CLEO. A Brief Intro. to the Technicalities", a manual for new Purdue graduate students participating at the CLEO experiment, Cornell University, Ithaca, NY 14853.
- M. Bishai *et al.*, " First Measurement of the Ξ_c^0 Decay Asymmetry Parameter in $\Xi_c^0 \to \Xi\pi$". CLEO CBX 96-45 (1996).
- M. Bishai *et al.*, "Evidence for $\Omega_c \to \Omega\ell\nu$ in e^+e^- Annihilation". CLEO CBX 95-21 (1995).

INTERNAL CDF DOCUMENTS AS PRINCIPAL AUTHOR

- M. Bishai,*et al.*, " Measurement of the b-Hadron Inclusive Cross-section in CDF Run II using $H_b \to J/\psi X$".
  CDF/PHYS/BOTTOM/CDFR/6285 (8/4/2003)
- R. Madrak, M. Bishai,*et al.*, "Measurement of the Λ_b Lifetime in the decay mode $J/\psi\Lambda$".
  CDF/PHYS/BOTTOM/CDFR/6393
- M. Bishai *et al.*, "Measurement of the Run II Inclusive J/ψ Cross Section".
  CDF/PHYS/BOTTOM/CDFR/6288 (3/5/2003)
- M. Bishai *et al.*, "Optimization of Silicon Track Selection for Run II B-Fraction Measurement"
  CDF/PHYS/BOTTOM/CDFR/6272 (1/16/2003)
- Kai Yi, M. Bishai *et al.*, "Study of $\mathbf{\Lambda_b \to \Lambda_c\ l\ \nu}$ at Run II"
  CDF/ANAL/BOTTOM/CDFR/6160 (10/19/02)
- M. Bishai *et al.*, "Measurement of relative L3/Offline tracking efficiency".
  CDF/DOC/BOTTOM/CDFR/6144 (10/7/02)
- M. Bishai *et al.*, "Run-II Dimuon Trigger Optimization and Efficiency Measurement".
  CDF/DOC/BOTTOM/CDFR/6004 (6/19/02)
- M. Bishai *et al.*, "COT and SVXII Tracking Performance".
  CDF/DOC/TRACKING/CDFR/5931 (2002).
- Kai Yi, M. Bishai *et al.*, "Studies of CDF SVXII Stereo Tracking Performance using J/$\psi \to \mu\mu$".
  CDF/DOC/TRACKING/CDFR/5896 (2002).
- J. Andresen, M. Bishai *et al.*, "Radiation Hardness of The Compact PortCard for the CDF Silicon Tracking Detector Upgrade".
  CDF/PUB/PRODUCTION/PUBLIC/5535 (2001).
- M. Bishai *et al.*, "On the Feasibility of Measuring CP Violation in Λ_b Decays in Run II".
  CDF/DOC/BOTTOM/PUBLIC/5498 (2000)
- G.P. Grim *et al.*, "Measurement of SEU Cross Sections in the SVX3 ASIC Using 63MeV Protons ". CDF/DOC/TRACKING/GROUP/5062 (1999).

- M. Bishai *et al.*, "An SVX3D Chip User's Companion". CDF/PUB/SEC_VTX/PUBLIC/5167 (1999).

CONFERENCE PRESENTATIONS/INVITED TALKS [1]

- "Beauty and Charm Production at the Fermilab Tevatron" Invited talk, Brookhaven National Laboratory's Particle Physics Seminar, Upton, NY, Feb 5th (2004).
- "Mystery Solved? Why are there so many Beauty quarks produced in hadron colliders?" Invited talk, Kansas State University Physics Department Colloqium, Manhatten, KS, Jan 29th (2004).
- "Beauty and Charm Production at the Fermilab Tevatron" Invited talk, Fermilab's Joint Theoretical and Experimental Physics Seminar (Wine and Cheese), Batavia, IL, Dec 5th (2003).
- "Beauty and Charm Production at the Fermilab Tevatron" Invited talk, John Hopkins University High Energy Physics Seminar, Baltimore, MA, Nov 19th (2003).
- "Beauty and Charm Production at the Fermilab Tevatron" Invited talk, Jefferson National Accelerator Lab. Seminar, Newport News, VA, Sep 29th (2003).
- "Beauty and Charm Physics in CDF Run II". IV International Symposium on LHC Physics and Detectors (LHC2003), FERMILAB, Batavia, May 1-3 (2003).
- "Heavy Quark Production in CDF". 14th Topical Conference on Hadron Collider Physics (HCP 2002), Karlsruhe, Germany Sep 29 - Oct 5 (2002).
- "B Physics in CDF Run II". American Physical Society Division of Particles and Fields Meeting (DPF 2002), College of William and Mary, Williamsburg, VA May 23-28 (2002).
- "The CDF Si Data Acquisition System for Run II". International Conference on Advanced Technology and Particle Physics, Como, Oct 15 - 19 (2001).
- "Overview of the CDF Run II Si System". Snowmass 2001 Workshop on the Future of Particle Physics, Snowmass, CO, June 30-July 21 (2001).
- "Tales from CDF Si Part XXX - The Data Acquisition System". Fermilab FOOD FOR THOUGHT series June 19th (2001).
- "B Physics at CDF". Poster presentation at the Department of Energy Annual Review, Fermi National Accelerator Lab. March 6th, 2001
- "SuperSymmetry Searches at the Tevatron". Cairo International Conference on High Energy Physics. Cairo, Egypt 9-14 January (2001).
- "CLEO Results on Charmed Baryon Semileptonic and 2 Body Hadronic Decays". Presentation at Fermi National Accelerator Lab. Feb 17, 1998
- "A First Measurement of the Ξ_c^0 Decay Asymmetry Parameter in $\Xi_c^0 \to \Xi\pi$". American Physical Society Division of Particles and Fields Meeting (DPF '96), Minneapolis, August 10-15 (1996).
- "A First Measurement of the Ξ_c^0 Decay Asymmetry Parameter in $\Xi_c^0 \to \Xi\pi$" American Physical Society Annual Meeting (APS '96), Indianapolis, May 2-5 (1996).
- "Charm Baryon Semileptonic Decays at CLEO". BARYONS 95, Sante Fe, Oct 2-7 (1995).
- "Preliminary Evidence for $\Omega_c \to \Omega\ell\nu$ in e^+e^- Annihilation". American Physical Society Anuual Meeting (APS '95), Washington DC, April (1995)
- "Performance of Microstrip Gas Chambers Passivated by Thin Semiconducting Glass and Plastic Films". American Physical Society Division of Particles and Field Meeting (DPF '94), Albuquerque, NM August (1994).

AWARDS AND DISTINCTIONS

- Fall '87 - Spring '89. Dean's List, American University in Cairo, Cairo Egypt.
- March 7th, 1991. Certificate for Outstanding Academic Excellence, Fall Semester, 1990. University of Colorado Housing Department, Boulder CO 80309.
- May 1991. B.A.Physics, with distinction. University of Colorado, Boulder, CO 80309.
- April 20th, 1994. Winner of the 1994 Sigma Xi graduate student research competition (Physical Sciences category). Purdue University, West Lafayette, IN 47907.
- July 8-18, 1997. Scholarship from the Societa' Italiana Di Fisica (Italian Physical Society) to attend the International School of Physics "Enrico Fermi" summer course CXXXVII on "Heavy Flavor Physics: A Probe of Nature's Grand Design" in Varenna, Italy.
- April 26th, 1999. TautFest Award for Outstanding Thesis in High Energy Physics. Purdue University, West Lafayette, IN 47907.
- April 26th, 1999. Lijuan Wang Memorial Award for Outstanding Female Student. Purdue University, West Lafayette, IN 47907.

ACTIVITIES

- Fall 93 - Spring 1994. Secretary, Women in Physics Group, Purdue University, West Lafayette, IN 47907.
- 1997. Co-author of "A Commentary on the Status of High Energy Physics by Young Scientists. Report from CLEO/CESR" presented to the HEPAP (High Energy Physics Advisory Panel) sub-panel at Brookhaven Natonal Lab, September 1997. This commentary was used as input to the report of the "High Energy Physics Advisory Panel's Subpanel on Planning for the Future of U.S. High-Energy Physics", U.S. Department of Energy, Office of Energy Research, Division of High Energy Physics, February 1998, DOE/ER-0718. [2].

[2]Postscript copy available at http://www.physics.purdue.edu/~bishai/bio_resarch.html#papers

REFERENCES

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