

# BRYAN GMYREK

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**Objective** Ph.D. scientist with a passion for programming seeks to apply scientific, data analysis, and programming skills to solve interesting problems.

## Education

- University of Arizona, Tucson, AZ  
**PhD Physics, Thesis title: “Measurement of the W Boson Helicity in Top quark Decays” August 2007**
- Boston University, Boston, MA  
**MA Physics, January 2001**
- University of Massachusetts, Amherst, MA  
**BS Physics, Mathematics Minor, *Cum Laude*, May 1999**

## Experience

- **Graduate Research Associate**, Fall 2002 - Present  
University of Arizona High Energy Physics Group, Tucson, AZ  
Fermi National Accelerator Laboratory, Batavia, IL
  - Devise and implement methods to analyze data from proton/anti-proton collisions recorded at the Fermilab D0 particle detector.
  - Use statistical methods and Monte Carlo simulations to discriminate signal from background and measure physical quantities.
  - Create visual representations of data using ROOT, a C++ Data Analysis Framework.
  - Communicate and collaborate with researchers at Arizona and Fermilab via presentations, meetings and emails.
  - Document research methods and findings in laboratory notebooks, internal papers, my PhD thesis, and international journals.
  - Present research findings via videoconference and in person at Fermilab and international conferences.
- **Internet Programming**, Fall 2001 - Present  
Independent Contractor, Tucson, AZ
  - Communicate directly with clients to design the optimal solution for their requirements.
  - Plan, manage, and conduct all phases of the project.
  - Design SQL databases and web based user interface programs using UML.
  - Program web based applications using Linux, Apache, MySQL, Perl, PHP and JavaScript (LAMP and AJAX).
  - Administer e-commerce web sites and Linux servers. Responsible for programming, maintenance, marketing, upgrades, backups and security.

- **Laboratory Instructor**, Fall 2001 - Spring 2002  
University of Arizona Physics Department, Tucson, AZ
  - Taught physics students how to:
    - \* Design and conduct an experiment to test a hypothesis.
    - \* Record data in a laboratory notebook.
    - \* Estimate and account for statistical and systematic errors.
    - \* Interpret and present laboratory data and come to scientific conclusions.
  
- **Internet Researcher**, Spring 2001 - Summer 2001  
Inceptor, Inc. , Maynard, MA
  - Wrote programs in Perl to analyze web site traffic.
  
- **Graduate Research Assistant**, Summer 2000  
Boston University Physics Department, Boston, MA
  - Wrote a statistical physics program in C to determine how to minimize the amount of a chemical that must be sprayed on a surface in order to neutralize a substance on the surface in a minimum amount of time.
  
- **Laboratory Teaching Fellow**, Fall 1999 - Fall 2000  
Boston University Physics Department, Boston, MA
  - Taught discussion section for Physics 105 (introductory physics for Pre-Medical students) in Fall 1999 and Summer 2000.
  - Taught discussion section for Physics 233 (environmental physics) in Spring 2000.
  - Taught laboratory and discussion section for Physics 313 (modern physics for engineers) in Fall 2000.
  
- **Student / Researcher**, Summer 1999  
University of Massachusetts "Computing Our Universe" summer school, Amherst, MA
  - Attended lectures on astrophysics and numerical simulation methods in C.
  - Wrote and used C code to study the early universe with numerical methods.
  
- **Undergraduate Research Assistant**, Summer 1998 - Fall 1999  
Medium Energy Nuclear Physics Group, Amherst, MA
  - Assisted in the construction of a particle detector used at the MIT Bates Linear Accelerator.
  - Designed a device to hold a charged particle detector in place using AutoCAD.
  - Wrote C code to program electronics.

## Publications

- V. M. Abazov *et al.* [D0 Collaboration], "Measurement of the  $W$  boson helicity in top quark decay at D0," Phys. Rev. D **75**, 031102(R) (2007). <http://arxiv.org/abs/hep-ex/0609045>
- V. M. Abazov *et al.* [D0 Collaboration], "Search for Right-Handed  $W$  Bosons in Top Quark Decays," Phys. Rev. D **72**, 011104(R) (2005). <http://arxiv.org/abs/hep-ex/0505031>

## Public Speaking & Professional Associations

- **American Physical Society**, 1998 - Present
  - Presented research findings at the 2004, 2005 and 2006 April (and 2006 DPF) meetings.
- **WebmasterWorld.com**, 2001 - Present
  - Presented *How to Become a PHP/Perl Programmer* at the Vegas 2006 conference.
  - Attended the previous 4 conferences.
  - Moderator of Webmaster General and Databases forums.
- **Aircraft Owners and Pilots Association**, 2003 - Present
  - Earned a Private Pilot's License in Summer 2003.

## Skills

- **Programming Languages**
  - C/C++, Perl, PHP, Python, JavaScript/AJAX, BASH Shell Scripting, HTML, CSS, XML, Java.
- **Applications**
  - Word, Excel, PowerPoint, Google Analytics, LabVIEW, ROOT C++ Data Analysis Framework, Matlab, Mathematica, Apache, MySQL, CVS, SVN, SSH, SCP.
- **Operating Systems**
  - Red Hat Enterprise Linux, Fedora, Mac OS X, Windows.
- **Miscellaneous**
  - French reading proficiency (studied for two years in college).
  - Independent studies:
    - \* Listened to all of the “CS 162: Operating Systems and Systems Programming” Berkeley course lectures.
    - \* Books: *The Pragmatic Programmer*, *The Visual Display of Quantitative Information*, *The Cathedral and the Bazaar*, *Joel on Software*, *Hackers and Painters: Big Ideas from the Computer Age*, *UML for Mere Mortals*.