M. Joseph Hughes **824 9th Ave Apt 9 Huntington WV 25701**

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Objective:

Position in a scientific computing field.

Education:

M.S. Physical Science, Mathematics Minor Dec 2006.

Marshall University, Huntington, WV, 25755

Final GPA: 3.93

B.S. Integrated Science and Technology, Sociology Minor May 2003.

Marshall University, Huntington, WV, 25755

Final GPA: 3.80

Research and Presentations:

Developing a habitat probability model and researching the natural history of *Aconitum reclinatum*, a threatened West Virginia wild flower. May 2008 to present.

Determined periphyton, benthic macroinvertibrate, and metal ion associations on the Stony River using a customized implementation of the C-means clustering algorithm in Matlab. Oct 2005.

Designed and implemented a study of periphyton assemblages and water chemistry on the Stony River. Imported data into ArcView to show geo-spatial correlations. Presented at Sigma Xi Day, April 2005.

Studied Ambystomid populations and activity in a Mason county forested wetland. Aided primary researcher in creating population maps from GPS data in ArcView. Jul 2004 to Mar 2005.

Designed and implemented a experiment to overcome dormancy in *Drosera rotundifolia* seeds using gibberellic acid. Presented at Sigma Xi Day, April 2004.

Using multivariate analysis on morphological features of a species complex in the genus *Polygonatum*, identified sets of key features for keying species within the complex, created a distribution map using ArcView, and identified possible evidence for a change in current taxonomy. Jan-May 2004.

Using GIS methods and multivariate similarity functions, created a map of likely *Drosera rotundifolia* habitat from known habitat collected using GPS. Sept-Dec 2003.

Work Experience:

The Herald-Dispatch, Mar 2007 to May 2009

Web Developer/Database Administrator

- Develop data driven applications and sub-sites including the Events Calendar, Elections 2008, Obituaries, Movie Listings, Weather, Data Library, Legal Classifieds, and contests. I developed the database schema, am responsible for either creating and maintaining backend for data entry or automating entry from data files, and create the front end for users. For more information: <http://www.bramblewood.net/web.html>
- Develop the main news website within Zope 4 Media using MeTAL and TALes templating language.
- Assist in administration of our local webservers – IIS 6, Apache 2 on RedHat, and recently IIS 7
- Automate data transfer from the print CMS (NewsEditPro) to the online CMS (Zope)
- Work with the News department to develop data-driven online products to coincide with current feature articles.

Vandalia Research, Dec 2005 to Jan 2007

Project Manager, Science Education

- Developed six forensic science laboratory kits for undergraduate education. Edited, designed, and laid-out kit manuals. Developed laboratory procedures and evaluations. Sourced kit materials and

wrote protocols for kit manufacture. Oversaw all aspects of development and manufacturing.
- Developed the Lyle and Louise website <http://www.lyleandlouise.com>.
- Performed independent research on ideal primers in the human genome and fluid/temperature dynamics in an unevenly heated tube.

Marshall University, Aug 2003 to Aug 2005

Graduate Assistant
- Designed and co-developed Highland Park, an interactive web site for environmental science education, based on an existing software suite. <http://www.marshall.edu/highlandpark>.
- Collected and analyzed periphyton samples and water quality data.
- Collected riverbed topological data with a total station, and analyzed this data to create a 3-D riverbed model and flow regime map using MatLab and ArcGIS.
- Analyzed benthic macroinvertebrate data using Microsoft Access and ArcGIS.

Marshall University Research Corporation, Apr 2000 to Aug 2003

Web Designer and Content Developer
- Developed a Visual Basic application to teach middle and high school students the water chemistry of coal mine polluted streams as part of the software suite, Highland Park.
- Designed, implemented, and maintained the web site for the Nick J. Rahall II Appalachian Transportation Institute. (since redeveloped on Joomla).

Skills:

Scientific computing and analysis using MatLab, SAS, C++, and Microsoft Access and Excel.
Geographic information systems (GIS) analysis using ArcGIS, IDRISI, LandDesktop, and MatLab.
Surface surveying with a total station, GPS units, and other surveying equipment.
Knowledge of numerical analysis and artificial intelligence algorithms and their applications.
Web development using HTML, CSS, JavaScript, PHP, ASP and MySQL.
Experienced with methods and instrumentation used in environmental assessment.
Rapid Application Development using Microsoft Visual Basic.
Computer aided design using AutoCAD
Graphic design and publication layout using Adobe Create Suite
Ability to communicate technical concepts to people of various levels of technological expertise
Excellent public speaking skills, including leading workshops and discussion groups.

Activities and Honors:

Conceived and implemented web-based student to student textbook vending on a FreeBSD server
Member of Phi Eta Sigma Honors Society
John Marshall Scholar and Erma Byrd Scholar
Eagle Scout

References:

Dr. Michael Little
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One John Marshall Drive
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Dr. Dan Evans
Biological Sciences
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