

**Curriculum Vitae**  
*of*  
**Kelly S. Durst**

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### **Education**

|   |                          |
|---|--------------------------|
| <b>Master of Science in Geology</b><br><i>Michigan Technological University</i><br>Thesis: Erupted Magma Volume Estimates at Santiaguito<br>and Pacaya Volcanoes, Guatemala using Digital Elevation Models<br>GPA 4.0 | 2008<br>Houghton, MI     |
| <b>Graduate Certificate in Disaster Science</b><br><i>University of Richmond</i><br>GPA 3.4   | 2003<br>Richmond, VA     |
| <b>Master of Science in Environmental Studies</b><br><i>Virginia Commonwealth University</i><br>Thesis: Long Term Changes in Surface Water Quality and<br>Land Use in a Small Suburban Watershed<br>GPA 3.8           | 2003<br>Richmond, VA     |
| <b>Bachelor of Science in Geology</b><br><i>James Madison University</i><br>GPA 2.8   | 1999<br>Harrisonburg, VA |
| <b>Associate in Science</b><br><i>J. Sargeant Reynolds Community College</i><br>GPA 3.2   | 1997<br>Richmond, VA     |

### **Professional Experience**

|   |                                 |
|---|---------------------------------|
| <b>Geographic Information Systems Analyst</b><br><i>Hanover County Government</i> <ul style="list-style-type: none"><li>▪ Digitally updated street addresses, street centerline, tax parcel, base geography, public utility, and zoning data layers</li><li>▪ Coordinated the production and distribution of standard map products</li><li>▪ Designed custom maps and data requests from county staff and public</li><li>▪ Compiled and reported demographic data, including population/housing projections and estimates</li><li>▪ Provided technical support for ArcGIS and ArcView users</li></ul> | 2003 - 2005<br>Hanover, VA      |
| <b>Geographic Information Systems Specialist</b><br><i>Chesterfield County Government</i> <ul style="list-style-type: none"><li>▪ Viewed and interpreted graphical information for reproduction</li><li>▪ Upgraded and maintained Chesterfield County tax maps through GIS</li><li>▪ Designed and created maps on a daily basis for general public and private sector</li></ul>   | 1999 - 2003<br>Chesterfield, VA |

## Research Experience

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|---|---|
| <p><b>Graduate Research Assistant</b><br/> <i>Michigan Technological University</i></p> <ul style="list-style-type: none"> <li>▪ Analyze volume changes using DEMs at Santiaguito and Pacaya volcanoes</li> <li>▪ Analyze satellite imagery to determine mass and heat flux at volcanoes</li> <li>▪ Use ArcGIS, ERDAS Imagine, and ENVI for analysis</li> </ul> | <p>2005 - Present<br/> Houghton, MI</p> |
| <p><b>Research Assistant</b><br/> USGS – Cascade Volcano Observatory</p> <ul style="list-style-type: none"> <li>▪ Analyzed changes in Mt. St. Helens using GIS</li> <li>▪ Set-up GPS around Mt. St. Helens volcano</li> </ul>   | <p>Summer 2005<br/> Vancouver, WA</p>   |

## Teaching Experience

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|---|-------------------------------|
| <p><b>Teaching Assistant</b><br/> <i>Michigan Technological University</i><br/> <i>Environmental Geology Lab</i></p> <ul style="list-style-type: none"> <li>▪ Taught mapping skills with a focus on water quality, earthquakes, volcanoes, landslides, and flood plains</li> <li>▪ Developed and taught GIS curriculum for various environmental scenarios</li> </ul> | <p>2008<br/> Houghton, MI</p> |
| <p><b>Instructor</b><br/> <i>University of Richmond</i><br/> <i>Emergency Management Program Independent Study</i></p> <ul style="list-style-type: none"> <li>▪ Developed curriculum and taught GIS with a focus on developing a virtual disaster region in GIS to be used for teaching and table-top exercises in emergency management</li> </ul>                    | <p>2008<br/> Richmond, VA</p> |
| <p><b>Instructor</b><br/> <i>Michigan Technological University</i><br/> <i>Department of Geological and Mining Engineering and Sciences</i></p> <ul style="list-style-type: none"> <li>▪ Taught Natural Hazards (GE 4150) with emphasis on using GIS for natural disasters</li> <li>▪ Developed lecture and lab curriculum</li> </ul>                                 | <p>2007<br/> Houghton, MI</p> |
| <p><b>Instructor</b><br/> <i>University of Richmond, School of Continuing Studies</i><br/> <i>Emergency Management Program</i></p> <ul style="list-style-type: none"> <li>▪ Developed and taught independent study focusing on GIS in emergency management</li> </ul>   | <p>2007<br/> Richmond, VA</p> |
| <p><b>Instructor</b><br/> University of Richmond</p> <ul style="list-style-type: none"> <li>▪ Taught Technology for Emergency Management with a focus on using GIS in emergency management scenarios</li> </ul>   | <p>2004<br/> Richmond, VA</p> |

## Volunteer Work

### **Plans Section Chief**

American Disaster Reserve, 35<sup>th</sup> Brigade

2002 – 2005  
Richmond, VA

- Provided resource information to supporting agencies during disaster
  - Opened incident log
  - Analyzed incoming data
  - Activated emergency checklist
  - Submitted rapid format warning order
  - Created situation report
  - Organized status of available human and equipment resources

### **Volunteer**

Hurricane Isabel Emergency Operations Center

2003  
Chesterfield, VA

- Created maps of disaster area
- Provided relief for professionals in Emergency Operations Center
- Assisted citizens in need

## Professional Development/Training

- Introduction to ArcGIS 9 Geostatistical Analyst, 2007
- Building Geodatabases I and II, 2007
- Learning ArcGIS 3D Analyst, 2007
- Spectral Analysis with ENVI, 2006
- LAHAR-Z, 2005
- Spatial Analysis of Geohazards Using ArcGIS 8, 2005
- Basic HAZUS – MH, 2004
- Solving Disaster Management Problems Using ArcGIS 8, 2004
- Introduction to ArcGIS I, 2004
- Introduction to ArcGIS II, 2004
- Working with ArcGIS Spatial Analyst, 2004
- Master Microsoft Access, Basic Practices, 2004
- Mastering Microsoft Access, Advanced Practices, 2004
- Visual Basic Level 1, 2004
- Visual Basic Level 2, 2004
- Exploring the VBA Environment, 2004
- Conservation GIS Using ArcView 3.x, 2002

### **Emergency Management Institute Independent Study Courses:**

- Emergency Preparedness USA, 2003
- Building for the Earthquakes of Tomorrow: Complying with Executive Order 12699, 2003
- Basic Incident Command System, 2003
- Principles of Emergency Management, 2003
- The Role of Volunteer Agencies in Emergency Management, 2003
- Emergency Manager: An Orientation to the Position, 2003

### **Related Coursework**

#### **Environmental Studies:**

- Environmental Remote Sensing
- Environmental Chemistry
- Spatial Analysis
- GIS
- Environmental Law
- Environmental Planning
- Ecological Risk Assessment
- Statistical Methods
- Environmental Research Methods

#### **Disaster Science:**

- Economic Impacts of Disasters
- Politics of Disasters
- Disaster Characteristics and Physical Impacts
- History of Emergency Management and Organizational Theory

#### **Geology:**

- Super Volcanoes
- Volcanology
- Planetary Geology
- Geophysics
- Geochemistry of Natural Waters
- Petrology
- Structural Geology
- Stratigraphy
- Geohydrology
- Optical Mineralogy
- Geomorphology
- Geology Field Camp

#### **Remote Sensing:**

- Digital Image Processing
- Remote Sensing of the Environment
- Applied Regression Analysis
- MATLAB

### **Computer Skills**

- MS Office: Word, Excel, Access, PowerPoint
- ArcView 3.1 – 3.2
- Arc GIS 8.1 – 9.3
- ArcINFO,
- R
- ERDAS Imagine 9.0
- ENVI 4.1 – 4.2
- MATLAB 7.0

### **Professional Affiliations**

- American Geophysical Union
- IAVCEI

### **Publications, Presentations, and Abstracts**

Durst, K.S., Rose, W.I., Wolf, R.E., Maclean, A. ***Analysis of Eruption Rates at Santiaguito, Guatemala, Using ASTER and Aerial Derived Digital Elevation Models Poster***, 2006, Fall AGU Meeting.

Durst, K.S., Rose, W.I., Wolf, R.E., Maclean, A., Rios, M.S. ***Erupted Magma Volume Estimates at Santiaguito and Pacaya Volcanoes, Guatemala, Using Digital Elevation Models*** (in review).