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**National Geospatial-Intelligence Agency**  
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#### EDUCATION

<b>University of Alaska Fairbanks</b>	2002-2005
<b>Degree Objective:</b>	M.S., Geology (Volcanology/Remote Sensing)
<b>M.S. Advisor:</b>	Jonathan Dehn
<b>M.S. Thesis:</b>	Chronologic Multisensor Assessment for Mount Cleveland, Alaska from 2000 to 2004 Focusing on the 2001 Eruption
<b>Indiana University of Pennsylvania, Indiana, PA</b>	1998-2001
<b>Degree:</b>	B.S., Geology with Honors and a Minor in Geography
<b>B.S. Thesis:</b>	Determining Mineral Crystallization Depths of Primitive Lava Flows from Craters of the Moon National Monument (COM), Idaho; Implications for Magma Stagnation

#### EXPERIENCE

<b>Work:</b> National Geospatial-Intelligence Agency	May 2007-Present
<b>Position:</b>	Geodetic Earth Scientist
<b>Duties:</b>	Analyze the Earth's gravity and magnetic fields, geophysical structure, material properties, and dynamics for geospatial intelligence. The DoD and Intelligence Community (IC) focus for coordinate system analysis, datums, Geodesy, Geophysics, and geotechnical issues. Develop spatial and temporal models defining demographics and Earth Systems. Define and maintain the World Geodetic System (WGS) and its associated models to accurately position geospatial intelligence worldwide in a common reference system. Analyze weapons systems to determine the effects of geodetic quantities on navigation and targeting performance. Provide in-depth technical expertise on Geodetic and Geophysical issues to internal and external customers and represent NGA in external community forums establishing DoD and IC doctrine and policy.
National Geospatial-Intelligence Agency	Nov. 2005-May 2007
<b>Position:</b>	Orbit Analyst
<b>Duties:</b>	Collect, process, and analyze geodetic and geophysical data and information.
University of Alaska Fairbanks	Aug. 2002-Oct. 2005
<b>Position:</b>	Research Assistant Geophysical Institute University of Alaska Fairbanks, Alaska Volcano Observatory
<b>Duties:</b>	Assist with volcano remote sensing monitoring of AVHRR, GOES, GMS, and MODIS satellite sensors. Monitoring of the approximately 100 historically active volcanoes in the North Pacific region (Cascade Range in the western U.S., Alaska, Kamchatkan Peninsula, and Northern Kurile Islands).
Equitable Gas Company	Jun. 2001-Aug. 2001; Jan. 2002-Apr. 2002
<b>Position:</b>	Geological Intern
<b>Duties:</b>	Data entry of geologic stratigraphic tops, creation of stratigraphic and structural cross sections using petroleum software, and creating maps for geologic information.
State University of New York at Buffalo	May 2001-Jun. 2001
<b>Position:</b>	Geological Field Camp

**Duties:** Basic field mapping, structure, and stratigraphy training.  
Indiana University of Pennsylvania Jun. 2000-Jul. 2000  
**Position:** Research Assistant  
**Duties:** Paleontology and Igneous Petrology Research  
United States Navy Jul. 1990- Dec. 1997  
**Rank:** E-5, Petty Officer Second Class  
**Rate:** Aerographer's Mate  
**Duties:** In charge of encoding/decoding weather observations for transmission.  
Updating internet homepages with weather information for the fleet.  
Maintaining weather and communications equipment. Updated reports  
for tropical cyclones to be issued to the public. Launch weather  
balloons for upper atmospheric readings.

### PUBLICATIONS

Dean, K.G., Dehn, J., Papp, K.R., **Smith, S.**, Izbekov, P., Peterson, R., Kearney, C., and Steffke, A., 2004, Integrated satellite observations of the 2001 eruption of Mt. Cleveland, Alaska, Journal of Volcanology and Geothermal Research, v. 135, p. 51-73.

### UNPUBLISHED THESIS

**Smith, S.J.**, 2005, Chronologic multisensor assessment for Mount Cleveland, Alaska from 2000 to 2004 focusing on the 2001 eruption, University of Alaska Fairbanks M.S. Thesis, 142 p.

### ABSTRACTS

- Smith, S.J.** and Dehn, J., The 2001 eruptions of Mount Cleveland, Alaska: further analysis of remote sensing and field observation data, IAVCEI General Assembly 2004 Meeting, Pucón, Chile, November 14-19, 2004.
- Smith, S.J.**, Dehn, J., and Moore, R. B., Analysis of volcanic deposits from the 2001 eruption of Mt. Cleveland, Alaska using multisensor satellite data and field observations, American Geophysical Union Fall Meeting, San Francisco, CA, December 8-12, 2003.
- Smith, S.J.**, Dean, K.G., and Dehn, J., Associating the temperature difference model, used for AVHRR and GOES, to the MODIS image from February 19, 2001 of the eruption plume of Mt. Cleveland, Aleutian Islands, Alaska, IAVCEI Cities on Volcanoes III, Hilo, HI, July 14-18, 2003.
- Smith, S.J.**, Dean, K.G., and Dehn, J., Associating the temperature difference model, used for AVHRR and GOES, to the MODIS image from February 19, 2001 of the eruption plume of Mt. Cleveland, Aleutian Islands, Alaska, Alaska Geological Society Meeting, Fairbanks, AK, April 25, 2003.
- Smith, S.J.** and Putirka, K., Crystallization depths for Holocene basaltic lavas from Craters of the Moon National Monument, ID, Sigma Xi Undergraduate Research Symposium, Indiana, PA, April 2001.

### SKILLS

**Computers:** Spreadsheet (Excel, SPSS and Lotus 123)  
Word Processing (Microsoft Word and WordPerfect)  
Operating Systems (Mac, IBM, and some UNIX)  
Drafting and Design (Adobe Photoshop, Corel Draw, Corel Paint, some AutoCAD and PowerPoint)  
Remote Sensing (ENVI, ERDAS Imagine, ASF SAR Tools and MicroMSI)  
GIS (ArcView 3.x, ArcGIS 9.0, ArcInfo, ArcMap, and MapInfo)  
Petroleum software (Geographix)  
Web Design (Netscape Composer and Microsoft Frontpage)  
ISI-40 Scanning Electron Microscopy (SEM) with Iridium software  
SX-50 Electron Microprobe with Crosstalk and Probe for Windows software  
ED Carbon Coating system  
Kevex 0700-iXRF EDS-XRF system  
Rigaku WDS-XRF  
Garmin and Trimble handheld GPS units

**Scientific:** Geology, Paleontology, Stratigraphy, Fieldwork, Geologic Mapping, Volcanology,

## Remote Sensing

### **ORGANIZATIONS**

Geological Society of America, American Geophysical Union, International Association of Volcanology and Chemistry of the Earth's Interior, American Society of Photogrammetry and Remote Sensing, Alaska Geological Society, IEEE Geoscience and Remote Sensing Society, Sigma Gamma Epsilon, and Phi Kappa Phi

### **FUNDING**

Pat Roberts Intelligence Scholars Program Scholarship (\$25,000), 2005  
National Science Foundation IAVCEI Cities on Volcanoes III Student Workshop Travel Grant (\$1130), 2003  
University of Alaska Fairbanks Graduate School Travel Grant (\$600), 2003  
UAF College of Science, Engineering and Mathematics Student Travel Grant (\$700), 2003  
UAF Geophysical Institute/International Arctic Research Center Graduate Student Travel Grant (\$400), 2003  
IUP Graduate Research Grant (\$300), 2001  
IUP Geoscience Department Field Camp Grant (\$500), 2001

### **HONORS**

IUP Geology Department Sigma Gamma Epsilon W. A. Tarr Award, 2002  
United States Achievement Academy National All-American Scholar, 2001

### **FOREIGN TRAVEL**

Chile, Italy, Germany, Spain, Austria, New Zealand, Australia, Switzerland, and Antarctica