



**EDUCATION**

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**MASTER OF SCIENCE IN GEOLOGY, 2006**

*University of California Davis. Davis, California*

**BACHELOR OF SCIENCE IN GEOLOGY, 2001**

*Northern Arizona University. Flagstaff, Arizona*

**BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE, 1997**

*Northern Arizona University. Flagstaff, Arizona*

**EXPERIENCE**

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**Geologist**

*hydroGEOPHYSICS, Inc., Richland, WA*

2014 – Present

Projects include:

- Injection well-field installation to enhance secondary recovery of metal ore,
- Long term monitoring of metallurgical studies,
- Electrical resistivity tomography studies, single arrays up to 1,500m long, and profiles up to 3,700m long,
- Vertical electric soundings to 550 m depth of characterization,
- Geologic assessments.

Services and responsibilities include:

- Project design, oversight and field management,
- Data acquisition, QA/QC and interpretation of geophysical and geologic data, including electrical resistivity tomography, vertical electric sounding,
- Well field design, well construction, installation, well site geology, sampling and sounding,
- Reporting and proposal development,
- Client communication.

**Associate & Staff Geologist**

*Norwest Corporation, Grand Junction, CO*

2008 – 2014

Conducted field and computer-based geologic assessments to support national and international resource development. Projects included: coal, oil sand, oil shale, placer gold and coal bed methane resource assessments and due diligence. Duties included: field management of single- and multi-rig drilling operations, well-site geology, geotechnical core logging, field mapping, down-hole geophysical log interpretation, sample preparation, GIS, database construction and maintenance, environmental compliance, budgeting, QA/QC, reporting (including NI 43-101 and JORC), and figure creation.



**National Resource Specialist**

2011 – 2013

*US DOI – Bureau of Land Management, Montrose, CO*

GIS and specialist support for NEPA planning and impact analysis of Regional Management Plan (RMP) revision. Duties included: GIS, develop analysis layers and scenarios, organize and maintain geospatial data, cartography, coordinate with inter-agency specialists and subcontractors, QA/QC, develop and streamline analysis methods, maintain enterprise databases, develop domains, write and maintain metadata (FGDC compliant), provide GIS training and assistance, report writing, DOI and FEMA training, and working in virtualized environments.

**Geologist**

2006 – 2008

*DIR Exploration, Inc. Palisade, CO*

Field-based uranium exploration in Northern Arizona breccia pipe district. Duties included: topographic and mineralogical assessment of geologic strata to determine potential targets, claim staking, geophysical exploration (VLF, magnetics), structural field data collection, sample collection, interpret geochemical data, GIS, extended field camping, 4x4 operation, reporting, vehicle maintenance.

**Research Specialist**

2004 – 2006

*Institute for Tribal Environmental Professionals (ITEP), Flagstaff, AZ*

Assisted U.S. Native American tribes in capacity building of air quality and other environmental programs through technical training courses and consultation. Duties included: provide GIS and other software training and technical assistance to Native American tribal staff, emissions inventories, develop GIS data for tribes and government organizations based on national and local databases, create technical reports and presentations for national conferences, facilitate multi-cultural working groups, QA/QC.

**Geologic Research Assistant**

2001 – 2004

*University of California Davis, Department of Geology, Davis, CA*

Conducted geologic fieldwork on complex metamorphic terrains in remote regions of western Argentina. Developed and used DEMs of field area using ERDAS OrthoEngine. Employed air photographs and Landsat imagery interpretation to delineate structural and metamorphic terranes. Collected structural data and oriented rock samples to develop the tectonic and metamorphic history of a high temperature shear zone. Utilized  $^{40}\text{Ar}/^{39}\text{Ar}$  and  $^{238}\text{U}/\text{Pb}$  dating of indicative minerals to determine tectonic history of tectonic events. Created map coverage using ESRI ArcGIS geodatabase software. Presented findings at international meetings to communicate ideas and data with other researchers. Synthesized findings in a thesis volume.

**Geologic Research Assistant**

1999 – 2001

*Northern Arizona University, Sandbar Studies Lab, Flagstaff, AZ*

Conducted field and computer based assessments of fluvial sediment in Grand Canyon NP to assist in management advising for operation of Glen Canyon Dam. Duties included: collect field survey data points and breaklines, determine resource management areas for analysis, volumetric and topographic analysis of survey data using AutoCAD software, development of analysis methodologies, report and presentation development.

**Geologic Research Assistant**

1998 – 2000

*Northern Arizona University, Ahklun Mountains Project, Flagstaff, AZ*

Managed sediment analysis laboratory for processing of sediment core. Duties included: sample preparation for analysis in laser diffraction particle size analyzer, magnetic susceptibility of lake core sediments, collect samples for tephrochronology, palynology, and  $^{14}\text{C}$  dating, create charts, graphs, databases and figures for publication in peer reviewed journals, report writing, supply ordering, and budgeting.

**PUBLICATIONS**

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- Cain, Joseph C. IV, 2006. Characterization of the Don Juan Shear Zone: Devonian Extension in the Western Sierras Pampeanas, Provincia San Juan, Argentina. University of California, Davis. Masters Thesis.
- Cain, Joseph C. IV, Roeske, S.M., McClelland, W.C., and Iriondo, A., 2004. Middle Ordovician and Early Devonian Metamorphic and Deformation Events in the Loma de las Chacras, Sierras Pampeanas, San Juan Province, Western Argentina. Abstracts with Programs- Geological Society of America. Vol. 36, No. 4, p. 35 May 2004.
- Cain, Joseph C. IV, Roeske, S.M., McClelland W.C., Vujovich, G.I., 2003. Evidence for Extension in the Loma de las Chacras, Western Sierras Pampeanas, Argentina. Abstracts with Programs - Geological Society of America, vol.35, no.6, pp.28, Nov 2003.
- Mulcahy, Sean R., McClelland, W.C., Roeske, S.M., Vujovich, G.I., and Cain, J.C., 2003. U-Pb Analyses from Western Sierras Pampeanas, Northwest Argentina: Evidence for a Complex Proterozoic through Silurian Tectonic History. Abstracts with Programs - Geological Society of America, vol.35, no.6, pp.344, Nov 2003.
- Kaufman, D., Briner, J., Werner, A., Cain, J. IV, and Gregory-Eaves, I., 2001, Timing of last glacial maximum, Ahklun Mountains, Alaska inferred from melt-water sedimentation in Arolik Lake. 31st Annual Arctic Workshop (Amherst, Massachusetts), 62-63.
- Briner, J.P., Kaufman, D.S., Hu, F.S., Werner, A., Cain, J.C., Lee, B.Y., and Gregory-Eaves, I., 2000, Lacustrine record of the last glaciation from Arolik Lake, Ahklun Mountains, SW Alaska. 30th Annual Arctic Workshop (Boulder, Colorado), 29-32.
- Kaplinski, M.A, Bennett, J., Cain, J.C., Hazel, J.E. Jr., Manone, M., Parnell, R., Stevens, L. 1998, Fluvial habitats developed on Colorado River sand bars in Grand Canyon. EOS, Transactions of the American Geophysical Union, Fall 1998 meeting, v. 79, n. 45, p. F344.

**PROFESSIONAL AFFILIATIONS**

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Geological Society of America  
American Institute of Professional Geologists  
Rocky Mountain Association of Geologists  
Arizona Geologic Society



**PROFESSIONAL CERTIFICATIONS**

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MSHA 5000-23 (Surface miner) (7/2014)  
Workplace Hazardous Materials Information System (WHMIS)  
H2S Alive (2/2010)  
Petroleum Safety Training (2/2010)  
Oil Sands Safety Training (2/2010)  
Fleet Winter Driving Course (2/2010)  
Defensive Driving (3/2013)  
4x4 Safety (3/2013)  
BLM S-341 – GIS Specialist for Incident Management - Wildfire  
FEMA IS-100b Introduction to Incident Command System (2/2012)  
FEMA IS-700a National Incident Management System (2/2012),  
Wilderness 1st aid (WFR) & CPR (11/2014)