Curriculum vitae:
Jessica Spratt
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Birth date: December 15, 1974
Citizenship: Canadian
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Educational Background

2001-2003:	M. Sc. Geology (Syracuse University)
1995-1999:	B.Sc. Honors Geology (Carleton University)
1993-1995:	Math/Physics major at Carleton University
1990-1992:	Ashbury College (Ottawa, Ont.)
1988-1990:	South Carleton High School (Richmond, Ont.)

Awards and Certificates

2003 – Marjorie Hooker Award for outstanding thesis proposal, Syracuse University
2009 – Standard First Aid and CPR
2007 – Staying safe in bear country certificate of achievement
2009 – Canadian Firearms Possession and Acquisition License
2009 – Wilderness First Aid training

Skills

-*Computer skills:*
-experience using Windows, Unix, Cygwin, DOS and Mac operating systems
-experience running codes and software packages for processing, analyzing, modeling and interpreting MT data (Geotools, Winglink, Jones robust processing codes, Groom-Bailey decomposition codes, ModEM, some experience with Chave Birrp and Egbert codes, some experience with Weerachai's 3-d modelling code)
-some programming experience (Fortran)
-additional experience in ArcGIS, Corel Draw 13, Fieldlog AutoCAD, Microsoft Office
-*Experienced outdoor skills:* outdoor survival skills, bear awareness, experience with firearms, experience with helicopters and small fixed-wing aircrafts as well as loading and unloading aircrafts, hiking and camping in remote locations, canoeing, off-road 4x4 vehicle operation, snowmobile operation, and ATV operation.
-*Experienced geological/geophysical skills:* testing, care and maintenance of MT equipment, deploying and recovering MT sites (audio-, broadband, and long-period systems), MT data analysis, 2D and 3D data interpretation, setting up remote teleseismic stations, geochron sampling, 1:25 000 scale geologic mapping and 1:5 000 scale mapping.
-*Good interpersonal and organizational skills*: work well with others as well as on my own, experience in leading field crews and organizing logistics for field operations,
-*Excellent leadership skills:* experience organizing and leading field activities both within Canada and internationally.

Work Experience

MAGNETOTELLURIC CONTRACTOR — AUG 2007 TO PRESENT
SELF EMPLOYED

Natural Resources Canada, 2016
- Complete data analysis, 2D modeling, preliminary interpretation, and open file report for magnetotelluric data collected across the Darnley Bay anomaly, Northwest Territores, Canada.

University of Western Australia, various projects, 2013 – present

- Complete data analysis, 2D and 3D modeling, interpretation, and comprehensive report for the Kimberley magnetotelluric (MT) data, Western Australia.
- Complete data analysis, 2D and 3D modeling, interpretation, and comprehensive report for the Fraser magnetotelluric (MT) data, Southwestern Australia.

Moombarriga Geophysics, - various projects, 2011 - present

- Quality control, 1D, and 2D modeling of broandband (BBMT) data as part of the Coober Pedy project, South Australia
- 2D modeling of BBMT data as part of the Forrestania project, Western Australia
- Quality control and 1D modeling of audio- (AMT) and BBMT data as part of the Wangaratta project, Victoria, Australia
- Data acquisition (MTU-5A) and quality control, the Tropocana Gold project, Western Australia
- 2D modeling of Kimberley MT data, Western Australia

Natural Resources Canada, GEM – Diamonds Project, 2010 to 2013

- Collected BBMT data using Phoenix MTU and MTU-5A instrumentation at 57 site locations and long period (LMT) data using NIMS systems at 13 locations on mainland Nunavut over 3 field campaigns.
- Planned data acquisition scheme and shared helicopter-supported logistics based partially out of local communities and partly out of industry exploration camps.
- Processed data using Jones and Chave remote referencing codes, analyzed that data for distortion, dimensionality, coastal effects, and non-uniform source field effects.
- Completed 1- and 2-dimensional conductivity models
- Prepared a data acquisition and analysis reports for an NRCan Open File.
- Prepared and submitted interpretive paper for journal publication.

Natural Resources Canada - Melville Peninsula, Nunavut, 2009

- Collected BBMT using Phoenix systems and LMT data using Ukranian LEMI systems at 60 km spacing along a 300-km long profile
- Planned survey and shared logistics in a helicopter-supported, remote GSC camp location
- Processed data using modern analytical tools and programs.
- Modelled and interpreted the data along the profile using WinGlink software.
- Prepared a document for an NRCan Current Research publication.
- Presented results at geological and geophysical meetings.

Geoscience BC - Nechako Basin 2007-2009

- Processed audiomagnetotelluric (AMT) and broadband (BBMT) data using robust remote reference codes and analyzed for distortion and 3-dimensionality
- Modelled and interpreted the data using WinGlink MT intepretation software package and presented results at several meetings and workshops

Natural Resource Canada - Various Projects 2008 – 2009

- Equipment preparation, planning field logistics in remote Canadian locations, data acquisition, quality control, data processing, analysis, modeling, and report writing
- Projects include:
  - Mackenzie Delta, Northwest Territories: AMT and BBMT data acquisition from remote Mallik drilling site (2008), and helicopter-supported deployment from Inuvik (2009)
  - Southampton Island, Nunavut 2008: BBMT (MTU-5A) and LMT (LIMS, and NIMS) data acquisition from Coral Harbour, logistics shared with GSC mapping crew
  - Baie Verte Peninsula, Newfoundland, 2008: Down mine AMT (MTU-5A) survey based out of Packett, logistics shared with GSC mapping crew

- Nechako, British Columbia, 2009: analyze and model AMT and MT near Chasm Provincial park, initiate 3-D modelling of Nechako basin dataset, present data in reports, at conferences or workshops.

MAGNETOTELLURIC RESEARCH TECHNICIAN — SEPT 2003 TO AUG 2007
DUBLIN INSTITUTE FOR ADVANCED STUDIES — DUBLIN, IRELAND

NECHAKO BASIN, 2006
-Re-analyzed old MT data from the Nechako sedimentary basin
-Generated 2-D model for the region
-Compared MT responses to 1-D models from borehole resistivity logs and gravity information
-Presented results as a poster at the 18th Electromagnetic induction workshop in Spain

SAMTEX Phase III, 2005-2006
-Led a crew of 13 people in the data acquisition of 84 BBMT sites throughout Botswana using Phoenix MTU-5A instrumentation;
-Acted as designated project health and safety coordinator;
-Began the development of new safety regulations for international field operations;
-Planned and organized all logistics for data acquisition;
-Completed preliminary data processing for all sites.

CORK AMT SURVEY, 2005
-Performed a pilot AMT survey in Middleton, Ireland across a buried glacial valley

BIRR CASTLE DC RESISTIVITY SURVEY, 2005
-Aided in the data acquisition for an electrical resistivity survey in the grounds of Birr Castle with the aim of locating bedrock at depths less than 20 m to allow anchorage for a radio telescope.

SAMTEX Phase I and II Project, 2003 – 2005
-Aided in the data acquisition of broadband (MTU-5A) and long period (LiMS) data during 4 other field campaigns throughout South Africa and Botswana
-Aided to complete data processing using Phoenix, Jones, and Chave codes

Slave to Bear MT Project, 2004
-Responsible for planning of all field operations, involving equipment purchases, transportation, and organization of lodging for acquisition in an extremely remote area,
-Led a field crew in the data acquisition of a magnetotelluric survey using long-period and BBMT systems in Northwest Territories, involving fixed-wing, float plane site installations
-Processed, analyzed and modelled MT data
-Interpreted and presented results at the Yellowknife Geoscience Forum, 2004.

RESEARCH ASSISTANT — SEPT 2001 TO SEPT 2003
SYRACUSE UNIVERSITY — SYRACUSE, NY

INDEPTH Southern Tibet Project, 2002
-Processing and analyzing MT data collected in Southern Tibet:
-Completed M.Sc. thesis on the electrical conductivity structure across the Yarlung-Tsangbo Suture zone in Southern Tibet

Central Baffin Electromagnetic Experiment, 2002
-Conducted a helicopter supported MT survey using broadband (MTU-5A), long-period (LiMS) and high frequency systems, out of remote camp on Central Baffin Island, Nunavut, Canada

MT SURVEYOR — SEPT 1998 TO AUG 2001
GEOLOGICAL SURVEY OF CANADA — OTTAWA, ONT.

Walmsley Lake Project, 2000
-Responsible for organizing highly complex field operations on short notice in remote region of Canada that involved equipment purchases and transportation, fixed-wing aircraft and helicopter chartering, and coordination with industry support
-Led a field crew in the data acquisition of a helicopter and fixed-wing float plane supported, magnetotelluric survey within the Slave Province in Northwest Territories using long-period systems.
-Processed and analyzed MT data
-Aided in the installation of teleseismic stations
-Aided in 1:25 000 scale geologic mapping of the region

INDEPTH Southern Tibet Project, 2001
- Conducted a magnetotelluric survey using long-period systems in Southern, Tibet; data from this survey is being used to complete an M. Sc. thesis

Central Baffin Electromagnetic Experiment, 2001
-Conducted a combined broadband and long-period magnetotelluric survey on Baffin Island, Nunavut, Canada.
-Processed and analyzed MT data

Lithoprobe SNORCLE Project, 1999
-Led field crew in acquiring long period data as part of a magnetotelluric survey through the cordillera of central Yukon and northwest British Columbia
-Responsible for quality control of contracted broadband data acquisition
-Processed long period LiMS data, which involved the detailed analysis of raw data, processing with Jones robust codes, analyzing for source field effects, and Groom-Bailey decompositions.

Lithoprobe Western Superior Transect, 1998
-Conducted a long-period magnetotelluric survey (LiMS) throughout the Western Superior Province in northern Ontario and eastern Manitoba
-Completed a B.Sc. thesis report comparing the EM response characteristics of several subprovinces within the Western Superior Province

References

Professor Alan Jones
Complete MT Solutions Inc.
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Jim Craven
Geological Survey of Canada
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Publications:

Spratt, J.E., M.C. Dentith, S. Evans, A.R.A. Aitken, M. Lindsay, J.A. Hollis, I.M Tyler, A. Joly, and J. Shragge (2014). A magnetotelluric survey across the Kimberley Craton, northern Western Australia; *Geological Survey of Western Australia,* Report 136, 92p.

Spratt, J.E., T. Skulski, J.A. Craven, A.G. Jones, D.B. Snyder, and D. Kiyan (2013). Magnetotelluric investigations of the lithosphere beneath the Central Rae Craton, mainland Nunavut; *Journal of Geophysical Research*, volume 119, issue 3, pg 2415 – 2438, doi: 10.1002/2013JB010221.

Spratt, J.E., B. Roberts, D. Kiyan, and A.G. Jones (2013). Magnetotelluric soundings from the Central Rae Domain of the Churchill Province, Nunavut; *Geological Survey of Canada,* Open File 7323, 34 p., doi:10.4095/292237.

Spratt, J.E., A.G., Jones, D. Corrigan, and C. Hogg (2013). Lithospheric geometry beneath Melville Peninsula, Nunavut, revealed by deep-probing magnetotelluric surveying; *Current Research*, 2013-12 in press.

Spratt, J.E., D.B. Snyder, and J.A. Craven (2012). Magnetotelluric soundings in the Committee Bay Belt, northern Churchill area, Nunavut; *Geological Survey of Canada*, Open File 7063, 37 p., doi: 10.4095/289836.

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Spratt, J., Craven, J., Shareef, S., Ferri, F., and Riddell, J, 2007. Designing a test survey in the Nechako Basin, south-central British Columbia to determine the usefulness of the magnetotelluric method in oil and gas exploration, *Geoscience BC, Report 2008-1, Summary of Activities*, pg 145 – 153.

Hamilton, M.P., A.G. Jones, R.L. Evans, C.J.S. Fourie, X. Garcia, A. Mountford, J.E. Spratt, and the SAMTEX Team*, 2006.* Electrical anisotropy of South African lithosphere compared with seismic anisotropy from shear-wave splitting analysis, *Physics of the Earth and Planetary Interiors, v.* **158,** pg 226 – 239.

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Evans, Shane, Alan G. Jones, Jessica Spratt and John Katsube, 2003. Central Baffin electromagnetic experiment (CBEX), Phase 2. *Geological Survey of Canada Current Research,* **2003-C24**, 10p.

I.J. Ferguson, J.A. Craven, R.D. Kurtz, D.E. Boerner, R.C. Bailey, X.Wu, M.R. Orellana, J. Spratt, G. Wennberg, and M. Norton, 2003. Large-scale imaging of Archean lithosphere in the western Superior Province, central Canada, *Physics of the Earth and Planetary Interiors*, **150**, Issues 1-3, pg 123 – 143.

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Unsworth, M., Wei, W., Spratt, J., Lin, X., Deng, M., Clarke, G., Jones, A., Nelson, K. D., Haines, S., 2001. East-west variations in the crustal structure of the Southern Tibetan Plateau from magnetotelluric data, *EOS Trans. Amer. Geophysical Union*, V **82**.