

Timothy James Peters
Ph.D Candidate
Environmental Engineering: Environmental Science.

Biography:

Gender: Male
Marital Status: Single
Nationality: United Kingdom (work VISA sponsorship required for Non-UK based employment)
US immigration: Currently on F-1 VISA and can apply for 1 year OPT status for employment in US.
Age: 28
Ethnicity: White Caucasian

Contact information: (Until 01 Aug 2011)

Work Address: Department of Earth and Environmental Science.
Vanderbilt University
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Email: Timothy.J.Peters@Vanderbilt.edu
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Permanent Home Address:

J's Corner, Hall Lane, Stickney, Boston
Lincolnshire, PE22 8BA, England

Current Departmental Affiliations:

1. [Department of Earth and Environmental Sciences, School of Arts and Sciences.](#)
2. [Department of Civil and Environmental Engineering, School of Engineering.](#)
3. [Vanderbilt Institute of Nanoscale Science and Engineering \(ViNSE\)](#)

Major Career aims:

- The interpretation of geochemical and geological information and development of experimental approaches aimed at exploring production of earths energy resources and economic reserves
- Development of sustainable approaches towards environmental monitoring and remediation.
- Development of sustainable strategies for reducing energy consumption for major urban areas.
- Research and development of experimental approaches to understand migration of sequestered industrial waste products in geological repositories.
- Application of elemental and isotopic geochemical information to trace fluid-mineral reactions with application to mineral reaction kinetics and characterization of geological repositories (i.e. nuclear waste, sequestered CO₂, etc)

Education:

Vanderbilt University: 2006-2011

Ph.D Student: Environmental Engineering; Environmental Science

GPA: 3.825

Advisor: [Professor John C. Ayers](#)

Collaborators: Calvin F. Miller, Shan Gao, Xiao-Ming Liu.

Research themes: Trace-element and isotopic geochemistry and experimental petrology of accessory phases with application to metamorphic fluids and geochronology.

Thesis title: Experimental- and field-based geochemical investigations into the behavior of zircon in hydrothermal and deep-tectonic environments associated with mountain-building and crustal-evolution events.

Notable completed graduate courses:

- Equilibria and Transformations in Earth Materials.
- Society and Nuclear waste disposal.
- Environmental Assessments.
- Environmental characterization and analysis.
- Environmental applications for geochemical modeling.
- Environmental Engineering caps-stone course: study of Yucca mountain nuclear waste repository.

University of London, Royal Holloway.

MSc Geology by Research 2005-2006

Advisor: Professor Martin Menzies

Collaborators: Matthew Thirlwall, Philip R. Kyle.

Research themes: Isotope Geochemistry and Magmatic processes in Rift Zones

Thesis title: Petrogenesis of the Zuni-Bandera Volcanic Field: Polybaric Partial Melting in Response to Lithospheric Extension.

University of London, Royal Holloway.

BSc Geology (1st class Honors) 2001-2004

Focus on Tectonic, geochemical, and magmatic processes.

Professional references

1. Professor John C. Ayers: Ph.D Advisor
john.c.ayers@vanderbilt.edu
Phone: (615) 283-0775
2. Professor Calvin F. Miller: Director of Graduate Studies, Earth and Environmental Sciences.
calvin.f.miller@vanderbilt.edu
Phone: (615) 322-2232
3. Professor James H. Clark: Director of Graduate Studies, Environmental Engineering.
james.h.clarke@Vanderbilt.edu
Phone: (615) 322 3897

Laboratory experience:

1. Vanderbilt University Environmental Engineering Laboratories, USA.
2. Vanderbilt Institute for Nanoscale Science and Engineering, USA.
3. Vanderbilt University, Professor John Ayers Experimental Petrology Laboratory, USA
4. X-Ray Diffraction Laboratory, Vanderbilt University, USA.
5. Key Laboratory of Continental Dynamics, Northwest University, China.
6. SIMS laboratory, Memorial University, Newfoundland, Canada.
7. SIMS laboratory, University of California Los Angeles, USA.
8. Electron Microprobe Laboratory, University of Tennessee, USA.
9. University of London Radiogenic Isotope Facility, UK.
10. University of London X-ray Fluorescence Facility, UK.

Special Skills

Level of Proficiency

Years of Experience

- | | | |
|--------------------------------|--------------|-------|
| 1. Geochemist's workbench | Basic | < 1 |
| 2. PHREEQC | Basic | < 1 |
| 3. ICP-MS geochemical analysis | Intermediate | 1 - 5 |

4. SIMS geochemical analysis	Intermediate	1 - 5
5. XRD geochemical analysis	Basic	< 1
6. XRF geochemical analysis	Intermediate	1 - 5
7. Adobe Illustrator	Intermediate	6 - 10
8. Microsoft office suit	Advanced	6 - 10
9. Vanderbilt University Hazardous Waste Training	Basic	1 - 5
10. Vanderbilt University Health and Safety Training	Intermediate	1 - 5

Developed Skills:

- Strong communication and interpersonal skills, including the ability to interact effectively with a broad range of specialists and clients.
- Strong written and verbal communication skills.
- Able to foster strong internal and external relationships.
- Able to network with multiple components of an organization.
- Strong ability to balance multiple tasks and priorities.
- Ability to work effectively within a multidisciplinary team and communicate results and interpretations to management.
- Skillful application of standard Microsoft software suite
- Strong leadership skills and be able to set direction, prioritize issues, and make decisions, often in ambiguous situations.
- Strategic and analytical thinking skills: able to synthesize data from a broad range of sources and make strategic links between issues to see the broad picture.
- A highly motivated self-starter.

Workshops:

1. Mineralogical association of Canada (2008): Laser Ablation ICP–MS in the Earth Sciences: Current Practices and Outstanding Issues.
2. EURISPET-Granada (2009): High pressure metamorphism and subduction zones. Granada, Spain
3. UCLA Ion Microprobe Student Workshop (2010)

Awards:

1. Department of Earth Science, Royal Holloway, University of London: Post-graduate student research grant award. (2006)
2. Department of Earth Science, Royal Holloway, University of London: Doctoral achievement Student Publication Award (2008).
3. European Intensive Seminars on Petrology Graduate Student Grant, Granada, Spain, (2009).
4. UCLA Ion Microprobe Student Workshop Grant, (2010).

Publications:

1. **Peters, T.J.** Ayers, J.C. (in-prep). (Tentative title) Experimental measurements of zircon/fluid trace-element partition coefficients at High/Ultra-high pressure conditions (1.5-3.0 GPa).
2. Ayers J.C., Zhang L., **Peters T.** (in prep.) Solubility of zircon and baddeleyite in neutral to alkaline aqueous fluids at upper crustal conditions. To be submitted to Geochim. Cosmochim. Acta.
3. **Peters, T.J.** Ayers, J.C. Gao, S. Liu, X-M. (in-prep). (Tentative title) The importance of in-situ zircon recrystallization for constraining discrete hydrothermal reactions in the lower-crust associated with continental subduction and exhumation: Application of zircon U-Pb and Lu-Hf isotopic analyses from a retrograded eclogite-orthogneiss located within the Luotian Dome, Central China.
4. **Peters, T.J.** Ayers, J.C. Gao, S. Liu, X-M. (Submitted). The response of zircon in eclogite to metamorphism during the multi-stage evolution of the Huwan Shear Zone, China: Insights from Lu-Hf-U-Pb isotopic and trace-element geochemistry. Submitted to JGR.

5. **Peters, T.J.**, Menzies, M., Thirlwall, M., Kyle, P., (2008). Zuni-Bandera volcanism, Rio Grande, USA – melt formation in garnet- and spinel- facies mantle straddling the asthenosphere-lithosphere boundary. *Lithos*. Vol 102, 1-2, pp 295-315. 10.1016/j.lithos.2007.08.006
6. **Peters, T. J.**, (2005). Petrogenesis of the Zuni-Bandera Volcanic field: Polybaric partial melting in response to lithospheric extension. MSc Thesis. Royal Holloway, University of London.

Abstracts and Posters:

1. **Peters, T J**, Ayers J C, (2010), Experimental measurement of trace-element partitioning between zircon and hydrothermal fluids at High Pressure (1.5 GPa) metamorphic conditions. Fall 2010 Meeting San Francisco, U.S.A
2. **Peters, T J**, Ayers J C (2010), Preliminary report on the experimental measurement of trace-element partitioning between zircon and hydrothermal metamorphic fluids at High/Ultra-High Pressure conditions. Goldschmidt Conference 2010. Knoxville TN, U.S.A
3. **Peters, T J**, Ayers J C, Gao S, Liu X-M, (2009), The response of zircon in eclogite to metamorphism during the multi-stage evolution of the Huwan Shear Zone, China: Insights from Lu-Hf-U-Pb isotopic and trace-element geochemistry. Section V27 AGU. Fall 2009 Meeting San Francisco, U.S.A
4. **Peters, T J**, Ayers J C (2009), Experimental investigation into the partitioning behavior of hydrothermal zircon (ZrSiO₄) at 1.5 to 3.5 GPa: Tracing metamorphic fluids and deep-crustal evolution processes during High/Ultra-High pressure metamorphism. EURISPET-Granada: High-pressure metamorphism and subduction zones. Granada, Spain
5. Miller, C F, Miller, J S, Claiborne, L L, Gualda, G A R, **Peters, T J**, (2008), Generating high-silica rhyolites: Plutonic and volcanic perspectives from the Colorado River Region, Nevada-Arizona, USA: abstracts, IAVCEI 2008, General Assembly, Reykjavik, Iceland.
6. Miller, C.F., J.S. Miller, L.L. Claiborne, G.A.R. Gualda and **T.J. Peters**, (2008), Highly-evolved silicic magmas: Volcanic vs. plutonic conundrums. Goldschmidt Conference Abstracts A629. Vancouver, Canada.
7. **Peters, T.**, Menzies, M., Thirlwall, M., Kyle, P., (2006). Zuni-Bandera volcanism, Rio Grande, USA – melt formation in garnet- and spinel- facies mantle straddling the asthenosphere-lithosphere boundary. “International Conference on Continental Volcanism” IAVCEI 2006, May 14-18, Guangzhou, China.