

Jane Doe**Business Address**

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Education

Massachusetts Institute of Technology Cambridge, MA
National Institutes of Health Postdoctoral Fellow. Department of Chemical Engineering. Research focuses on encapsulation of ribonucleic acid (RNA) into polymer nanospheres for delivery to human cells. (August 2010-present)

California Institute of Technology Pasadena, CA
Ph.D. Department of Chemistry, May 2010. Thesis: Sequence-Specific Recognition of DNA in the Minor Groove by Imidazole and Pyrrole-Containing Polyamides.

Howard University Washington, DC
Bachelor of Science, Chemistry, Magna Cum Laude, April 2005. Participated in summer undergraduate research program resulting in thesis and presentation. Thesis: Synthesis of Imidazole-Containing and Amidine-Linked Analogs of Distamycin.

Kansai Gaidai Hirakata City, Japan
Foreign exchange student. Studies included Japanese language and intercultural communication. Lived with a Japanese family. (August - December 2004)

Awards Carolyn Vogel Chemistry Scholarship (2011), Howard Advantage Student (2004), Phi Beta Kappa (2004), General Electric Fellowship (2005-2006), National Institutes of Health Postdoctoral (2010).

Research Experience

MIT Department of Chemical Engineering Cambridge, MA
Advisor: John Smith
Currently developing methodology for ribonucleic acid encapsulation in nanosphere particles using biodegradable polymers for ultimate use in gene therapy applications. Examining methods for chemical derivation of the polymer/RNA nanospheres for targeting specific cell types. Work involves polymer synthesis and characterization, GPC, cellular targeting. (August 2010 - present)

Caltech Department of Chemistry Pasadena, CA
Advisor: Brian Jones
Explored sequence-specific recognition of minor groove of double-helical DNA-binding properties through polyacrylamide gel electrophoresis. Results from this work expanded sequence repertoire available to pyrrole-imidazole polyamides and provided general criteria for design of future sequence-specific DNA-binding polyamides. Determined compatibility of oligonucleotide and a polyimide binding simultaneously in the major and minor grooves, respectively. Techniques used include synthesis, NMR spectroscopy, HPLC, column chromatography, polyacrylamide gel electrophoresis, solid-phase peptide synthesis including HF cleavage and deprotection, oligonucleotide synthesis and purification, radioactive labeling of DNA, cloning specific sequences into plasmids, DNA sequencing. (September 2005 - May 2010)

Howard University, Department of Chemistry Washington, DC
Advisor: Phillip Grey
Synthesized analogs of the natural product distamycin A, which binds to DNA in the minor groove. Synthesis involved imidazole chemistry with amidine linkages and end groups for electrostatic interaction with DNA. (June - August 2004)

Teaching Experience

Caltech, Department of Chemistry Pasadena, CA
Organic Chemistry. Teaching Assistant.
Helped write problem sets and exams. Assisted students individually with homework problems or material they found difficult to understand. (September 2009 - June 2010)

Introductory Chemistry. Head Teaching Assistant.
Prepared teaching materials including problem sets and exams. Supervised other teaching assistants and graders. Addressed individual students' questions and needs. (January - June 2008)

Organic Chemistry Laboratory. Teaching Assistant.
Supervised and instructed students in organic chemistry techniques. Emphasized keeping complete and accurate scientific notes. (January - June 2005)

Howard University Department of Chemistry Washington, D.C.
Laboratory Techniques in Organic and Inorganic Chemistry. Teaching Assistant.
Supervised and assisted students with multi-step syntheses of compounds designed to teach general laboratory techniques. (January - June 2005)

Presentations "Recognition of 5'-(A,T)GG(A,T)2-3' Sequences in the Minor Groove of DNA by hairpin Polyamides." J. Doe, E.E. Cummings, and J.J. Reynolds. Western Biotech/ACS Regional Conference in San Diego, CA. October 19, 2009.

"Synthesis and DNA Binding Studies of Imidazole-Containing and Amidine-Linked Analogs of Distamycin A." J. Doe, A.L. Brown, and M. Kinney. Fifth National Conference on Undergraduate Research in Pasadena, CA. April 2005.

Publications "Optimization of the Hairpin Polyimide Design for Recognition of the Minor Groove of DNA." J. Doe, B.B. Cummings, and J.J. Reynolds, Journal of the American Chemical Society, 2010, 5, 118, 1047.

"Recognition of 5'-(A,T)GG(A,T)2-3' Sequences in the Minor Groove of DNA by Hairpin Polyamides." J. Doe, B.B. Cummings, J.J. Reynolds, Journal of the American Chemical Society, 2010, 118, 6153.

"Simultaneous Binding of Polyamide Dimers and Oligonucleotides in the Minor and Major Grooves of DNA." J. Doe, J.J. Reynolds, Bioorganic Medical Chemistry, 2010, 5, 1045.

"Cyclic Polyamides for Recognition in the Minor Groove of DNA." L. Lyne, J. Doe, J.J. Reynolds, Proceedings of the National Academy of Sciences, USA, 2009, 93, 10389.

Activities Officer, Member, MIT Association of Postdoctoral Women. Member, American Chemical Society, 2003-present. Organized Organic Chemistry Seminar Series at Caltech, 2006-07. Volunteered at the Hunting Memorial Hospital Extended Care. Member, Howard University Marching and Symphonic Bands. Interests include traveling, reading, running marathons, hiking, backpacking, and cooking.

References

Professor X	Professor Y	Professor Z
Chair, Chemistry Department	Department of Chemistry	Department of Chemistry
MIT.	MIT.	California Institute of Technology
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Education **Massachusetts Institute of Technology** Cambridge, MA
Postdoctoral Researcher. Department of Earth, Atmospheric and Planetary Sciences.
Research focuses on the production of magmas in the Aleutian arc using experiments
and geochemical modeling.

Massachusetts Institute of Technology Cambridge, MA
Ph.D. Department of Earth, Atmospheric and Planetary Sciences, January 2012.
Thesis: Petrology and Geochemistry of High Degree Mantle Melts.

Harvard University Cambridge, MA
BA, Earth and Planetary Sciences, Cum Laude, June 2005. Senior Thesis: The
Predicted Seismic Velocity of the Mantle Transition Zone Based on High Pressure
Phase Equilibria Experiments.

Awards National Merit Scholarship (2001-2005), Awarded best senior thesis by Harvard
Geology Club (2005).

Research Experience **MIT, Department of Earth, Atmospheric and Planetary Sciences**
Advisor: Advisor Name Cambridge, MA

- Currently quantifying the pressure, temperature, and composition of the source region of Aleutian arc magmas. Focus is on the effect of water on phase relations.
- Work involves high pressure experiments, analyses of experimental charges, and geochemical modeling of data. (Jan. 2006-2012)

MIT, Department of Earth, Atmospheric and Planetary Sciences
Advisor: Advisor Name Cambridge, MA

- Experimentally determined the thermodynamic effect of water on high degree mantle melting.
- Incorporated experimental data into a predictive thermodynamic model of hydrous mantle melting.
- Estimated the secular cooling of the Earth's mantle by applying predictive model to subduction magmas from 0 to 3.5 Ga.
- Employed trace element modeling to estimate the effect of metamorphism on Barberton komatiite bulk samples and to constrain their tectonic setting.

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- Modeled the flow of mantle in subduction zones using pre-existing finite element codes. This geodynamic study was combined with petrologic data to constrain the temperature and viscosity structure of the sub-arc mantle.
- Determined the solubility of He in olivine with the goal of understanding the extent of degassing and convection in the deep mantle.
- Other experimental projects include the solubility of Fe in AuPd alloys, textural studies of komatiites, and development of the multi-anvil device at MIT. (2005-2012)

Harvard University, Department of Earth and Planetary Sciences

Advisor: Advisor Name Cambridge, MA

- Constrained the composition of the mantle transition zone by comparing observed and predicted seismic velocities.
- Work involved running ultra-high pressure (up to 2.3 GPa) phase equilibrium experiments and analyzing results with electron microprobe. The measured phase proportions and compositions were used to calculate the seismic velocities of the mantle at transition zone pressures. The calculations were used to evaluate various compositional models. (June, 2003 - June, 2005)

Teaching Experience

Boston University, Department of Earth Sciences Boston, MA
Introduction to Geochemistry. Lecturer (1 term replacement position).

- Responsible for entire curriculum. Developed a coherent framework under which the disparate fields of high-temperature igneous geochemistry and low-temperature aqueous geochemistry could be seen as different applications of the same geochemical principles.
- Initiated use of computer modeling in teaching geochemical principles. Have focused on teaching students fungible geochemical skills. (Jan. 2012-present)

MIT, Dept. of Earth, Atm. and Planet. Sciences Cambridge, MA
Mineralogy. Teaching Assistant.
Responsible for teaching lab component of class. Assisted in development of lab curriculum. Updated and revised existing lab assignments. (Fall, 2009)

MIT, Dept. of Earth, Atm. and Planet. Sciences Cambridge, MA
Igneous, Metamorphic, and Sedimentary Petrology. Teaching Assistant.
Responsible for teaching lab component of class. Assisted in development of lab curriculum. This was the first time this class was taught. Previously existed as three separate classes. Challenge was to compress three semesters of work into one, while sacrificing as little content as possible. (Fall, 2007)

MIT, Dept. of Earth, Atm. and Planet. Sciences Cambridge, MA
Beyond the Solar System. Teaching Assistant.
Assisted with labs. Graded homework assignments. (Spring, 2006)

Presentations

Anonymous Student 1, Grove TL, Dann JC (Kaapvaal conference, 2011) The generation of Barberton komatiites in an Archean subduction zone.

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Anonymous Student 1, Grove TL, Dann JC (Komatiites, Norites, Boninites and Basalts, 2010) Petrologic and experimental evidence for high H₂O contents in Barberton komatiite magmas.

Anonymous Student 1, Grove TL (Goldschmidt, 2010) Compositional effects of H₂O on ol-opx saturated melts.

Dann J, de Wit M, Grove TL and Anonymous Student 1 (IAVCEI, Cape Town, 2009) Segregation vesicles in 3.5 Ga komatiites: Barberton, South Africa.

Anonymous Student 1, Grove TL (Spring AGU, 2009) High pressure water under-saturated liquidus phase relations of komatiite from the Barberton Mountainland, South Africa.

Anonymous Student 1, Holzheid AD, Grove TL (First International Pressure Calibration Workshop, 2008) Precision and accuracy of pressure in a Walker style multi-anvil device.

Grove TL, Gaetani GA, Anonymous Student 1, Elkins LT (Materials Recycling near convergent plate boundaries, Carnegie Inst. of Washington, Puerto Azul, Philippines, 2008) Mass transfer processes in the southern cascade subduction zone: the influence of variable water content on mantle melting.

Grove TL, Gaetani G, Anonymous Student 1, Dann J, de Wit M (Spring AGU, 2007) Origin of spinifex textures in 3.49 Ga komatiite magmas from the Barberton Mountainland, South Africa.

Anonymous Student 1, Grove TL, Dann J, de Wit M (Spring AGU, 2007) Pyroxene compositions in 3.49 Ga Barberton komatiite: evidence of variable H₂O contents.

Anonymous Student 1, Grove TL, Shimizu N, Dann J, de Wit M (Fall AGU, 2007) Magmatic trace and minor element abundances in Barberton komatiites inferred from augite compositions.

Anonymous Student 1, Grove TL, Dann J, de Wit M (Spring AGU, 2006) Quantitative estimates of the chemical composition and liquidus temperatures of komatiite magmas from the Barberton Mountainland, South Africa.

Agee CB, Anonymous Student 1 (Fall AGU, 2004) Upper mantle transition zone: a remnant of primordial differentiation?

Agee CB, Li J, Anonymous Student 1 (Spring AGU, 2004) P-T phase diagram for the Allende Meteorite.

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Publications

Anonymous Student 1, Grove TL, Dann JC, and de Wit MJ (accepted, Feb. 2012) *Boninites, komatiites, and Archean subduction zones*. Geophysical Research Letters.

Grove TL, Anonymous Student 1, and Dann JC (2010) *Conditions of magma generation for Archean komatiites from the Barberton Mountainland, South Africa*. In *Mantle Petrology: Field Observations and High Pressure Experimentation: A tribute to Francis R. (Joe) Boyd*. The Geochemical Society, Special Publication 6, Y Fei, C.M. Bertka and B.O. Mysen, eds., p. 155-167.

Anonymous Student 1, Dann JC, Grove TL and de Wit MJ (2008) *Emplacement conditions of komatiite magmas from the 3.49 Ga Komati formation, Barberton Greenstone Belt, South Africa*. Earth Planet. Sci. Lett. 150, p. 303-323.

Activities

Member, American Geophysical Union, 2005-present. Communications Director, Friends of Cambridgeport School, 2001-present. Chairman of the Board, Agassiz Cooperative Pre-School, 2000-2001. Officer, Harvard Geology Club, 1996-1997.

References

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