

Donald G. Isaak

Executive Director
Office of Research and Grants
Azusa Pacific University
Azusa, California 91702-7000

phone: (626) 815-6000 (ext. 3796)
email: disaak@apu.edu

Education

University of Redlands	Physics	B.Sc., 1973
Pennsylvania State University	Geophysics	M.Sc., 1975
UCLA	Geophysics	Ph.D., 1991

Appointments and Experience

1975-1978	Mathematics and Science Faculty, Langtang Government Secondary School, Plateau State, Nigeria, Africa
1978-1980	Mathematics and Science Faculty, Baptist High School, Plateau State, Nigeria, Africa
1980-1985	Faculty, Department of Physics, University of Liberia, Liberia, Africa Chair, Department of Physics, University of Liberia, Liberia, Africa (1983-1984)
1987-1989	Collaborating Scientist (part-time), Shock Physics Group, Los Alamos National Laboratory
1991-1992	National Research Council Fellow (post-doctoral position), Complex Systems Theory Group, Naval Research Laboratory, Washington, DC
1992-2006	Faculty (Department Chair 1996-2006), Department of Mathematics and Physics, Azusa Pacific University Chair, Department of Mathematics and Physics, Azusa Pacific University (1996-2006) Associate Research Geophysicist I, Institute of Geophysics and Planetary Physics, UCLA
2006-2015	Associate Dean, College of Liberal Arts & Sciences, Azusa Pacific University Interim Dean, College of Liberal Arts & Sciences, Azusa Pacific University (2013-2014)
2014-2015	Interim Executive Director, Office of Research and Grants, Azusa Pacific University (part-time while also serving as Associate Dean of College of Liberal Arts & Sciences)
2015-	Executive Director, Office of Research and Grants, Azusa Pacific University

Azusa Pacific University Awards Received

1. Teaching Excellence and Campus Leadership Award, 1998, \$3,000 prize.

2. Scholarly Achievement Award, 2006, \$3,000 prize.

External Research Grants Awarded since 2000

1. Title: High Temperature Elasticity of Pyroxenes
Role: PI
Funding Agency: National Science Foundation
Host Institution: Institute of Geophysics and Planetary Physics, UCLA
Amount: \$270,000
Dates: July 2000 through June 2003
2. Title: Collaborative Research - Elasticity of Hot-Pressed Polycrystalline Minerals of the Earth's Transition Zone
Role: PI (Collaboration with Gabriel Gwanmesia, Delaware State University)
Funding Agency: National Science Foundation
Host Institution: Institute of Geophysics and Planetary Physics, UCLA
Amount: \$198,000
Dates: July 2004 through June 2007
3. Title: Thermoelasticity of SSP Materials: An Integrated Acoustic and Diffraction Study at High-P and High-T
Role: Co-I (PI Baosheng Li, State University of New York Stony Brook)
Funding Agency: Department of Energy
Host Institution: Institute of Geophysics and Planetary Physics, UCLA
Amount: \$161,627
Dates: 2005-2007

Other Contributions

1. Associate Editor of Journal of Geophysical Research (1996-1999)
2. Associate Editor of *American Mineralogist* (2000-2005)
3. Peer reviewed 65+ journal manuscripts for: *Geophysical Research Letters*, *Journal of Geophysical Research*, *Physica B*, *physica status solidi*, *Journal of Physics and Chemistry of Solids*, *American Mineralogist*, *Physics Today*, *Journal of Acoustical Society of America*, *Physics of the Earth and Planetary Interiors*, *Physics and Chemistry of Minerals*, *High Temperatures-High Pressures*, *Geosciences Journal*, *Journal of Alloys and Compounds*, *Physical Review* (1995-2016)

4. Reviewed 30+ major research proposals for NSF Directorate for Geosciences (2000-2016)
5. Southern California Conference on Undergraduate Research (SCCUR) presentations with APU students (1994, 1995, 2003, 2004, 2010, 2012, 2013, 2014)

Publications (APU student/staff collaborators in bold red)

1. Isaak, D.G., and E.K. Graham, The elastic properties of an almandine-spessartine garnet and elasticity in the garnet solid solution series, *J. Geophys. Res.*, *81*, 2483-2489, 1976
2. Anderson, O.L., D.G. Isaak, and S. Yamamoto, Anharmonicity and the equation of state for gold, *J. Appl. Phys.*, *65*, 1534-1543, 1989
3. Isaak, D.G., O.L. Anderson, T. Goto, and I. Suzuki, Elasticity of single-crystal forsterite measured to 1700 K, *J. Geophys. Res.*, *94*, 5895-5906, 1989
4. Isaak, D.G., O.L. Anderson, and T. Goto, Measured elastic moduli of single-crystal MgO up to 1800K, *Phys. Chem. Minerals*, *16*, 704-713, 1989
5. McQueen, R.G. and D.G. Isaak, Bromoform (CHBr₃) - A very high pressure shock-wave analyzer, in *Shock Compression of Condensed Matter*, S.C. Schmidt, J.N. Johnson, and L.W. Davison (eds.), Elsevier Science Publishers, pp. 125-128, 1990. Proceedings of the August 1989 APS Topical Conference on Shock Compression of Condensed Matter, Albuquerque, New Mexico
6. Isaak, D.G., R.E. Cohen, and M.J. Mehl, Calculated elastic and thermal properties of MgO at high pressures and temperatures, *J. Geophys. Res.*, *95*, 7055-7067, 1990
7. Cynn, H., D.G. Isaak, R.E. Cohen, M.F. Nicol, and O.L. Anderson, A high pressure phase transition of corundum predicted by the Potential Induced Breathing model, *Am. Mineral.*, *75*, 439-442, 1990
8. McQueen, R.G. and D.G. Isaak, Characterizing windows for shock wave radiation studies, *J. Geophys. Res.*, *95*, 21753-21765, 1990
9. Cohen, R.E. and D. G. Isaak, Comments on 'Thermodynamics and elastic properties of a many-body model for simple oxides', *Phys. Rev. B*, *44*, 1991
10. Anderson, O.L., D.G. Isaak, and H. Oda, Thermoelastic parameters for six minerals at high temperature, *J. Geophys. Res.*, *96*, 18037-18046, 1991
11. Isaak, D.G., High temperature elasticity of iron-bearing olivines, *J. Geophys. Res.*, *97*, 1871-1885, 1992
12. Isaak, D.G., O.L. Anderson, and H. Oda, High temperature thermal expansion and elasticity of calcium-rich garnets, *Phys. Chem. Mineral.*, *19*, 106-120, 1992
13. Oda, H., O.L. Anderson, D.G. Isaak, and I. Suzuki, Measurement of elastic properties of single-crystal CaO up to 1200 K, *Phys. Chem. Mineral.*, *19*, 96-105, 1992
14. Isaak, D.G., O.L. Anderson, and R. Cohen, The relationship between shear and compressional velocities at high pressures: reconciliation of seismic tomography and mineral physics, *Geophys. Res. Lett.*, *19*, 741-744, 1992
15. Anderson, O.L., D.G. Isaak, and H. Oda, A model for the computation of thermal expansivity at high compression and high temperatures: MgO as an example, *Geophys. Res. Lett.*, *19*, 1987-1990, 1992
16. Anderson, O.L., D.G. Isaak, and H. Oda, High temperature elastic constant data on minerals relevant to geophysics, *Rev. Geophys. and Space Phys.*, *30*, 57-90, 1992
17. Isaak, D.G., The mixed P,T derivatives of elastic moduli and implications on extrapolating throughout Earth's mantle, *Phys. of Earth and Planet. Int.*, *80*, 37-48, 1993

18. Anderson, O.L., H. Oda, D.G. Isaak, A. Chopelas, A thermodynamic theory of the Gruneisen ratio: MgO as an example, *Phys. Chem. Mineral.*, *19*, 369-380, 1993
19. Isaak, D.G., R.E. Cohen, M.J. Mehl, and D.J. Singh, Phase stability of wustite at high pressure from first-principles linearized augmented plane-wave calculations, *Phys. Rev. B*, *47*, 7720-7731, 1993
20. Isaak, D.G., E.K. Graham, J.D. Bass, and H. Wang, The elastic properties of single-crystal fayalite as determined by dynamical measurement techniques, *Pure and Appl. Geophysics*, *141*, 393-414, 1993
21. Anderson, O.L., and D.G. Isaak, Accuracy in measurements and the temperature and volume dependence of thermoelastic parameters, *Pure and Appl. Geophysics*, *141*, 327-339, 1993
22. Anderson, O.L., and D.G. Isaak, The dependence of the Anderson-Gruneisen parameter ΔT upon compression at extreme conditions, *J. Phys. Chem. Solids*, *54*, 221-227, 1993
23. Isaak, D.G., and K. Masuda, Elastic and viscoelastic properties of alpha-iron at high temperatures, *J. Geophys. Res.*, *100*, 17689-17698, 1995
24. Cynn, H., O.L. Anderson, D.G. Isaak, and M. Nicol, Gruneisen ratios of MgO from the calculation of entropy, *J. of Physical Chemistry*, *99*, 7813-7818, 1995
25. Anderson, O.L., and D.G. Isaak, Elastic constants of mantle minerals at high temperature, in *Mineral Physics and Crystallography: A Handbook of Physical Constants*, ed. Thomas J. Ahrens, American Geophysical Union, 1995
26. Anderson, O.L., K. Masuda, and D.G. Isaak, A new thermodynamic approach for high-pressure physics, *Phys. of Earth and Planet. Int.*, *91*, 3-16, 1995
27. Anderson, O.L., K. Masuda, and D.G. Isaak, Limits on the value of ΔT and γ for MgSiO₃ perovskite, *Phys. of Earth and Planet. Int.*, *98*, 31-46, 1996
28. Cohen, R.E., I. Mazin, and D.G. Isaak, Magnetic collapse in transition metal oxides at high pressure: implications for the Earth, *Science*, *275*, 654-657, 1997
29. Cynn, H., D.G. Isaak, and O.L. Anderson, Elastic properties of forsterite at high pressure obtained from the high-temperature database, in *Properties of Earth and Planetary Materials at High Pressures and Temperatures*, *Geophysical Monograph 101*, American Geophysical Union, pp. 345-355, 1998
30. Prikhodko, S.V., **J.D. Carnes**, D.G. Isaak, and A.J. Ardell, Elastic constants of a Ni-12.69 At.% Al alloy from 295 to 1300 K, *Scripta Materialia*, *38*, 67-72, 1998
31. Zhang, H., R.S. Sorbello, C. Hucho, J. Herro, J.R. Feller, D. Beck, M. Levy, D.G. Isaak, **J.D. Carnes**, and O.L. Anderson, Radiation impedance of resonant ultrasound spectroscopy modes in fused silica, *J. Acoust. Soc. Am.*, *103*, 2385-2394, 1998
32. Isaak, D.G., **J.D. Carnes**, H. Cynn, and **E. Hake**, Elasticity of TiO₂ rutile to 1800 K, *Phys. Chem. Minerals*, *26*, 31-43, 1998
33. Isaak, D.G., **J.D. Carnes**, O.L. Anderson, and H. Oda, Elasticity of fused silica spheres under pressure using resonant ultrasound spectroscopy, *J. Acoust. Soc. Am.*, *104*, 2200-2206, 1998
34. Cohen, R.E., Y. Fei, R. Downs, I.I. Mazin, and D.G. Isaak, Magnetic collapse and the behavior of transition metal oxides: FeO at high pressures, *Mat. Res. Soc. Symp. Proc.*, *Vol. 499*, 27-37, 1998
35. Prikhodko, S.V., J.D. Carnes, D.G. Isaak, H. Yang, and A.J. Ardell, Temperature and composition dependence of the elastic constants of Ni₃Al, *Metall. and Mat. Trans.*, *30A*, 2403-2408, 1999

36. Sorbello, R.S., J. Feller, M. Levy, D.G. Isaak, **J.D. Carnes**, and O.L. Anderson, The effect of gas loading on the RUS spectra of spheres, *J. Acoust. Soc. Am.*, *107*, 808-818, 2000
37. Liebermann, R.C., and D.G. Isaak, Dedication to Orson L. Anderson, *Am. Mineral.*, *85*, 269, 2000
38. Stacey, F.D., and D.G. Isaak, Extrapolation of lower mantle properties to zero pressure: Constraints on composition and temperature, *Am. Mineral.*, *85*, 345-353, 2000
39. Anderson, O.L., and D.G. Isaak, Calculated melting curves for phases of iron, *Am. Mineral.*, *85*, 376-385, 2000
40. Isaak, D.G., Elastic properties of minerals and planetary objects, in *Handbook of Elastic Properties of Solids, Liquids, and Gases: Volume III: Elastic Properties of Solids: Biological and Organic Material, Earth and Marine Sciences*, ed. by Levy, Bass, and Stern. Academic Press, 2001
41. Stacey, F.D., and D.G. Isaak, Compositional constraints on the equation of state and thermal properties of the lower mantle, *Geophys. J. Int.*, *146*, 143-154, 2001
42. Anderson, O.L., and D.G. Isaak, Another look at the core density deficit of Earth's outer core, *Phys. of Earth and Planet. Int.* *131*, 19-27, 2002
43. Isaak, D.G., and O.L. Anderson, Thermal expansivity of HCP iron at very high pressure and temperature, *Physica B*, *328*, 345-354, 2003
44. Isaak, D.G., and I. Ohno, Elastic constants of chrome-diopside: application of resonant ultrasound spectroscopy to monoclinic single-crystals, *Phys. Chem. Minerals*, *30*, 430-439, 2003
45. Prikhodko, S.V., D.G. Isaak, **J.D. Carnes**, **S. Moser**, Y. Ma, and A.J. Ardell, Elastic constants of face-centered cubic and L1₂ Ni-Si alloys: composition and temperature dependence, *Met. Mat. Trans. A*, *34A*, 1863-1868, 2003
46. Anderson, O.L., D.G. Isaak, and V.E. Nelson, The high-pressure melting temperature of hexagonal close-packed iron determined from thermal physics, *J. Phys. Chem. Solids*, *64*, 2125-2131, 2003
47. Stacey, F.D., and D.G. Isaak, Anharmonicity in mineral physics: a physical interpretation, *J. Geophys. Res.*, *108*, ECV 5:1-6, 2003
48. Isaak, D.G., I. Ohno, and **P.C. Lee**, The elastic constants of monoclinic single-crystal chrome-diopside to 1,300 K, *Phys. Chem. Minerals*, *32*, 691-699, 2006
49. Prikhodko, S.V., D.G. Isaak, **E. Fisher**, N.V. Starostina, Y. Ma, and A.J. Ardel, The elastic constants of FCC Ni-Ga and Ni-Ge alloys up to 1100 K, *Scripta Materialia*, *54*, 1327-1330, 2006
50. Isaak, D.G., G.D. Gwanmesia, **D. Falde**, **M.G. Davis**, R.S. Triplett, L. Wang, The elastic properties of β -Mg₂SiO₄ from 295 to 660 K and implications on the composition of Earth's upper mantle, *Phys. of Earth and Planet. Int.* *162*, 22-31, 2007
51. Isaak, D.G., G.D. Gwanmesia, **M.G. Davis**, **S.C. Stafford**, **A.M. Stafford**, R.S. Triplett, The temperature dependence of the elasticity of Fe-bearing wadsleyite, *Phys. of Earth and Planet. Int.* *182*, 107-112, 2010
52. Isaak, D., **S. Moser**, Elasticity of single-crystal wüstite at ambient and elevated temperature from resonant ultrasound spectroscopy, *J. Phys. Chem. Solids*, *74*, 879-885, 2013
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