

**GEORGE E. HARLOW**  
CURATOR AND FULL PROFESSOR  
DEPARTMENT OF EARTH & PLANETARY SCIENCES

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**HIGHEST DEGREE EARNED**

Ph.D.

**AREA OF SPECIALIZATION**

Mineralogy; crystallography; geology; particularly Jadeite rock

**EDUCATIONAL EXPERIENCE**

B.A. Harvard University, 1971, magna cum laude

Ph.D. Princeton University, 1977

**PREVIOUS EXPERIENCE IN DOCTORAL EDUCATION**

CLASSES

Graduate courses in the theory and techniques in mineralogical crystallography and crystal chemistry (once at Princeton, three times for Columbia). "Rock-forming Minerals," W4115, Columbia University

ADVISING

Robert Klimentidis, M.S.

Kyla Simons, Ph.D.

Yongshan Dai, post-doc

Aley El Shazly, post-doc

Franco Mancini, post-doc

Rondi Davies, post-doc

**RESEARCH**

CURRENT PROJECTS

1. Jadeitites, albitites, eclogites, metabasites, serpentinite, and related rocks from Guatemala, Japan, Myanmar, Kazakhstan, Russia and elsewhere.
2. Mineralogy and paragenesis of minerals from the marble-hosted ruby deposits of Myanmar
3. Characterization of mineral standards for spectroscopic analysis
4. Conventional and Micromineral Crystallography of Minerals

**PUBLICATIONS (2006-2011)**

Martens, U., Flores, K., Brueckner, H.K., and Harlow, G.E. (in review) Jadeitite formed during subduction: Dating constraints from Guatemala and elsewhere. *Geology*.

Harlow, G.E., and Flores, K.E. (in review) Jadeite Jade: Origin, Sources, Varieties and Exploration. *Acta Petrologica et Mineralogica*.

- Cárdenas Párraga J., García-Casco, A., Harlow, G.E., Blanco-Quintero, I., Rojas Agramonte, K., Kröner, A. (in press): Hydrothermal origin and age of jadeitites from Sierra del Convento Mélange (Eastern Cuba). *European Journal of Mineralogy*
- Shi, G.H., Harlow, G.E., Wang, J., Wang, J., Ng, E., Wang, X., Cao, S.M. (in review): Mineralogical studies and reviews of jadeitites and related rocks from Myanmar. *European Journal of Mineralogy*
- Tsujimori, T., Harlow, G.E. (in review): Petrogenetic relations between jadeitite and associated high-pressure and low-temperature metamorphic rocks in worldwide jadeitite localities: A review. *European Journal of Mineralogy*.
- Harlow, G.E., Summerfield, G.R., Davies, H., and Matisoo-Smith L. (in review) A jade gouge from Emirau island, Papua-New Guinea (Early Lapita context: 3300 BP): A unique jadeitite. *European Journal of Mineralogy*.
- Brusentsova, T.N., Peale, R.E., Maukonen, D., Figueiredo, P., Harlow, G.E., Ebel, D.S., Nissinboim, A., Sherman, K., and Lisse, C.M. (in review) Laboratory far-IR spectroscopy of terrestrial sulfides particles: providing the spectral data for space IR missions return.
- Anders, M.H., Fouke, B.W., Zerkle, A.L., Tavarnelli, E., Alvarez, W. and Harlow, G.E. (2010) The Role of Calcining and Basal Fluidization in the Long Runout of Carbonate Slides: An Example from the Heart Mountain Slide Block, Wyoming and Montana, U.S.A. *Journal of Geology* 118, 577-599.
- Davies, R.M., and Harlow, G.E. (in prep.) The high-pressure stability of K-cymrite and associated phases in the system  $KAlSi_3O_8-H_2O$ : A reservoir for K and  $H_2O$  in subduction zones and the upper mantle.
- Kane, R.E., Harlow, G.E. and Han Htun (in prep.) The Hkamti District Jadeite Mines Area: Nansibon, Burma (Myanmar). For: *Gems and Gemology*.
- Harlow, G.E., Rossman, G.R., Matsubara, S., and Miyajima, H. (in prep.) Blue omphacite in jadeitites from Guatemala and Japan. *American Mineralogist*.
- Cárdenas-Párraga, J., García-Casco, A., Núñez-Cambra, K., Rodríguez-Vega, A., Francisco Blanco-Quintero, I., Harlow, G.E., and Lázaro, C. (2010) Jadeitite jade occurrence from the Sierra del Convento mélange (eastern Cuba). *Boletín de la Sociedad Geológica Mexicana* 62(1), 199-205.
- Brusentsova, T.N., Peale, R.E., Maukonen, D., Harlow, G.E., Boesenberg, J.S., and Ebel, D.S. (2010) Far infrared spectroscopy of the carbonate minerals. *American Mineralogist* 95, 1515-1522.
- Harlow, G.E., Sisson, V.B., and Sorensen, S.S. (2011) Jadeitite from Guatemala: Distinctions among multiple sources. *Geologica Acta* DOI: 10.1344/105.000001694.
- Fu, B. Valley, J.W., Kita, N.T., Spicuzza, M.J., Paton, C., Tsujimori, T., Bröcker, M., and Harlow, G.E. (2009) Origin of zircons in jadeitite. *Contributions to Mineralogy and Petrology* 159, 769–780.
- Brueckner, H.K., Avé Lallemant, H.G., Sisson, V.B., Harlow, G.E., Hemming, S.R., Sorensen, S. S., Tsujimori, T. and Martens, U. (2009) Metamorphic reworking of a high-pressure-low temperature mélange along the Motagua fault, Guatemala: A revised record of Neocomian and Maastrichtian transpressional tectonics. *Earth and Planetary Science Letters* 284, 228-235.

- Sorensen, S.S., Sisson, V.B., Harlow, G.E., and Avé Lallemand, H.G. (2010) Element Residence and Transport During Subduction Zone Metasomatism: Evidence from a Jadeitite-Serpentinite Contact, Guatemala. *International Geology Review* 52 (9), 899-940.
- Francis, A.H., Avé Lallemand, H.G., Sisson, V.B., Harlow, G.E., Donnelly, T.W., Chiquin, M., Roden-Tice, M.K., Hemming, S.R., and Brueckner, H.K. (in review.) Two structurally very distinct subduction complexes along the Motagua (Guatemala) suture zone. *Bulletin, Geol. Soc. Amer.*
- Simons, K.K., Harlow, G.E., Sorensen, S.S. Brueckner, H.K., Goldstein, S.L., Hemming, N.G., and Langmuir, C.H. (in press) Lithium isotopes in Guatemala and Franciscan HP-LT Rocks: insights into the role of sediment-derived fluids in the mantle wedge. *Geochimica et Cosmochimica Acta* 74, 3621-3641..
- Harlow, G.E., and Hawthorne, F.C. (2008) Herderite from Mogok, Myanmar, and comparison with hydroxyl-herderite from Ehrenfriedersdorf, Germany. *American Mineralogist* 93, 1545-1549.
- Hawthorne, F.C., and Harlow, G.E. (2008) The crystal chemistry of Al-rich amphiboles: Sadanagaite and potassic-ferrisadanagaite. *Canadian Mineralogist* 46, 151-162.
- Martens, U., Solari, L., Sisson, V., Harlow, G., Torres de León, R., Ligorra, J.P., Tsujimori, T., Ortega, F., Brueckner, H., Giunta, G., Ave Lallemand, H. (2007) Field trip guide – First Field Workshop of IGCP 546 “Subduction Zones of the Caribbean:” High-pressure belts of central Guatemala: The Motagua Suture and the Chuacús Complex. 36 p.  
[http://www.ugr.es/~agcasco/igcp546/Guate07/IGCP546\\_Guatemala2007\\_FieldTripGuide.pdf](http://www.ugr.es/~agcasco/igcp546/Guate07/IGCP546_Guatemala2007_FieldTripGuide.pdf)
- Harlow, G.E., S.S. Sorensen, and V.B. Sisson. 2007. The geology of jade deposits. *In* L.A. Groat (editor), *The geology of gem deposits. Short Course Handbook Series 37: 207-254.* Mineralogical Association of Canada, Quebec.
- Bindi, L., R.T. Downs, G.E. Harlow, O.G. Safonov, Y.A. Litvin, L.L. Perchuk, H. Uchida, and S. Menchetti. 2006. Compressibility of synthetic potassium-rich clinopyroxene: in situ high-pressure single-crystal X-ray study. *American Mineralogist* 91: 802-808.
- Harlow, G.E., A.R. Murphy, D.J. Hozjan, C.N. de Mille, and A.A. Levinson. 2006. Pre-Columbian jadeite axes from Antigua, West Indies: description and possible sources. *Canadian Mineralogist* 44: 305-321.
- Sorensen, S., G.E. Harlow, and D. Rumble. 2006. The origin of jadeitite-forming subduction zone fluids: CL-guided SIMS oxygen isotope and trace element evidence. *American Mineralogist* 91: 979-996.
- Tsujimori T., V.B. Sisson, J.G. Liou, G.E. Harlow, and S.S. Sorensen. 2006. Very-low-temperature record in subduction process: A review of worldwide lawsonite eclogites. *Lithos* 92; 609-924. doi:10.1016/j.lithos.2006.03.054.
- Tsujimori, T., V.B. Sisson, J.G. Liou, G.E. Harlow, and S.S. Sorensen. 2006. Petrologic characterization of Guatemalan lawsonite-eclogite: direct information on eclogitization of subducted oceanic crust in a cold subduction zone. *In* B.H. Hacker, W.C. McClelland and J.G. Liou (editors), *Ultrahigh-pressure metamorphism: deep continental subduction.* Geological Society of America Special Paper 403: 147-168.

**SPECIAL RECOGNITION/AWARDS**

Mineralogical Society of America (Fellow – 1996; Secretary 2004-7)

American Geophysical Union

Geological Society of America

Society of Mineral Museum Professionals (president 1993-1996, secretary 1996 – 2000,  
board member, 1993-2005)