

## CURRICULUM VITÆ

JOHN A. GOFF, Senior Research Scientist

Institute for Geophysics, Jackson School of Geosciences, University of Texas at Austin

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- Education      Brown University: Sc.B. Geology-Physics-Math, 1985  
MIT/WHOI Joint Program in Oceanography: Ph.D. Marine Geophysics, 1990
- Positions      Post-doctoral Investigator, MIT (6/90-12/91);  
Guest/Visiting Investigator, Woods Hole Oceanographic Institution (9/90-12/92)  
Research Associate, University of Texas Institute for Geophysics (1/93-8/99)  
Research Scientist, UTIG (9/99-8/04)  
Senior Research Scientist, UTIG (9/04-present)
- Sea-Going      1988 *R/V Thomas Washington*, Roundabout Leg 10, Sea Beam mapping  
Field            1991 *R/V Cory Chouest*, ARSRP Acoustic Reconnaissance Cruise  
Experience      1991 *R/V Maurice Ewing*, EW9105, Hydrosweep mapping (shore participation)  
1992 *R/V Maurice Ewing*, ARSRP Geophys. Recon. Hydrosweep mapping  
1993 *R/V Knorr*, ARSRP Small-Scale Recon, AMS-120 and Jason ROV surveys  
1994 *R/V Knorr*, DeepTAG 94, AMS-120 and ARGOII survey  
1995 *R/V Melville*, SEIR Sea Beam 2000 multibeam survey  
1995 *R/V Pacific Hunter*, Co-Chief Scientist, N. Calif. swath mapping  
1996 *CHS Creed*; Co-Chief Scientist, New Jersey swath mapping  
1996 *R/V Wecoma*; STRATAFORM high-res seismic reflection, N. California  
1997 *R/V Point Lobos* MBARI ROV exploration of Eel margin  
1998 *R/V Onrust*, Chief Scientist, sediment grab sampling on the NJ Margin  
1999 *R/V Onrust*, Chief Scientist, chirp seismic reflection on the NJ Margin  
2000 *R/V Cape Hatteras*, Co-Chief Scientist, chirp seismic on VA outer shelf  
2001 *R/V Alliance*, Geoclutter acoustic reconnaissance  
2001 *R/V Cape Henlopen*, Chief Scientist, Geoclutter sampling on NJ shelf  
2001 *R/V Endeavor*, Co-Chief Scientist, Geoclutter chirp seismic on NJ shelf  
2002 *R/V Cape Henlopen*, Chief Scientist, site survey for the Martha's Vineyard  
coastal observatory (vibracoring, sampling, geotechnical and chirp seismic).  
2002 *R/V Knorr*, AHC-800 drilling on the NJ shelf  
2004 *R/V Henlopen*, Chief Scientist, swath mapping on the NJ shelf  
2006 *R/V Sharp*, Co-chief Scientist, chirp survey on NJ shelf  
2007 *R/V Knorr*, Chief Scientist, vibracoring on the NJ shelf  
2008 *R/V Acadiana*, *R/V Itasca*, co-instructor for JSG MG&G field course.  
2008 *R/V Acadiana*, co-PI, Hurricane Ike rapid response survey  
2009 *R/V Manta*, co-instructor for JSG MG&G field course
- Service        Associate Editor, *Journal of Geophysical Research* (1/95-12/97)  
Director, Dec. 1995 AGU Outstanding Student Presentation Award  
Committee, Tectonophysics section  
Chair, AGU Tectonophysics Section Nominations Committee (9/98-6/02)  
Earth Processes/Tectonophysics & Seismology Editor, *Eos* (1/99-1/03)  
*Eos* Editorial Steering Committee (4/00-1/03)  
*IEEE-JOE* guest editor (1/05 – 6/06)
- Honors        Excellence in Reviewing, American Geophysical Union, 2008  
Excellence in Reviewing, *IEEE Journal of Oceanic Engineering*, 2009

Students Advised A. Macario (LDEO), S. Dreher (IFREMER), J. Riter (UT), C. S. Duncan (UTIG), L. LaFlame (Rice), S. Nordfjord (UTIG), V. Merwadi, (UT Civil Engineering), Andrew Green (University of KwaZulu-Natal), M. Santra (UTDGS), Stanley Stackhouse (UTDGS)

Courses Taught Marine Geology and Geophysics Field Course

Professional Societies: American Geophysical Union, International Association of Sedimentologist, Acoustical Society of America

Research Marine geophysics; seabed mapping and characterization; quantitative Geomorphology (bathymetry, stratigraphy, sea ice, crustal heterogeneity)

### Refereed Publications:

- Goff, J. A., E. A. Bergman, and S. C. Solomon, Earthquake source mechanisms and transform fault tectonics in the Gulf of California, *J. Geophys. Res.*, *92*, 10,485-10,510, 1987.
- Goff, J. A., and T. H. Jordan, Stochastic Modeling of Seafloor Morphology: Inversion of Sea Beam data for second-order statistics, *J. Geophys. Res.*, *93*, 13,589-13,608, 1988.
- Goff, J. A., and T. H. Jordan, Stochastic Modeling of Seafloor Morphology: a parameterized, Gaussian model, *Geophys. Res. Lett.*, *16*, 45-48, 1989a.
- Goff, J. A., and T. H. Jordan, Stochastic Modeling of Seafloor Morphology: resolution of topographic parameters by Sea Beam data, *IEEE J. Ocean Eng.*, *14*, 326-337, 1989b.
- Goff, J. A., and T. H. Jordan, Pacific and Atlantic models of small-scale seafloor topography, *Office of Naval Research S. R. P. on Acoustic Reverberation*, Technical Report No. 1, 1990.
- Goff, J. A., Stochastic Modeling of Seafloor Morphology (Ph.D. Thesis), Massachusetts Institute of Technology/Woods Hole Oceanographic Institution, Cambridge, 266 pp., 1990a.
- Goff, J. A., Comment on "Fractal mapping of digitized images: application to the topography of Arizona and comparison with synthetic images" by J. Huang and D. L. Turcotte, *J. Geophys. Res.*, *95*, 5159, 1990b.
- Goff, J. A., T. H. Jordan, M. H. Edwards, and D. J. Fornari, Comparison of a stochastic seafloor model with SeaMARC II bathymetry and Sea Beam data near the East Pacific Rise 13° - 15° N, *J. Geophys. Res.*, *96*, 3867-3885, 1991.
- Goff, J. A., A global and regional stochastic analysis of near-ridge abyssal hill morphology, *J. Geophys. Res.*, *96*, 21,713-21,737, 1991.
- Goff, J. A., and M. C. Kleinrock, Quantitative comparison of bathymetric survey systems, *Geophys. Res. Lett.*, *18*, 1253-1256, 1991.
- Goff, J. A., H. F. Webb, and T. H. Jordan, Stochastic interpolation of a wide-beam bathymetric profile within the ONR-ARSRP corridor, *Office of Naval Research S. R. P. on Acoustic Reverberation*, Technical Report No. 2, 1992.
- Goff, J. A., Quantitative characterization of abyssal hill morphology along flow lines in the Atlantic Ocean, *J. Geophys. Res.*, *97*, 9183-9202, 1992a.
- Goff, J. A., Monostatic shadowing of homogeneous fractal surfaces, *J. Acoust. Soc. Am.*, *92*, 1008-1016, 1992b.
- Goff, J. A., A. Malinverano, D.J. Fornai, and J.R. Cochran, Abyssal hill segmentation: Quantitative analysis of the East Pacific Rise flanks 7°S-9°S, *J. Geophys. Res.*, *98*, 13,851-13,862, 1993.
- Goff, J. A., A utilitarian approach to modeling non-Gaussian characteristics of a topographic field, *J. Geophys. Res.*, *98*, 19,635-19647, 1993b.

- Goff, J. A., D. J. Fornari, J. R. Cochran, C. Keeley, and A. Malinverno, Wilkes transform system and "nannoplate", *Geology*, 21, 623-626, 1993.
- Cochran, J. R., J. A. Goff, A. Malinverno, D. J. Fornari, C. Keeley, and X. Wang, Morphology of a 'superfast' mid-ocean ridge crest and flanks: The East Pacific Rise, 7°-9°S, *Mar. Geophys. Res.*, 15, 65-75, 1993.
- Holliger, K., A.R. Levander, and J.A. Goff, Stochastic modeling of the reflective lower crust: petrophysical and geological evidence from the Ivrea Zone (Northern Italy), *J. Geophys. Res.*, 98, 11,967-11,980, 1993.
- Goff, J. A., K. Holliger, and A. R. Levander, Modal fields: A new method for characterization of random velocity heterogeneity, *Geophys. Res. Lett.*, 21, 493-496, 1994.
- Macario, A., W. F. Haxby, J. A. Goff, W. B. F. Ryan, S. C. Cande, and C. A. Raymond, Flow line variations in abyssal hill morphology for the Pacific-Antarctic Ridge at 65°S, *J. Geophys. Res.*, 99, 17,921-17,934, 1994.
- Levander, A., R.W. England, S.K. Smith, R.W. Hobbs, J.A. Goff, and K. Holliger, Stochastic characterization and seismic response of upper and middle crustal rocks based on the Lewisian gneiss complex, Scotland, *Geophys. J. Int.*, 119, 243-259, 1994
- Goff, J. A., The relationship between local- and global-scale scattering functions for fractal surfaces under a separation of scales hypothesis, *J. Acoust. Soc. Am.*, 97, 1586-1595, 1995a.
- Goff, J. A., Quantitative analysis of sea-ice draft I: Methods for stochastic modeling, *J. Geophys. Res.*, 100, 6993-7004, 1995b.
- Goff, J. A., W. K. Stewart, H. Singh, and X. Tang, Quantitative analysis of sea-ice draft II: Application of stochastic modeling to intersecting topographic profiles, *J. Geophys. Res.*, 100, 7005-7017, 1995a.
- Goff, J. A., B. E. Tucholke, J. Lin, G. E. Jaroslow, and M. C. Kleinrock, Quantitative analysis of abyssal hills in the Atlantic Ocean: A correlation between inferred crustal thickness and extensional faulting, *J. Geophys. Res.*, 100, 22,509-22,522, 1995b.
- Goff, J. A., A. Levander, Incorporating "sinuous connectivity" into stochastic models of crustal heterogeneity: Examples from the Lewisian gneiss complex, Scotland, the Franciscan formation, California, and the Hafafit gneiss complex, Egypt, *J. Geophys. Res.*, 101, 8489-8501, 1996.
- Goff, J. A., and J. R. Cochran, The Bauer scarp ridge jump: a complex tectonic sequence revealed in satellite altimetry, *Earth and Plan. Sci. Lett.*, 141, 21-33, 1996.
- Goff, J. A., L. A. Mayer, J. Hughes-Clarke, and L. F. Pratson, Swath mapping on the continental shelf and slope: The Eel River basin, northern California, *Oceanography*, 9, 178-182, 1996.
- Steckler, M. S., D. J. Swift, J. P. Syvitski, J. A. Goff, and A. W. Niedoroda, Modeling the sedimentology and stratigraphy of continental margins, *Oceanography*, 9, 183-188, 1996.
- Kleinrock, M. C., Humphris, Susan E.; Shaw, P.; Bowen, A.; Crook, T.; Davis, C.; Elder, R.; Gleason, D.; Goff, J.; Goldstein, L.; Handley, W.; Howland, J.; Hussenoeder, S.; Koga, K.; Lerner, S.; Nakamura, Ko-ichi; Rashid, M.; Reiser Wetzels, L.; Sellers, W.; Sulanowska, M.; Van Dover, C.; and Whitcomb, L, Detailed structure and morphology of the TAG active hydrothermal mound and its geotectonic environment, *Proceedings of the Ocean Drilling Program, Part A: Initial Reports*, Vol. 158, pp. 15-21, 1996.
- Larkin, S. P., A. Levander, D. Okaya, and J. A. Goff, A deterministic and stochastic velocity model for the Salton Trough/Basin and Range transition zone and constraints on magmatism during rifting, *J. Geophys. Res.*, 101, 27,883-27,897, 1996.
- Austin, J. A., M. Field, C. Fulthorpe, J. Goff, L. Mayer, G. Mountain, A. Niedoroda, D. Orange, M. Steckler, and D. Swift, Continental terraces hold clues to the generation and preservation of the stratigraphic record, *Eos Trans. AGU*, 78, 1-2, 1997.

- Goff, J. A., and B. E. Tucholke, Multi-scale spectral analysis of bathymetry on the flank of the Mid-Atlantic Ridge: Modification of the seafloor by mass wasting and sedimentation, *J. Geophys. Res.*, 102, 15,447-15,462, 1997.
- Goff, J. A., Y. Ma, A. Shah, J. R. Cochran, and J.-C. Sempéré, Stochastic analysis of seafloor morphology on the flank of the Southeast Indian Ridge: The influence of ridge morphology on the formation of abyssal hills, *J. Geophys. Res.*, 102, 15,521-15,534, 1997.
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- Goff, J. A., Finding chaos in abyssal hills, *Nature*, 392, 224-226, 1998.
- Goff, J. A., D. L. Orange, L. A. Mayer, and J. E. Hughes-Clarke, Detailed investigation of continental shelf morphology using a high-resolution swath sonar survey: The Eel margin, northern California, *Mar. Geol.*, 154, 255-269, 1999.
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- Goff, J. A., and K. Holliger, Nature and origin of upper crustal seismic velocity fluctuations and associated scaling properties: combined stochastic analysis of KTB velocity and lithology logs, *J. Geophys. Res.*, 104, 13,169-13,182, 1999
- Goff, J. A., D. J. P. Swift, C. S. Duncan, L. A. Mayer, and J. Hughes-Clarke, High resolution swath sonar investigation of sand ridge, dune and ribbon morphology in the offshore environment of the New Jersey Margin, *Mar. Geol.*, 161, 309-339, 1999.
- Goff, J. A., Simulation of stratigraphic architecture from statistical and geometrical characterizations, *Math. Geol.*, 32, 765-786, 2000.
- Driscoll, N., J. Weissel and J. A. Goff, En echelon cracks along the outer continental shelf: Implications for submarine landslides and tsunamis, *Geology*, 28, 407-410, 2000.
- Goff, J. A., H. C. Olson and C. S. Duncan, Correlation of sidescan backscatter intensity with grain-size distribution of shelf sediments, New Jersey margin, *Geo-Marine Letters*, 20, 43-49, 2000.
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- Goff, J. A., How sick is the Spring AGU meeting? *Eos Trans. AGU*, 81, 563, 2000.
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- Goff, J. A., Quantitative classification of canyon systems on continental slopes and a possible relationship to slope curvature, *Geophys. Res. Lett.*, 28, 4359-4362, 2001.
- Goff, J. A., Wheatcroft, R. A., Lee, H., Drake, D. E., Swift, D. J. P., and Fan, S., Spatial Variability of Shelf Sediments in the STRATAFORM Natural Laboratory, Northern California, *Cont. Shelf Res.*, 22, 1199-1223, 2002.
- Kraft, B. J., L. A. Mayer, P. Simpkin, P. Lavoie, E. Jabs, E. Lynskey, and J. A. Goff, Calculation of in situ acoustic wave properties in marine sediments, in *Impact of Littoral Environmental Variability on Acoustic Prediction and Sonar Performance*, N. G. Pace and F. B. Jensen, eds., Kluwer Academic, Netherlands, pp. 123-130, 2002.

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- Holliger, K., J. A. Goff, A generic model for the 1/f nature of seismic velocity fluctuations, in: *Heterogeneity in the Crust and Upper Mantle: Nature, Scaling and Seismic Properties*, J. A. Goff and K. Holliger, eds., Kluwer Academic/Plenum, New York, pp. 131-154, 2003.
- Goff, J. A., and W. H. F. Smith, A correspondence of altimetric gravity texture to abyssal hill morphology along the flanks of the Southeast Indian Ridge, *Geophys. Res. Lett.*, *30*, 2269, doi:10.1029/2003GL018913, 2003
- Goff, J. A., W. H. F. Smith and K. M Marks, The contributions of abyssal hill morphology and noise to altimetric gravity fabric, *Oceanography*, *17*, 24-37, 2004.
- Goff, J. A., and S. Nordfjord, Interpolation of fluvial morphology using channel-oriented coordinate transformation: A case study from the New Jersey Shelf, *Math. Geol.*, *36*, 643-658, 2004.
- Goff, J. A., B. J. Kraft, L. A. Mayer, S. G. Schock, C. K. Sommerfield, H. C. Olson, S. P. S. Gulick, and S. Nordfjord, Seabed characterization on the New Jersey middle and outer shelf: Correlability and spatial variability of seafloor sediment properties, *Mar. Geol.*, *209*, 147-172, 2004.
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- Goff, J. A., L. A. Mayer, P. Traykovski, I. Buynevich, R. Wilkens, R. Raymond, G. Glang, R. L. Evans, H. Olson, C. Jenkins, Detailed investigation of sorted bedforms, or “rippled scour depressions,” within the Martha’s Vineyard Coastal Observatory, Massachusetts, *Cont. Shelf Res.*, *25*, 461-484, 2005.
- Nordfjord, S., J. A. Goff, J. A. Austin, Jr., and C. K. Sommerfield, Seismic geomorphology of buried channel systems on the New Jersey outer shelf: Assessing past environmental conditions, *Mar. Geol.*, *214*, 339-364, 2005.
- Goff, J. A., J. A. Austin, Jr., S. Gulick, S. Nordfjord, B. Christensen, C. Sommerfield, and H. Olson, C. Alexander, Recent and modern marine erosion on the New Jersey outer shelf, *Mar. Geol.*, *216*, 275-296, 2005.
- Gulick, S. P. S., J. A. Goff, J. A. Austin, Jr., C. R. Alexander, Jr., S. Nordfjord, and Craig S. Fulthorpe, Basal inflection-controlled shelf-edge wedges off New Jersey track sea-level fall, *Geology*, *33*, 429-432, 2005.
- Ratill P., Lai Y., Symonds D.T., Ruhlmann L.A., Preston J.R., Scheer E.K., Garr M.T., Holland C.W., Goff J.A., Makris N.C., Long range acoustic imaging of the continental shelf environment: The Acoustic Clutter Reconnaissance Experiment 2001, *J. Acoust. Soc. Am.*, *117*, 1977-1988, 2005.
- Nordfjord, S., J. A. Goff, J. A. Austin, Jr., S. P. S. Gulick, Seismic facies of incised valley-fills, New Jersey continental shelf: Implications for erosion and preservation processes acting during late Pleistocene/Holocene transgression, *J. Sed. Res.*, *76*, 1284-1303, 2006.
- Goff, J. A., C. Jenkins, B. Calder, Maximum likelihood resampling of noisy, spatially correlated data, *Geochem. Geophys. Geosys*, doi:10.1029/2006GC001297, 2006.
- Merwade, V. M., D. R. Maidment, and J. A. Goff, Anisotropic considerations while interpolating river channel bathymetry, *J. Hydrol.*, *331*, 731-741, 2006.
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- Austin J. A., S. Nordfjord, L. Duncan, C. S. Fulthorpe, J. Goff, and S. P. S. Gulick, Deciphering the modern seafloor and seismic geomorphology of the latest pleistocene, *Seal’ AIX06, Sea Level Changes: Records Processes and Modeling*, 25-29, 2006

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- Goff, J. A., C. Jenkins and S. Jeffries Williams, Characterization of seabed sediment variability using the usSEABED data base, *Cont. Shelf Res.*, 28, 614-633, 2008
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- Goff, J. A., and B. K. Arbic, Global prediction of abyssal hill roughness statistics for use in ocean models from digital maps of paleo-spreading rate, paleo-ridge orientation, and sediment thickness, *Ocean Modelling*, 32, 36-43, 2010.
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- Goff, J. A., Global prediction of abyssal hill root-mean-square heights from small-scale altimetric gravity variability, *J. Geophys. Res.*, 115, B12104, doi:10.1029/2010JB007867, 2010.
- Goff, J. A., and C. S. Duncan, Reexamination of sand ridges on the middle and outer New Jersey shelf based on combined analysis of multibeam bathymetry and backscatter, seafloor grab samples and chirp seismic data, In Press, *IAS Special Publication on Shelf Sedimentology*.

**John A. Goff**  
**UTIG Grants Received**

Agency	Title	Start Date	End Date	Award
ONR	Stochastic Modeling of Abyssal Hill Morphology (balance transferred from WHOI)	1 Mar 93	31 Dec 93	46,433
ONR	2-D Analysis of Ice-Canopy Morphology and Acoustic-Scattering Provinces	15 Apr 93	14 Apr 95	39,938
Rice U. (AFOSR subcon)	Quantitative Characterization of Crustal Heterogeneity Implications for Seismic Wave Propagation	1 Jan 94	31 Dec 97	82,643
ONR	Stochastic Modeling of Abyssal Hill Morphology: New Seafloor Models Based on Analysis on Fine-Scale Basement Topography and Separate Characterization of Tectonic and Volcanic Morphology	1 Jan 94	31 Dec 95	44,165
ONR	Swath Mapping of the New Jersey and Northern California Margins and Statistical Characterization of the Shelf and Slope Bathymetry	1 Oct 94	30 Sep 96	145,000
ONR	Stochastic Modeling of Abyssal Hill Morphology: Development of Sea Floor Models for use in Acoustic Reverberation Experiments	1 Jan 96	30 Jun 97	20,000
ONR	ONR STRATAFORM proposal for FY97 and FY98: Statistical characterization of bathymetry and stratigraphy on continental margins	1 Oct 96	30 Sep 98	154,999
DOD	AASERT: Integration of high-resolution multichannel seismic and swath bathymetry surveys, New Jersey and northern California margins, in support of STRATAFORM (with Fulthorpe)	1 Jun 97	31 May 00	143,742
JOI	JOI/USSSP ODP Site Survey Augmentation: Ultra-High Resolution Swath Mapping, CHIRP Sonar, Bottom Photography and Grab Sampling in Support of a Shallow Water (Jack-Up Drilling) Extension of the Mid-Atlantic Sea Level Transect (with Olson)	1 Jul 98	30 Jun 99	41,338
ONR	ONR STRATAFORM proposal for FY99 and FY00: Statistical characterization of bathymetry and stratigraphy on continental margins	1 Oct 98	30 Sep 00	140,000
NSF	Collaborative Research: Geophysical investigation of en echelon cracks along the outer shelf off Virginia/North Carolina - Implications for slope stability	1 May 99	30 April 01	60,287
ONR	Geological and geophysical support for the "Geoclutter" acoustic reconnaissance field program (with Austin)	1 Sep 99	31 Aug 00	49,040
ONR	Realistic interpolation of buried channel systems within the New Jersey Geoclutter natural laboratory	1 June 00	30 June 01	75,000
ONR	Geophysical and Geological Reconnaissance for the ONR Geoclutter Program (with Austin)	15 June 00	31 Dec 03	693,218
ONR	Building a Statistical Framework for Mine Burial Predictions	1 Jan 01	31 Dec 01	39,909
ONR	Seabed Variability and its Influence on Acoustic Prediction Uncertainty	1 July 01	31 Aug 04	190,766
ONR	Site Survey of the Mine Burial/Coastal Processes Experiment Site at the WHOI Coastal Observatory, Martha's Vineyard	1 Jan 02	31 Dec 04	188,729
ONR	ONR Geoclutter Program: Final Analysis of Geophysical and Geological Data (with Austin)	1 Oct 03	31 Dec 04	205,000
DURIP	Completion of a Heave Compensation System for a Small Off-	1 May 04	30 April 05	232,080

Shore Drilling Rig (with Austin)				
ONR	Spatial variability and robust interpolation of seafloor sediment properties using the SEABED data bases	1 Oct 04	30 April 07	59,899
ONR	Stratigraphic and Geoacoustic Characterization of the Outer New Jersey Shelf	1 May 05	30 Sep 07	99,756
JSG, ONR & Industry	AHC-800 (Active Heave Compensation to 800 m) Drilling on the New Jersey Shelf: Investigating the Stratigraphic Response to ~50,000 Years of Eustasy (with Austin and Steel)	1 Oct 06	30 Sept 09	625,000
ONR	Effects of small-scale bathymetric roughness on the global internal wave field (with Arbic)	1 April 07	30 Sept 09	244,017
ONR	Stratigraphic and Geoacoustic Characterization of the Outer New Jersey Shelf	1 Oct 07	30 Sep 09	157,776
ONR/SSCI	Interpolation Techniques with Minimal Data Density Analysis for Seafloor and Sub-seafloor Characteristics	15 Aug 08	31 Aug '10	64,220
JSG	Rapid Response to Hurricane Ike	25 Sept. 08	31 Mar 09	45,996
<b>Total</b>				<b>3,888,951</b>