

<b>Date of Birth:</b> <i>On Request</i> <b>Nationality:</b> <b>U.S.A.</b> <b>Passport No.</b> <i>On Request</i> <b>Expiration:</b> <i>On Request</i> <b>Visa No.</b> <i>N/A</i> <b>Expiration:</b> <i>N/A</i> <b>Security Level:</b> <i>On Request</i> <b>Expiration:</b> <i>On Request</i>	Seafloor Investigations, LLC. 93 S. Jackson St., #28990 Seattle, WA 98104 USA Ph. +1-530-386-6887 Em. lizet@seafloor.biz www.seafloorinvestigations.com
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**EDUCATION (DEGREE AND SPECIALIZATION)**

- Ph.D. (2003) Hydrogeology, Johns Hopkins University
- M.A. (1999) Hydrogeology, Johns Hopkins University
- B.S. (1997) Biology, Univ. of Maryland, College Park Honors

**TRAINING / CERTIFICATES / PROF CERTIFICATIONS**

- GIS coursework (*Getting to Know ArcGIS; Getting Started with the Geodatabase; Creating, Editing, & Managing Geodatabases*)
- Fledermaus Suite Course (*Fledermaus, DMagic, & FMMidwater*)
- STCW Basic Safety at Sea Training
- Basic Firefighting (WSPFTA-53)
- Wilderness First Aid and Safety
- Standard CPR and First Aid
- UNOLS Winch Operators Certificate.

**SUMMARY OF EXPERIENCE**

Dr. Lizet Christiansen has extensive experience in hydrogeology and geophysics in submarine and terrestrial environments. Her range of knowledge and experience includes sonar, heat flow, Tow-Yo surveys, physical property measurements, permeability studies, strainmeter data, statistical analyses, core logging, and sediment analysis. She has solid background with GIS projects, and has worked with backscatter and bathymetric sonar data. As Lead Engineer with TowCam, Dr. Christiansen managed entire operations including successful trouble shooting of all onboard systems. She is well versed in numerical methods and has written, modified, and supervised work on numerical codes. She has developed, programmed, and implemented finite element flow models for coupled fluid flow, heat transport, and deformation. Because of her extensive research background, field and sea experience, technical writing, data analysis and organizational skills, she is an excellent candidate to participate in a variety of projects.

**PROFFESIONAL EXPERIENCE**

Mar 09 – Current	Position – Hydrogeologist / Geophysicist Company – Seafloor Investigations LLC
Sep. 03 – Feb. 06	Position – Postdoctoral Fellow - Supervisor – Dr. Steven Ingebritsen Company – U.S. Geological Survey
Jan 01 – Jan 03	Position – Researcher; Permeability specialist - Supervisor – Dr. Grant Garven Company – Johns Hopkins University
May 01 – May 01	Position – Heat Flow Specialist Company – MBARI
Nov. 00 – Jan. 01	Position – Physical Properties Specialist Company – Ocean Drilling Program
Aug. 99 – Sep. 99	Position – Heat Flow Assistant Company – Univ. of CA, Santa Cruz

**MARINE SURVEY SYSTEMS**

Seabeam 2112 Multibeam System WHOI Towed Camera Sled	Chirp Sub-Bottom profilers CTD & XBT Deployment	Simrad EK60 Deepwater Sonars Tow-Yo's
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**SURVEY SOFTWARE**

WinFrog	MatLab	UNIX / Fortran	Echoview
ESRI ArcGIS	IVS-3D Fledermaus	Chesapeake SonarWiz5	Triton Perspective
HyPack	Seabird SBE Package	IVS-3D Fledermaus Midwater	Reflex
CARIS HIPS & SIPS	Quick Terrain Modeler		

**OTHER PROFESSIONAL QUALIFICATIONS (Organizations, Training, Awards, etc.)**

American Geophysical Union(AGU)      MARGINS / GeoPRISMs      Consortium for Ocean Leadership  
 International Association of Volcanology and Chemistry of Earth's Interior ( IAVCEI)

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## PUBLICATIONS

- Hurwitz, S., L.B. Christiansen, P. Hsieh, Hydrothermal fluid flow and deformation in large caldera: Inferences from numerical simulations, *J Geophys Res*, 122, B02206, doi:10.1029/2006JB004689, 2007.
- Christiansen, L.B., Hurwitz, S., Ingebritsen, S., Annual modulation of seismicity along the San Andreas Fault near Parkfield, CA, *Geophys. Res. Lett.*, 34, L04306, doi:10.1029/2006 GL028634, 2007.
- Christiansen, L.B., S. Hurwitz, M.O. Saar, S.E. Ingebritsen, P. Hsieh, Seasonal seismicity at western United States volcanic areas, *Earth Planet. Sci. Lett.*, 240, 2005.
- Christiansen, L.B., and G. Garven, Transient hydrogeologic models for submarine flow in volcanic seamounts: 1. The Hawaiian Islands, *J Geophys Res*, vol.109, B2108, doi:10.1029/2003JB002401, 2004.
- Christiansen, L.B., and G. Garven, Transient hydrogeologic models for submarine flow in volcanic seamounts: 2. Comparison of the Hawaiian, Marquesas, and Canary Islands, *J Geophys Res*, vol.109, B2108, doi:10.1029/2003JB002402, 2004.
- Christiansen, L.B., and G. Iturrino, Core-scale permeability of an actively venting, felsic, hydrothermal system: The PACMANUS hydrothermal field, *Proc. ODP, Sci. Results*, 193: College Station, TX, (Ocean Drilling Program), 2004.
- G. Iturrino, R.A. Ketcham, L.B. Christiansen, and G. Boitnott, Data Report: Permeability, resistivity, and x-ray computed tomography measurements in samples from the PACMANUS hydrothermal system, *Proc. ODP, Sci. Results*, 193: College Station, TX, (Ocean Drilling Program), 2004.
- Christiansen, L.B., and G. Garven, A theoretical comparison of buoyancy-driven and compaction-driven fluid flow in oceanic sedimentary basins, *J Geophys Res*, 108, 2130, doi:1029/2002JB001956, 2003.
- Fisher, A.T., E.E. Davis, M. Hutnak, V. Spiess, L. Zuhlsdorff, A. Cherkaoui, L. Christiansen, K. Edwards, B. Macdonald, H. Villinger, M.J. Mottl, C.G. Wheat, and K. Becker, Hydrothermal recharge and discharge across 50 km guided by seamounts on a young ridge flank, *Nature*, 421, 559-674, 2003.
- Harris, R.N., G. Garven, J. Georgen, M.K. McNutt, L. Christiansen, and R.P. Von Herzen, Submarine hydrogeology of the Hawaiian archipelagic apron 2. Numerical simulations of coupled heat transport and fluid flow, *J Geophys Res*, 105 (B9), 21,371-21,385, 2000.
- Conkwright, R.D., C.P. Williams, and L.B. Christiansen, Offshore Sand Resources in Northern Maryland Shoal Fields, 94 pp., *Maryland Geological Survey, Baltimore*, 2000.
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## RECENT PROJECTS

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### Multi-year Mineral Exploration Project, multiple systems, ships & cruises (2012 – Current)

#### Lockheed Martin Corporation

##### Pacific Ocean

Dr. Christiansen works as a geophysicist, lead GIS expert and report writer for a multi-year exploration and assessment effort. The project involves multiple cruises utilizing various vessels and facilities (i.e. ROV's, AUV's, ship-based geophysical systems, oceanographic sampling systems, etc.) in collaboration with various commercial and academic institutions.

### Multiple Projects, WHOI TowCam Survey (2012 – current)

#### Woods Hole Oceanographic Inst. (WHOI) / MISO group

##### Northeastern US coast, Pacific Ocean, Samoa, Taiwan, Hawaii

Dr. Christiansen acts as lead TowCam engineer for multiple projects, acquiring near-bottom high-resolution photographic imagery of a variety of terrains. These projects involve operating and maintaining camera sled, processing images, trouble shooting instrumentation issues, and producing final cruise reports.

### Seabed Resource Assessment onboard M/V Dorado Discovery (2011)

#### Fugro NEPTUNE Project

##### Pacific Ocean

As a geophysical specialist / geologist onboard M/V Dorado Discovery, Dr. Christiansen assisted in mineral deposit assessment and mapping of hydrothermal systems along the MOR using various sonars, sampling methods, Tow-Yo's, and ROV. Work involved data acquisition, processing, interpretation, GIS data compilation, and final cruise report and presentation.

### BP Macondo Spill Response: Geophysical Mid-water Hydrocarbon Seep Detection & Surface Slick Survey (2010-2011)

#### EGS Americas

##### Gulf of Mexico (GoM), Vicinity of LA USA

Dr. Christiansen worked on locating and mapping natural seeps in the GOM using sonars to identify and map geologic and water column anomalies specific to naturally occurring hydrocarbon seeps. Work involved data acquisition, processing, interpretation, GIS project development, and final cruise report compilation.

### UNOLS Axial Seamount Expedition onboard R/V Thompson (2010)

#### University of Washington / UNOLS Marine Tech Group

##### Pacific Ocean NW

Dr. Christiansen assisted in the location and sampling of hydrothermal vents and methane seeps using 12.5 kHz sonar, 23-Niskin water sampling arrays, and gravity cores. All samples and data were documented and cataloged for later analysis. Vents and seeps were imaged and documented with the Jason ROV.