

# david foster hill

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## education

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| 1997 | Ph.D., Civil and Environmental Engineering, University of California, Berkeley               |
| 1994 | M.S., Civil and Environmental Engineering, University of California, Berkeley                |
| 1993 | B.A., Aeronautical and Astronautical Engineering, University of Illinois, Urbana / Champaign |

## experience

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| January 2010 - Present      | Associate Professor, Oregon State University, Civil and Construction Engineering                       |
| August 2004 – December 2009 | Associate Professor, The Pennsylvania State University, Civil and Environmental Engineering            |
| Summer 2008, 2009           | Visiting Researcher, Technical University of Delft (Netherlands)                                       |
| January 1999 – July 2004    | Assistant Professor, The Pennsylvania State University, Civil and Environmental Engineering            |
| Summer 2000                 | Visiting Professor, University of Illinois, Urbana / Champaign, Theoretical and Applied Mechanics      |
| June 1998 – December 1998   | Postdoctoral Researcher, University of Illinois, Urbana / Champaign, Theoretical and Applied Mechanics |
| January 1998 – June 1998    | Postdoctoral Researcher, Purdue University, Civil and Environmental Engineering                        |
| Fall 1997                   | Lecturer, University of California, Berkeley, Civil and Environmental Engineering                      |
| Spring 1996, 1997           | Lecturer, San Francisco State University   |
| Summer 1995                 | Visiting Researcher, Delft Hydraulics (Netherlands)  |

## professional service and affiliations

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- Conference Co-Chair, Hydraulic Measurements and Experimental Methods Conference, ASCE/EWRI, 2012, Salt Lake City, UT.
- Member, American Geophysical Union Publications Committee, 2010-2012.
- Conference Co-Chair, Hydraulic Measurements and Experimental Methods Conferences, ASCE/EWRI, 2007, Lake Placid, NY.
- Member, ASCE Hydraulic Measurements and Experimental Methods Technical Committee, 2005 – present.
- Session Chair, APS DFD Annual Meeting, 2000, Washington D.C.
- Session Chair, AGU Ocean Sciences Meeting, 2000, San Antonio, TX.
- Session Chair, Third International Workshop on Particle Image Velocimetry, 1999, Santa Barbara, CA.
- Member, American Physical Society, 1996 – present.
- Member, American Geophysical Union, 1996 – present.
- Member, American Society of Civil Engineers, 2004 – present.
- Proposal Reviewing: National Science Foundation, National Institute for Climate Change Research, American Chemical Society – Petroleum Research Fund, Civilian Research Defense Foundation.
- Journal Paper Reviewing: Journal of Hydraulic Research, Quarterly of Applied Mathematics, Zeitschrift fur Naturforschung, Measurement Science Technology, Journal of Fluid Mechanics, Experiments in Fluids, Journal of Waterway, Port, Coastal and Ocean Engineering, Journal of Fluids Engineering, Physics of Fluids, Environmental Fluid Mechanics, Journal of Engineering Mechanics, Canadian Journal of Zoology, Journal of Hydraulic Engineering, Industrial and Engineering Chemistry Research, Regular and Chaotic Dynamics, Journal of Engineering Mathematics, Limnology and Oceanography, Ocean Dynamics,

## journal publications

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1. Hijma, M., Engelhart, S., Tornqvist, T., Horton, B., Hu, P., Hill, D.F., “A protocol for an advance geological sea-level database,” 2012, in preparation.
2. Arendt, A., Luthcke, S., Abdalati, W., O’Neel, S., Hill, D.F., 2012, “Analysis of seasonal variability in Gulf of Alaska glacier mass balance from GRACE,” J. Glaciology, in preparation.
3. Drew, G., Hill, D.F., Piatt, J.F., 2012, “Effects of tidal currents, depth and tidal direction on marine bird distributions in Glacier Bay, Alaska,” *Marine Ecology Progress Series*, submitted.
4. Hill, D.F., Calos, S.E., 2012, “High resolution gridded temperature and precipitation data for Alaska,” *Journal of Hydrology*, submitted.

5. Bieniek, P., Bhatt, U., Thoman, R., Angeloff, H., Partain, J., Papineau, J., Fritsch, F., Holloway, E., Walsh, J., Daly, C., Shulski, M., Hufford, G., Hill, D.F., Calos, S., Gens, R., 2012, "On revising the climate divisions for Alaska," *J. Applied Meteorology and Climatology*, in press.
6. Klaar, M., Maddock, I., Milner, A., Hill, D.F., 2011, "The dynamics of coarse woody debris within recently deglaciated streams in Glacier Bay National Park, Alaska," *Geomorphology*, v.130, pp.208-220.
7. Hill, D.F., Griffiths, S.D., Peltier, W.R., Horton, B.P., Tornqvist, T.E., 2011, "High-resolution numerical modeling of tides in the western Atlantic, Gulf of Mexico, and Caribbean Sea during the Holocene," *Journal of Geophysical Research*, v.116(C10014), 16pp.
8. Chenoweth, E., Gabriele, C., Hill, D., 2011, "Micro-scale tidal influences on humpback whale habitat selection," *Marine Ecology Progress Series*, v.423, pp.279-289.
9. de Vries, S., Hill, D.F., de Schipper, M., Stive, M.J.F., 2011, "Remote sensing of coastal waves using stereo imaging," *Coastal Engineering*, v.58(3), pp.239-250.
10. Hawkes, A.D., Horton, B.P., Nelson, A.R., Hill, D.F., 2010, "The application of intertidal foraminifera to reconstruct coastal subsidence during the giant Cascadia earthquake of AD 1700 in Oregon, USA," *Quaternary International*, v.221(1-2), pp.116-140.
11. Hill, D.F., Ciavola, S., Etherington, L., Klaar, M., 2009, "Estimation of freshwater runoff into Glacier Bay, Alaska and incorporation into a tidal circulation model," *Estuarine, Coastal and Shelf Science*, v.82, pp.95-107.
12. Hill, D.F., Younkin, B.D., 2009, "A simple estimation of the growth rate and equilibrium size of bedforms created by a turbulent wall jet," *Journal of Hydraulic Research*, v.47(5), pp.619-625.
13. Sharp, K.V., Hill, D.F., Troolin, D., Walters, G., Lai, W., 2009, "Volumetric 3-component velocimetry (V3V) measurements of the turbulent flow in stirred tank reactors," *Experiments in Fluids*, doi 10.1007/s00348-009-0711-9.
14. Younkin, B., Hill, D., 2009, "Rapid bathymetric surveys of an evolving scour hole using planar laser sheet illumination," *Journal of Hydraulic Engineering*, v.135(10), pp.852-856.
15. Hill, D.F., Vergara, A., Parra, E., 2008, "Destratification by mechanical mixers: mixing efficiency and flow scaling," *ASCE Journal of Hydraulic Engineering*, v.134(12), pp.1772-1777.
16. Etherington, L., Hooge, P., Hooge, E., Hill, D., 2007, "Oceanography of Glacier Bay, Alaska: implications for biological patterns and productivity in a glacial fjord estuary," *Estuaries and Coasts*, v.30(6), pp.927-944.
17. Connell, R.J., Kulasiri, D., Lennon, J., Hill, D.F., 2007, "Computational modeling of turbulent velocity structure for open channel flow using Karhunen-Loeve expansion," *International Journal of Computational Methods*, v.4(3), pp.493-519.
18. Hill, D.F., Younkin, B.D., 2006, "Measurements of turbulent flow in and around scour holes," *Experiments in Fluids*, v.41, pp.295-307.
19. Lennon, J.M., Hill, D.F., 2006, "Particle image velocimetry measurements of hydraulic and undular jumps," *ASCE Journal of Hydraulic Engineering*, v.132(12), pp.1283-1294.

20. Hill, D.F., Frandsen, J., 2005, "Transient evolution of weakly-nonlinear sloshing waves: an analytical and numerical comparison," *Journal of Engineering Mathematics*, v.53(2), pp.187-198.
21. Yoon, H.S., Hill, D.F., Balachandar, S., Adrian, R., 2005, "Flow scaling in a Rushton turbine stirred tank, part 1 – mean flow, jet, and tip vortex components," *Chemical Engineering Science*, v.60(12), pp.3169-318.
22. Raju, R., Balachandar, S., Hill, D.F., Adrian, R., 2005, "Flow scaling in a Rushton turbine stirred tank, part 2 – eigen-decomposition of fluctuation," *Chemical Engineering Science*, v.60(12), pp.3185-3198.
23. Hill, D.F., 2004, "Weakly-nonlinear cubic interactions between surface waves and interfacial waves: an analytic solution," *Physics of Fluids*, v.16(3), pp.839-842.
24. Hill, D.F., 2003, "Transient and steady-state amplitudes of forced waves in closed basins," *Physics of Fluids*, v.15(6), pp.1576-1587.
25. Beachler, M.M., Hill, D.F., 2003, "Stirring up trouble? Resuspension of bottom sediments by recreational watercraft," *Lake and Reservoir Management*, v.19(1), pp.15-25.
26. Hill, D.F., 2002, "General density gradients in general domains: the two-tank method revisited," *Experiments in Fluids*, v.32(4), pp.434-440.
27. Hill, D.F., 2002, "The Faraday resonance of interfacial waves in weakly-viscous fluids," *Physics of Fluids*, v.14(1), pp.158-169.
28. Yoon, H.S., Sharp, K.V., Hill, D.F., Adrian, R.J., Balachandar, S., Ha, M.Y., Kar, K., 2001, "Integrated experimental and computational approach to simulation of flow in a stirred tank," *Chemical Engineering Science*, v.56, pp.6635-6649.
29. Hill, D.F., Sharp, K.V., Adrian, R.J., 2000, "Stereoscopic particle image velocimetry measurements of the flow around a Rushton turbine," *Experiments in Fluids*, v.29(5), pp.478-485.
30. Hill, D.F., Foda, M.A., 1999, "The effects of viscosity and elasticity on the non-linear resonance of internal waves," *Journal of Geophysical Research*, v.104(C5), pp.10,951-10,958.
31. Foda, M.A., Hill, D.F., 1998, "Nonlinear energy transfer from semi-diurnal barotropic motion to near-inertial baroclinic motion," *Journal of Physical Oceanography*, 28, pp.1865-1872.
32. Hill, D.F., Foda, M.A., 1998, "Subharmonic resonance of oblique interfacial waves by a progressive surface wave," *Proceedings of the Royal Society of London*, 454, pp.1-16.
33. Foda, M.A., Hill, D.F., Huang, C.-M., DeNeale, P., 1997, "Fluidization response of sediment bed to rapidly falling water surface," *Journal of Waterway, Port, Coastal, and Ocean Engineering*, 123(5), pp.261-265.
34. Hill, D.F., Foda, M.A., 1996, "Subharmonic resonance of short internal standing waves by progressive surface waves," *Journal of Fluid Mechanics*, 321, pp.217-224.

conference presentations

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- Hall, G.F., Hill, D.F., Horton, B.P., Engelhart, S.E., Griffiths, S.D., Peltier, W.R., 2012, "A high-resolution study of tidal range changes in the Delaware Bay: past conditions and future scenarios," American Geophysical Union Ocean Sciences Meeting, Salt Lake City, UT, February.
- Drew, G., Hill, D.F., Piatt, J., 2012, "Effects of tidal currents on marine bird distribution in Glacier Bay, Alaska," 38<sup>th</sup> Annual Meeting of the Pacific Seabird Group, Haleiwa, HI, February.
- Bruhis, N., Calos, S.E., Hill, D.F., 2012, "High-resolution monthly precipitation and temperature grids for Alaska, USA: a resource for hydrological studies," Alaska Marine Science Symposium, Anchorage, AK, January.
- Chenoweth, E., Gabriele, C., Hill, D.F., 2012, "Humpback whale habitat selection near tidal headland wakes," Alaska Marine Science Symposium, Anchorage, AK, January.
- Hall, G.F., Hill, D.F., Horton, B.P., Engelhart, S.E., Griffiths, S.D., Peltier, W.R., 2012, "A high-resolution study of tidal changes in the Delaware Bay," Heceta Head Coastal Conference, Yachats, OR, October.
- Hill, D.F., Calos, S.E., 2011, "Historical high-resolution weather grids for Alaska and Western Canada: a resource for hydrological studies," Pacific Northwest Glaciologist's Meeting, Portland, OR, October.
- Hill, D.F., de Vries, S., de Schipper, M., Stive, M., 2011, "Stereoscopic imaging of nearshore waves," 10<sup>th</sup> ARGUS Workshop, Corvallis, OR, July.
- Hill, D.F., 2011, "ADCIRC simulations of tsunami propagation in the Columbia River," Workshop on Tsunami Hydrodynamics in a Large River," Corvallis, OR, August.
- Hill, D.F., Griffiths, S., Peltier, W.R., Horton, B.P., Tornqvist, T.E., 2011, "High-resolution numerical modeling of tides in the western Atlantic, Gulf of Mexico, and Caribbean Sea during the Holocene," American Geophysical Union, San Francisco, CA, December.
- Hijma, M., Tornqvist, T., Hu, P., Gonzalez, J., Hill, D., Horton, B., Engelhart, S., 2011, "A new Holocene sea-level database for the US Gulf Coast: Improving constraints for past and future sea levels," American Geophysical Union, San Francisco, CA, December.
- Tornqvist, T., Horton, B.P., Hijma, M., Engelhart, S., Hu, P., Hill, D.F., Gonzalez, J., 2011, "Towards an open-access Holocene sea-level database for the US Atlantic and Gulf Coasts," Coastal and Estuarine Research Foundation, Daytona Beach, FL, November.
- Hill, D., deVries, S., de Schipper, M., Stive, M., 2011, "Stereo imaging of nearshore waves," European Geophysical Union General Assembly, Vienna, Austria, April.
- Hill, D., Griffiths, S., Peltier, W., Horton, B., Tornqvist, T., 2011, "High resolution numerical modeling of tides in the western Atlantic, Gulf of Mexico, and Caribbean during the Holocene," European Geophysical Union General Assembly, Vienna, Austria, April.
- Haller, M., Lenée-Bluhm, P., Newborn, D., Ozkan-Haller, T., Rhinefrank, K., Hill, D., Honegger, D., Porter, A., 2011, Experiments on the near-field and far-field wave effects of WEC arrays," European Geophysical Union General Assembly, Vienna, Austria, April.

- Calos, S., Hill, D., 2011, "Estimating precipitation and temperature at high resolution in Alaska," Alaska Marine Science Symposium, Anchorage, AK, January.
- Calos, S., Hill, D., 2010, "Estimating freshwater fluxes into the Gulf of Alaska," Northwest Glaciologist's Meeting, Fairbanks, AK, October.
- Hill, D., Griffiths, S., Peltier, D., Horton, B., Tornqvist, T., 2010, "High resolution numerical modeling of tides in the western Atlantic, Gulf of Mexico, and Caribbean during the Holocene," ADCIRC Annual Meeting, Vicksburg, MS, April.
- Hill, D., Griffiths, S., Peltier, D., Horton, B., Tornqvist, T., 2010, "High resolution numerical modeling of tides in the western Atlantic, Gulf of Mexico, and Caribbean during the Holocene," AGU Ocean Sciences Meeting, Portland, OR, February.
- Horton, B., Tornqvist, T., Hill, D., Peltier, D., 2010, "Holocene sea-level changes along the Atlantic coast of the United States," Quaternary Research Association, Durham, UK, January.
- Sharp, K.V., Hill, D.F., Walter, G., 2009, "Volumetric 3-component velocimetry measurements of the flow around a Rushton turbine: a fluid dynamics video," American Physical Society – Division of Fluid Dynamics, Minneapolis, November.
- Chenoweth, E., Gabriele, C., Hill, D., 2009, "Ebb and flow of humpbacks: tidal influences on habitat selection at headlands," 18th Biennial Conference on the Biology of Marine Mammals, Quebec City, Canada, October.
- Klaar, M., Hill, D., Maddock, I., Milner, A., 2009, "The influence of coarse woody debris in the development of habitat complexity within recently deglaciated streams," American Geophysical Union, December, San Francisco, CA.
- de Vries, S., Hill, D., de Schipper, M., Stive, M., 2009, "Using stereo photogrammetry to measure coastal waves," Argus Workshop, University of Plymouth, UK, July 22-24.
- Hill, D., Griffiths, S., Peltier, D., Horton, B., Tornqvist, T., 2009, "High resolution numerical modeling of tides in the western Atlantic, Gulf of Mexico, and Caribbean during the Holocene," Proceedings of the Sixth International Geoscience Programme Project, October, 2009, Conway, South Carolina, USA.
- Horton, B., Engelhart, S., Kemp, A., Tornqvist, T., Gonzales, J., Yu, S., Hu, P., Hill, D., Peltier, D., Shennan, I., Thieler, R., 2009, "Sea-level Changes along the Atlantic Coast of the United States: Implications for Glacial Isostatic Adjustment Models and Current rates of Sea-level Change," Proceedings of the Sixth International Geoscience Programme Project, October, 2009, Conway, South Carolina, USA.
- de Vries, S., Hill, D., de Schipper, M.A., Stive, M.J.F., 2009, "Using stereo photogrammetry to measure coastal waves," Proceedings of the 10th International Coastal Symposium, April, 2009, Lisbon, Portugal.
- Engelhart, S.E., Anderson, C., Hill, D.F., Douglas, B.C., Horton, B.P., Peltier, W.R., van de Plassche, O., Shennan, I., Thieler, E.R., Tornqvist, T.E., 2008, "20th century acceleration in the rate of sea level rise on the US Atlantic Coast: greater than the global average," GSA Annual Meeting, Houston, TX.
- Hill, D.F., Troolin, D., Walters\*, G., Lai, W., Sharp, K.V., 2008, "Volumetric three component velocimetry measurements of the turbulent flow in stirred tank

reactors,” 14th International Symposium on Applications of Laser Techniques to Fluid Mechanics, July 7-10, Lisbon, Portugal.

- Engelhart, S., Anderson, C., Hill, D., Douglas, B.C., Horton, B.P., Peltier, W.R., van de Plassche, O., Shennan, I., Thieler, E.R., Tornqvist, T.E., 2008, “20th century acceleration in the rate of sea-level rise on the US Atlantic coast,” AMQUA Meeting, June 5-7, State College, PA.
- Eckert, G., Hill, D., Herter, H., Smith, Q., 2008, “Model and in situ studies of larval dispersal and connectivity in Glacier Bay, Alaska,” AGU Ocean Sciences Meeting, March 2-7, Orlando, FL.
- Drew, G., Piatt, J., Hill, D., 2008, “Effects of tidal currents on seabird distribution in Glacier Bay, Alaska,” 35th Annual Meeting of the Pacific Seabird Group, February 27 – March 2, Blaine, WA.
- Hill, D.F., Ciavola\*, S., Etherington, L., 2008, “Where the wild tides are: modeling the barotropic tide and freshwater runoff in Glacier Bay, Alaska,” Alaska Marine Sciences Symposium, January 20-24, Anchorage, AK.
- Vergara\*, A., Hill, D.F., 2008, “Destratification by mechanical mixers: mixing efficiency and flow scaling,” Penn State College of Engineering Research Symposium, April, University Park, PA.
- Younkin\*, B.D., Hill, D.F., 2008, “Prediction of scour formation due to a turbulent wall jet along a non-cohesive sediment bed,” Penn State College of Engineering Research Symposium, April, University Park, PA.
- Walters\*, G., Hill, D.F., 2008, “An investigation of geometric scaling of mean and turbulent flows in cylindrical stirred tank reactors,” Penn State College of Engineering Research Symposium, April, University Park, PA.
- Engelhart, S., Anderson, C., Hill, D., Horton, B., Peltier, W., van de Plassche, O., Shennan, I., Thieler, E., Tornqvist, T., 2007, “Elucidating the Holocene relative sea-level history of the US Atlantic coast,” American Geophysical Union Fall Meeting, December 10-14, San Francisco, CA.
- Engelhart, S., Horton, B., Hill, D., Tornqvist, T., Peltier, W., Thieler, E., Anderson, C., van de Plassche, O., Shennan, I., 2007, “Late Holocene relative sea-level change on the eastern seaboard of the USA,” Geological Society of America Annual Meeting, October 28-31, Denver, CO.
- Horton, B., Engelhart, S., Hill, D., Tornqvist, T., Peltier, W., Thieler, E., Anderson, C., van de Plassche, O., Shennan, I., 2007, “Sea-level changes along the Atlantic coast of the United States: implications for glacial isostatic adjustment models and current rates of sea-level change,” 2007, Geological Society of America Annual Meeting, October 28-31, Denver, CO.
- Hill, D.F., Younkin\*, B.D., 2007, “PIV measurements of scour due to planar jets,” presented at the ASCE / EWRI Hydraulic Measurements and Experimental Methods conference, September 10-12, Lake Placid, NY.
- Hill, D.F., Younkin\*, B.D., 2005, “PIV measurements of turbulent flow in and around scour holes,” presented at the 6th International Symposium on Particle Image Velocimetry, September 21-23, Caltech, Pasadena, CA.

- Lennon\*, J., Hill, D.F., 2005, "Particle image velocimetry measurements of undular and hydraulic jumps," presented at the ASCE Mechanics and Materials conference, Baton Rouge, LA.
- Younkin\*, B., Hill, D.F., 2005, "Scour due to planar turbulent jets," presented at the ASCE Mechanics and Materials conference, Baton Rouge, LA.
- Panel Member, October, 2004, Glacier Bay Symposium, Juneau, AK.
- Hill, D.F., 2004, "To break or not to break; parametrically forced interfacial waves," presented at the American Physical Society Division of Fluid Dynamics Meeting, Seattle, WA, presenter.
- Hill, D.F., 2003, "An analytic solution for the evolution of weakly-nonlinear seiches," presented at the American Physical Society Division of Fluid Dynamics Meeting, Meadowlands, NJ, presenter.
- Hill, D.F., 2003, "Transient and steady-state amplitudes of forced waves in rectangular basins," presented at the ASCE Engineering Mechanics Conference, Seattle, WA, presenter.
- Hill, D.F., Beachler\*, M.M., 2002, "ADV measurements of planing boat prop wash," presented at the Hydraulic Measurements & Experimental Methods Conference, Estes Park, CO, presenter.
- Jackson, P.R., Musalem, R., Rehmann, C.R., Hill, D.F., 2002, "Particle image velocimetry errors due to refractive index fluctuations," presented at the Hydraulic Measurements & Experimental Methods Conference, Estes Park, CO.
- Hill, D.F., Beachler\*, M.M., 2002, "The impact of boat wakes and prop wash on bottom sediments," invited presentation at the 2002 Wisconsin Lakes Convention, Green Bay, WI, presenter.
- Hill, D.F., 2001, "Forced seiches in closed basins," presented at the American Physical Society Division of Fluid Dynamics Meeting, San Diego, CA, presenter.
- Yoon, H.S., Raju, R., Balachadar, S., Ha, M.Y., Hill, D.F., Adrian, R.J., 2001, "LES/PIV of flow in a stirred tank," presented at the American Physical Society Division of Fluid Dynamics Meeting, San Diego, CA.
- Hill, D.F., Beachler\*, M.M., 2001, "The hydrodynamic impacts of recreational watercraft on shallow lakes," invited key session presentation at the North American Lake Management Society Symposium, Madison, WI, presenter.
- Hill, D.F. 2001, "Growth rates and equilibrium amplitudes of seismically forced waves in closed basins," presented at the *ASCE Waves 2001 Symposium*, San Francisco, CA, presenter.
- Hill, D.F., 2001, "Growth rates and equilibrium amplitudes of forced waves in closed basins," presented at *Wave Phenomena III: Waves in Fluids from the Microscopic to the Planetary Scale*, Edmonton, AB, Canada, presenter.
- Invited Presentation, April, 2000, 8<sup>th</sup> Annual Learning and Teaching with Technology Symposium, The Pennsylvania State University.
- Parra\*, E.J., Hill, D.F., 2000, "Turbulent mixing in a stirred stratified flow," presented at the *American Physical Society Division of Fluid Dynamics Meeting*, Washington D.C.



- Hill, D.F., Sharp, K.V., Adrian, R.J., Yoon, H.S., Balachandar, S., 2000, "Integrated experimental and numerical study of the flow around a Rushton turbine," presented at the *American Physical Society Division of Fluid Dynamics Meeting*, Washington D.C, presenter.
- Hill, D.F. 2000, "Making waves in nonlinearly stratified fluids," presented at the *Fifth International Symposium on Stratified Flows*, Vancouver, British Columbia, Canada, presenter.
- Hill, D.F., 2000, "The Faraday resonance of interfacial waves in weakly viscous fluids," presented at the *American Geophysical Union Ocean Sciences Meeting*, San Antonio, TX, presenter.
- Hill, D.F., 1999, "The mixing efficiency of a Rushton turbine in a stirred stratified flow," presented at the *American Physical Society Division of Fluid Dynamics Meeting*, New Orleans, LA, presenter.
- Hill, D.F., Sharp, K. V., Adrian, R.J., 1999, "The implementation of distortion compensated stereoscopic PIV," presented at the *Third International Workshop on Particle Image Velocimetry*, Santa Barbara, CA, presenter.
- Hill, D.F., Sharp, K.V., Adrian, R.J., 1999, "Distortion compensation applied to stereoscopic PIV in a mixing tank," presented at the *Third ASME/JSME Joint Fluids Engineering Conference*, San Francisco, CA, presenter.
- Hill, D.F., Hondzo, M., Haider, Z., 1998, "Boundary mixing due to breaking internal waves," presented at the *American Physical Society Division of Fluid Dynamics Meeting*, Philadelphia, PA, presenter.
- Hill, D.F., Foda, M.A., 1998, "The effects of viscosity and elasticity on the nonlinear resonance of internal waves," presented at the *American Physical Society Division of Fluid Dynamics Meeting*, Philadelphia, PA, presenter.
- Hill, D.F., Foda, M.A., 1998, "Subharmonic resonance of oblique interfacial waves by progressive surface waves," presented at the *Johns Hopkins Conference in Environmental Fluid Mechanics*, Baltimore, MD, presenter.
- Hill, D.F., Foda, M.A., 1997, "Nonlinear energy transfer from semi-diurnal barotropic motion to near-inertial baroclinic motion," presented at the *American Geophysical Union Fall Meeting*, San Francisco, CA, presenter.
- Hill, D.F., Foda, M.A., 1997, "Nonlinear energy transfer from semi-diurnal barotropic motion to near-inertial baroclinic motion," presented at the *American Physical Society Division of Fluid Dynamics Meeting*, San Francisco, CA, presenter.
- Hill, D.F., Foda, M.A., 1996, "The subharmonic resonance of oblique interfacial waves by a progressive surface wave," presented at the *American Geophysical Union Fall Meeting*, San Francisco, CA, presenter.
- Hill, D.F., Foda, M.A., 1996, "The subharmonic resonance of oblique interfacial waves by a progressive surface wave," presented at the *American Physical Society Division of Fluid Dynamics Meeting*, Syracuse, NY, presenter.

invited seminars

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- Hill, D.F., 2012, "Estimates of coastal freshwater runoff: how to get them and what to do with them," Oregon State University Water Resources Engineering Seminar Series, Corvallis, OR, March.
  - Hill, D.F., Calos, S.E., 2011, "Estimates of coastal freshwater runoff: how to get them and what to do with them," United States Geological Survey, Portland, OR, February.
  - Hill, D.F., DeVries, S., de Schipper, M., Stive, M., 2009, "Stereoscopic imaging of coastal waves," Massachusetts Institute of Technology.
  - Hill, D.F., 2008, "Where the wild tides are: modeling the barotropic tide and freshwater runoff in Glacier Bay, Alaska," NSF IGERT, Louisiana State University, November.
  - Hill, D.F., 2008, "Where the wild tides are: modeling the barotropic tide and freshwater runoff in Glacier Bay, Alaska," Oregon State University, College of Oceanic and Atmospheric Sciences, September.
  - Hill, D.F., 2008, "Derivation, observation, and computation - activities in the environmental hydraulics research group at Penn State," Oregon State University, Civil and Construction Engineering, September.
  - Invited Seminar, April, 2008, Large Lakes Observatory, University of Minnesota at Duluth.
  - Invited Seminar, February, 2008, University of Delaware.
  - Invited Seminar, October, 2007, University of Puerto Rico / Mayaguez.
  - Invited Seminar, June, 2007, University of Alaska Southeast / USGS.
  - Invited Seminar, June, 2007, Glacier Bay National Park.
  - Hill, D.F. 2006, "From top to bottom of the water column," Imperial College, London, UK, April.
  - Graduate Seminar, March, 2005, Civil and Environmental Engineering, The Pennsylvania State University.
  - Invited Seminar, March, 2004, Civil Engineering, Johns Hopkins University.
  - Graduate Seminar, September, 2003, Mathematics, The Pennsylvania State University.
  - Invited Seminar, September, 2003, Civil and Environmental Engineering, University of Illinois.
  - Invited Seminar, July, 2003, Civil and Construction Engineering, Oregon State University.
  - Invited Seminar, April, 2003, Civil Engineering, University of California Davis.
  - Invited Seminar, April, 2003, Civil and Environmental Engineering, Stanford University.
  - Invited Seminar, April, 2003, Civil and Environmental Engineering, University of California at Berkeley.
  - Graduate Seminar, January, 2003, Civil and Environmental Engineering, The Pennsylvania State University.

- Invited Seminar, November, 2002, Civil and Environmental Engineering, Cornell University.
- Invited Seminar, November, 2002, Civil and Structural Engineering, SUNY Buffalo.
- Invited Seminar, March, 2002, University of Nevada, Reno.
- Invited Seminar, March, 2002, Tahoe Regional Planning Agency.
- Graduate Seminar, January, 2002, Civil and Environmental Engineering, The Pennsylvania State University.
- Graduate Seminar, January, 2001, Civil and Environmental Engineering, The Pennsylvania State University.
- Invited Seminar, May, 2000, Civil and Environmental Engineering, University of California, Berkeley.
- Graduate Seminar, January, 2000, Civil and Environmental Engineering, The Pennsylvania State University.
- Invited Seminar, December, 1999, Meteorology, The Pennsylvania State University.
- Invited Seminar, April, 1999, Civil and Environmental Engineering, The University of Illinois.
- Invited Seminar, April, 1999, Civil and Environmental Engineering, The University of Delaware.
- Invited Seminar, April, 1998, Theoretical and Applied Mechanics, The University of Illinois.

### sponsored research

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- “Envisioning sustainable coastal communities through research networks,” NSF SRN, \$12,000,000, Co-PI, (Hill portion, \$800,000), to be submitted 2 April, 2012.
- “Estimating freshwater fluxes into the Gulf of Alaska,” Oil Spill Recovery Institute, \$25,000, PI, pending.
- “Grounding zone controls on ice and meltwater flux from marine terminating outlet glaciers,” NASA, \$1,500,000, Institutional PI, (Hill portion, \$205,190), pending.
- “Nearshore wave and current observing system,” OSU Research Equipment Reserve Fund, 3/19/12, \$33,400, Co-PI, pending.
- “Sediment transport flume HM 162-sediment,” OSU Research Equipment Reserve Fund, 9/1/11, \$74,950, Co-PI.
- “Catalyzing US-Pakistani collaboration on the current estimation and future prediction of micro-hydro power potential: response to a changing environment,” NSF, 7/1/11 – 8/30/12, \$49,980, Co-PI (Hill portion \$25,000).
- “The contributions of precipitation and glacial processes to freshwater fluxes in the Gulf of Alaska,” North Pacific Research Board, 1/2010 – 12/2012, \$240,000, PI, (Hill portion \$210,000).

- “Collaborative research: sea-level changes along the Atlantic coast of the United States: implications for glacial isostatic adjustment models and current rates of sea-level change,” National Science Foundation, 10/2007 – 9/2010, \$175,000, Co-PI, (Hill portion \$35,000).
- “Implementation of the Caribbean regional integrated coastal ocean observing system,” NOAA, 8/2008 – 9/2011, \$3,300,000, collaborator, (Hill portion \$150,000)<sup>1</sup>.
- “Kayak-based measurements of freshwater discharge into Glacier Bay, Alaska,” Alaska Coastal Marine Resources Grant, 2/2008 – 12/2010, \$10,000, PI<sup>2</sup>.
- “Environmental hydraulics research,” TU Delft Grants Program, 5/2008 – 9/2009, \$50,000, PI.
- “Integrated numerical and experimental study of scaling effects in stirred tanks,” American Chemical Society – Petroleum Research Fund, 8/2006 – 7/2009, \$80,000, Co-PI, (Hill portion \$40,000).
- “Tidal circulation in Glacier Bay, Alaska: from basic science to practical tools,” National Park Service, 1/2007 – 12/2007, \$10,000, PI.
- “The effects of Reynolds Number, Richardson number, and geometric scale on mixing in stirred tank reactors,” American Chemical Society, Supplement for Under-represented Undergraduate Student Research, 5/2007 – 9/2007, \$5000, PI.
- “Biological impacts of jet-boating on the Chilkat River, Alaska,” Alaska Department of Fish & Game, 5/2003 – 4/2004, \$40,000, PI.
- “Countering terrorists’ use of HVAC cooling towers as delivery systems for biological and chemical agents,” Civilian Research Defense Foundation, 3/2003 – 12/2003, \$100,000, Co-PI, (Hill portion \$11,000).
- “Stereoscopic particle image velocimetry for engineering research and education,” National Science Foundation, Fluid Dynamics and Hydraulics Program, 9/2002 – 8/2003, \$130,000, PI, (Hill Portion \$33,000).
- “The effects of jet boating on salmon and eagle habitat on the Chilkat River, Haines, Alaska,” Alaska Department of Fish and Game, 5/2002 – 5/2003, \$20,000, PI.
- “Resuspension of bottom sediments by recreational watercraft,” United States Department of the Interior, \$42,979, 3/2002 – 12/2002, PI.
- “Hydrodynamic impacts of recreational watercraft,” United States Department of the Interior, 6/2001 – 5/2002, \$36,344, PI.
- “Countering terrorists’ use of HVAC cooling towers as delivery systems for biological and chemical agents,” *Civilian Research Defense Foundation*.,, 8/2002, \$29,000, Co-PI (Hill Portion \$10,000).

## graduate student advising

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<sup>1</sup> Project involvement ended after year 1.

<sup>2</sup> Project was cancelled after Penn State failed to execute transfer to Oregon State.

Student	Degree	Thesis	Graduated
1. Kirk Kalmbacher	MS		2013 (est.)
2. Thomas Mosier	PhD		2015 (est.)
3. Noa Bruhis	MS	<i>The timing and magnitudes of freshwater fluxes into the Gulf of Alaska</i>	2013 (est.)
4. Stavros Calos	MS	<i>The timing and magnitudes of freshwater fluxes into the Gulf of Alaska</i>	2010-2011 (incomplete)
5. George Hall	MS	<i>Paleotidal modeling of the Delaware Bay</i>	2012 (est.)
6. Geoffrey Walters	MS	<i>An investigation of geometric scaling of mean and turbulent flows in cylindrical stirred tank reactors</i>	2008
7. Brian Younkin	PhD	<i>Prediction of scour formation due to a turbulent wall jet along a non-cohesive sediment bed</i>	2008
8. Suzanne Ciavola	Honors BS	<i>Estimating freshwater runoff into Glacier Bay, Alaska</i>	2007
9. Justin Lennon	MS	<i>Application of particle image velocimetry to the hydraulic jump</i>	2004
10. Michele Beachler	MS	<i>The hydrodynamic impacts of recreational watercraft on shallow lakes</i>	2002
11. Eduardo Parra	MS	<i>Mixing in stirred stratified flows</i>	2001

## graduate student committees

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- Brian Allen, M.Eng. (2012)
- Jeffrey Weagel, M.Eng. (2012)
- Kyle Landon, M.S. (expected 2012)
- Tracie Jackson, PhD
- Sarah Kasseem, MS (expected 2012)
- Yongshuai Chen, PhD
- Natalie Jennings, MENG, 2011
- Yongshuai Chen, MENG, 2011
- Nick Brown, MS, 2010
- Jeremy Mull, MS, 2010
- Alena Beltz, MENG, 2010
- Maria Hermann, PhD 2010
- Frank Klein, PhD (left program)
- Patrick Kerr, PhD (left program)
- Doug Edmonds, PhD, 2009
- Michael Kinzel, PhD, 2008

- Doug Edmonds, MS, 2006
- Florence Brachet, MS, 2004
- Mike Horst, PhD, 2004
- Andrew DeCandis, MS, 2003
- Eric Brown, PhD, 2000
- Marc Tessier, MS, 1999
- Amanda Graham, MS, 1999

### graduate council representative

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- Piero Mazzini, PhD, Oceanography
- Kevin Drost, MS, (MIME), 2012

### classes taught

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- CE 640 – Open Channel Hydraulics
- CE 630 – Wave Mechanics I
- CE 412/512 – Hydrology
- CE 635 – Applied Nearshore Modeling
- CE 580 – Hydrodynamic Mixing Processes
- CE 552 – Coastal and Nearshore Processes
- CE 462 – Open Channel Hydraulics
- CE 360 – Fluid Mechanics