

## BIOGRAPHICAL SKETCH

Costas Emmanuel Synolakis ‡

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### EDUCATION :

Ph.D., Civil Engineering, California Institute of Technology. 1986  
M.S., Civil Engineering, California Institute of Technology. 1979  
B.S., Engineering and Applied Science, California Institute of Technology. 1978

### POSITIONS :

Chair, UNESCO's IOC Review Board on the Pacific Tsunami Warning Center. 2005  
Professor of Natural Disasters, Department of Environmental Engineering, TUC. 2004  
Professor of Civil, Environmental, Mechanical and Aerospace Engineering, USC. 1997  
Associate Professor of Civil, Environmental and Aerospace Engineering, USC. 1991  
Visiting Professor, University of California, Berkeley. 1994  
The Prime Minister's Advisor on Science and Technology, Greece. 1993  
Assistant Professor of Civil and Environmental Engineering, USC. 1985

### AWARDS AND HONORS :

*Presidential Young Investigator, the White House.* 1989–1994  
*The Alexander Onassis Public Benefit Foundation Fellowship.* 1981–1983  
*Foreign Member, National Academy of Engineering, Armenia.* 1995

### JOURNAL PUBLICATIONS IN REVERSE CHRONOLOGICAL ORDER:

– Synolakis, C.E., Okal, E.A, Bernard, E.N The megatsunami of December 26, 2004, *The Bridge*, National Academy of Engineering, **35**, (2), 26–35.  
– Synolakis, C.E., India must cooperate on tsunami warning systems, 2005, *Nature*, **434** 17–18.

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‡ Statistics-at-a-glance : Over 16,000 individual references in *Google*, 60 peer reviewed papers, 4 books, over 100 conference presentations, six *DISCOVERY*, three *BBC* , two *National Geographic*, two *History Channel*, one *ZDF* documentaries and over 30 TV national and local news appearances in *US*, *Canadian*, *Turkish*, *Japanese*, *Vanuatu*, *PNG* and *Greek TV*. prime time interviews. Four interviews with the *New York Times*, and two with the *Washington Post* and one each in the *Wall Street Journal*, the *Economist*, *Der Spiegel*, *New Zurcher Zeitung*, *Le Monde*, *El Pais*, and over 40 in the *Los Angeles Times*, *Seattle Post*, *San Francisco Examiner*, more than 10 interviews in *Greek national newspapers*, student class evaluations average of 4.2/5.0 with a *USC School of Engineering* average believed to be 3.8/5.0; graduated 5 *Ph.D.* students; over *US\$ 3.6 million* in individual research grants; 50 invited seminars, led or co-organized 17 international tsunami surveys. In 2005, *USC's School of Engineering* was ranked 6th among all *US schools* by the *US News and World Report*. The site [www.usc.edu/dept/tsunamis](http://www.usc.edu/dept/tsunamis) of the *Tsunami Research Center* that I founded has more than 30 million hits since its inception in 1998.

- Liu, P.L-F., Lynett, P., Fernando, H., Jaffe, B.E., Fritz, H., Higman, B., Morton, R., Goff, J., Synolakis, C.E., 2005, Observations by the International Tsunami Survey Team in Sri Lanka, *Science*, **308**, 1595.
- Liu, P.L-F., Wu, T-R., Raichlen, F., Synolakis, C.E., Borrero, J., 2005, Runup and run-down generated by three-dimensional sliding masses, *Journal of Fluid Mechanics*, **536**, 107–144.
- Borrero J.C., Legg, M.R., Synolakis, C.E. 2004 Tsunami Sources in the Southern California Bight, *Geophysical Research Letters*, **28** (4) 643–646.
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- Okal, E.A., Borrero, J., and Synolakis, C.E., 2004 The earthquake and tsunami of 1865 November 17: evidence for far-field tsunami hazard from Tonga, *Geophysical Journal International*, **15**, 164–174.
- Legg, M.R., Borrero, J.C., Synolakis, C.E., 2004 Tsunami Hazards Associated with the Catalina Fault in Southern California, *Earthquake Spectra*, **20**, 1–34.
- Liu, P. L-F, Lynett, P., Synolakis, C.E., 2003, Analytical solutions for forced long waves on a sloping beach, *Journal of Fluid Mechanics*, **478**, 101–109.
- Okal, E.O., Plafker, G, Synolakis, C.E., Borrero, J.C., 2003, Near field survey of the 1946 Aleutian tsunami on Unimak and Senak islands, *Bulltin of the Seismological Society of America*, **93**, 1226–1234.
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- Okal, E.O. and Synolakis, C.E., 2003, A Theoretical Comparison of Tsunamis from Dislocations and Landslides, *Pure and Applied Geophysics*, **160**, (10/11), 2177–2188.
- Borrero, J.C., J. Bu, C. Saiang, B. Uslu, J. Freckman, B. Gomer, E.A. Okal, and C.E. Synolakis, 2003, Field survey and preliminary modeling of the Wewak, Papua New Guinea earthquake and tsunami of September 9, 2002. *Seismological Research Letters*, **74**, 393–405.
- Synolakis, C.E, Bardet, J.P, Borrero, J., Davies, H., Okal, E., Silver, E., Sweet, J., Tappin, D., 2002, Slump origin of the 1998 Papua New Guinea tsunami, *Proceedings of the Royal Society of London A* **458**, 763–769.
- Okal, E.A., Synolakis, C.E., Fryer, G.J., Heinrich, P., Borrero, J.C., Ruscher, C., Arcas, D., Guille, G., Rousseau, D., 2002, A field survey of the 1946 tsunami in the far field, *Seismological Research Letters*, **73**, 490–503.
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#### BOOKS IN REVERSE CHRONOLOGICAL ORDER:

- *Furious Earth : The Science of Earthquakes, Volcanoes and Tsunamis*, Hutton, K., Synolakis, C.E and Williams, S., 1999, McGraw Hill, 235pp, ISBN 0–07–135161–2.
- *Long Wave Runup Models*, 1997, Yeh H., Liu, P.L.–F., and Synolakis, C.E. , World Scientific, Singapore, 405pp.

#### CHAPTERS IN BOOKS IN REVERSE CHRONOLOGICAL ORDER:

- Borrero J, Cho S., Moore J, and Synolakis, C.E. 2005, The Regional Economic Cost of a Tsunami Wave Generated by the Palos Verdes Slide in *Acceptable Risk Processes: Natural and Man-made*, Taylor and VanMarcke (eds.), ASCE.
- Synolakis, C.E., 2003, Tsunami and Seiche, in *Earthquake Engineering Handbook*, edited by Chen, W–F and Scawthorn, C., CRC Press, 9–1–9–90.
- Okal, E., Synolakis, C.E., 2003, Theoretical comparison of tsunamis from dislocations and landslides, in *Prediction of Underwater Landslide Hazards*, Accepted for publication.
- Synolakis, C.E., 1999, Exact Solutions of the Shallow Water Wave Equations, *Advances in Coastal Engineering*, **4**, World Scientific, Singapore.
- Briggs, M.J., Synolakis, C.E., Harkins, G.S., Green, D., 1996, Runup of Solitary waves on a Circular island, in *Long Wave Runup Models*, Yeh H., et al (ed) 375–383, World Scientific, Singapore.
- Titov, V.V. and Synolakis, C.E., 1996 Numerical modeling of long wave runup using VTCS–3, in *Long Wave Runup Models*, Yeh H., et al (ed), 242–248, World Scientific, Singapore.
- Kanoglu, U. and Synolakis, C.E., 1996, Analytic Solutions of Solitary Wave Runup on a Conical island and on the Revere beach, , in *Long Wave Runup Models*, Yeh H., et al (ed) 214–220, World Scientific, Singapore.
- Briggs, M.J., Synolakis, C.E., Harkins, G.S., Hughes, S.A. 1995, Large Scale Three Dimensional Experiments of Tsunami Indundation, in *Tsunami : Progress in Prediction, Disaster prevention and Warning*, Tsuchiya Y. and Shuto, N. (eds), 129–149. This is Volume 4, of the *Series of Advances in Natural and Technological Standards*, Kluwer Academic Publishers, Boston.

#### ”PEER–REVIEWED” FULL–LENGTH PAPERS IN CONFERENCE PROCEEDINGS:

- Synolakis, C.E., Fritz, H.M., Titov, V.V., 2005, Field Survey of the Indian Ocean Tsunami on Sri Lankas South Coast , *Waves 2005*, Madrid, Spain.
- Raichlen, F., Synolakis, C.E., 2003, Runup from three dimensional sliding mass, Long Waves Symposium, Briggs, M., Koutitas .Ch. (Eds). 247–256, ISBN 960-243- 593-3.

- Borrero J.C., Yalciner, A.C., Kanoglu, U., Titov, V., McCarthy, D., Synolakis, C.E., 2003, Producing tsunami inundation maps in California, in Submarine landslides and tsunamis, Yalciner A. et al, (Eds), Kluwer Academic Publishers, Dordrecht, 315-329.
- Okal, E.A., Borrero, J.C., Synolakis, C.E., 2002, Solving the puzzle of the 1998 Papua New Guinea tsunami: the case for the slump *Solutions to Coastal Disasters*, Ed: L. Wallendorf and L. Ewing, ISBN 0-7844-0605-7, Proc. ASCE, 863–877.
- Synolakis, C.E., Yalciner, A.C., Borrero, J.C., Plafker, G. 2002, Modeling of the November 3, 1994 Skagway, Alaska tsunami, *Solutions to Coastal Disasters*, Ed: L. Wallendorf and L. Ewing, ISBN 0-7844-0605-7, Proc. ASCE, 915–927
- Synolakis, C.E., Borrero, J.C., Eisner, R., 2002, Developing inundation maps for the State of California, *Solutions to Coastal Disasters*, Ed: L. Wallendorf and L. Ewing, ISBN 0-7844-0605-7, Proc. ASCE, 848–862.
- Eisner, R., K., Borrero, J.C., Synolakis, C.E., 2001, Inundation maps for the State of California, *Proceedings International Tsunami Symposium, ITS-2001*, 55–68, published by NOAA-PMEL, Seattle, Washington. (Also available from [www.pmel.noaa.gov/its2001](http://www.pmel.noaa.gov/its2001).)
- Synolakis, C.E., McCarthy, D., Titov, V.V., Borrero, J., 1997, Evaluating tsunami risk in California, *California and the World Oceans 97*, Proc. ASCE, San Diego, California, 1225–1236, ASCE, NY.
- Tadepalli, S. and Synolakis, C.E., 1996, A realistic model for the 1992–1996 tidal waves, *Coastal Engineering*, Proc. 25th Conf. Coast. Eng, ASCE, Orlando, Florida, 1478–1490, ASCE, NY.
- Kanoglu, U. and Synolakis, C.E., 1996, Long wave runup on coastal structures, *Coastal Engineering*, Proc. 25th Conf. Coast. Eng, ASCE, Orlando, Florida, 1452–1464, ASCE, NY.
- Synolakis, C.E., and Imamura, F., 1995, The November 12, 1994 Mindoro Tsunami, *Proceedings Joint US/Japan Wind and Wave Engineering Symposium*. Berkeley, California, Smith, C.E. (ed), Minerals Management Service, US Dept. of Interior.
- Synolakis, C.E., Zhou, Z., Leahy, R.E., Masri, S.F. 1994, A transducer for determining internal deformations using X-ray computer tomography, *Proceedings 1st World Congress on Structural Control*, Dept. of Civil Engineering, USC, Vol. 1, WA13–22, ISBN 0–9628908–3–9, Los Angeles, California.
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- Titov, V.V. and Synolakis, C.E. 1993, A numerical study of the 9/1/92 Nicaraguan Tsunami Proc. of the IUGG/IOC International Tsunami Symposium, Wakayama, Japan. Proceedings published by the Japan Society of Civil Engineers, 627–636.
- Tadepalli, S. and Synolakis, C.E. 1993, The runup of dipole waves, Proceedings of the IUGG/IOC International Tsunami Symposium, Wakayama, Japan. Proceedings published by the Japan Society of Civil Engineers, 175–187.
- Leahy, R.E., Zhou, Z., Synolakis, C.E., Song, S.M., 1993, Three dimensional multi-resolution motion estimation for incompressible continuous media, *Proceedings 1993 International Conference Neural Networks and Signal Processing*, Guangzhou, China, 875–880.

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- Synolakis, C.E., Papanicolaou P., Hodge, D., Mercurief, P., 1993, The maximum height of rise of asymmetric buoyant jets in stratified fluids, NATO Advanced Workshop on Turbulent Jets, Oporto, Portugal (INVITED PAPER – peer reviewed short paper, but full-length paper never sent in final form anticipating journal publication )
- Abdel-Ghaffar, A.M., Leahy, R.M., Masri, S.F., Synolakis, C.E., 1992, A feasibility study fo a Concrete Core Tomographer, in Nondestructive Testing of Concrete Elements and Structures, Proceedings ASCE, San Antonio, Texas, 37–48.
- Ruscher, Cristophe and Synolakis, C.E., 1992, Asymptotic solutions for the reflection of solitary waves off plane beaches. Proceedings ASCE, 23rd International Conference on Coastal Engineering , Venice, Italy. (Two–page extended abstract).
- Synolakis, C.E., 1988, Are solitary waves the limiting waves in long wave runup ?, Proc. ASCE, 21st International Conference on Coastal Engineering , Torremolinos, Spain.
- Deb, M.K. and Synolakis, C.E., 1988, On the maximum runup of cnoidal waves, Proc. ASCE, 21st International Conference on Coastal Engineering, Torremolinos, Spain.
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- Synolakis, C.E. and Raichlen, F.R., 1984, The generation of arbitrary waves in the laboratory. Proceedings ASCE, 19th International Conference on Coastal Engineering, Houston, Texas. (Two–page extended abstract).

#### THESES AND REPORTS IN REVERSE CHRONOLOGICAL ORDER:

- Jose C. Borrero, 2002 *Tsunami Hazards in Southern California*, Ph.D. Thesis, University of Southern California, Los Angeles, California, 220pp.
- Christophe Ruscher, 1998 *The sloshing of trapezoidal reservoirs*, Ph.D. Thesis, University of Southern California, Los Angeles, California, 99pp.
- Titov V.V., 1997 *Numerical Modeling of Long Wave Runup*, Ph.D. Thesis, University of Southern California, Los Angeles, California, 150pp.
- Kanoglu, U., 1996 *Analytical solutions of Long Wave Runup over Piecewise Linear Bathymetries*, Ph.D. Thesis, University of Southern California, Los Angeles, California, 180pp.
- Zhou, Z., 1995, *Maximum likelihood hyper-parameter estimation for Gibbs priors from incomplete data with applications in image processing*, Ph.D. Thesis, University of Southern California, Los Angeles, California, 181pp. (Dr. Zhou was a joint Ph.D. student with professor R.E. Leahy.)
- Pirbazari M., Synolakis, C.E., 1993–1996, Emission of organic pollutants from asphalt, Research Contract Reports S-C 93081. SCAQMD, Diamond Bar, Ca. (About 700 pages in three volumes.)
- Agbabian, M, Abdel-Ghaffar, A., Anderson, J., Masri S., Wellford, C. and Synolakis, C. 1994 Volumes 1-4 Innovative testing methods for reinforced concrete structures. FINAL REPORT. Department of Civil Engineering, USC. (About 2200 pages.)

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#### CONFERENCE PROCEEDINGS – SHORT ABSTRACTS

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- 2.– Synolakis, C.E., 1986, The runup of solitary waves. Linear and nonlinear theory, *Bulletin of the American Physical Society*, **31** (10), Columbus, Ohio.
- 3.– Synolakis, C.E., 1986, The climb of solitary waves up sloping beaches, *EOS, Bulletin of the American Geophysical Union*, **67** (44), San Francisco, California.
- 4.– Synolakis, C.E., 1987, The reflection of solitary waves, *EOS, bulletin of the American Geophysical Union*, **68** (16), Baltimore, Maryland.
- 5.– Synolakis, C.E., 1987, The breaking of solitary waves, *Bulletin of the American Physical Society*, **32** (10), Eugene, Oregon.
- 6.– Synolakis, C.E., 1987, The breaking of long waves, *EOS, bulletin of the American Geophysical Union*, **68** (44), San Francisco, California.
- 7.– Synolakis C.E., 1988, The runup of cnoidal waves, *Eos*, 69, (16), San Francisco, California, *EOS, bulletin of the American Geophysical Union*, **69** (16), San Francisco, California.
- 8.– Synolakis C.E., 1988, The runup of cnoidal waves, *Bulletin of the American Physical Society*, **32** (8), Buffalo, New York.
- 9.– Synolakis C.E., 1989, On the maximum runup of cnoidal waves, *3rd National Theoretical Mechanics Conference*, Athens, Greece.
- 10.– Synolakis C.E., 1989, On the maximum runup of tsunamis using linear theory. *International Tsunami Symposium, ITSU, XII*, November, USSR.
- 11.– Hodge D., Synolakis, C.E. and Papanicolaou, P. ,1990, The maximum height of rise of elliptical jets in stratified fluids, *Bulletin of the American Physical Society*, **35** (10), Ithaca, NY.
- 12.– Synolakis, C.E. 1990, Asymptotic results in wave runup, *International Workshop on Long Wave Runup*, Catalina Island, California.
- 13.– Synolakis, C.E. 1990, Limiting values in wave runup, *10th US–Japan Joint Tsunami Workshop*, Honolulu, Hawaii.
- 14.– Synolakis, C.E. and Skjelbreia, J.E. 1990, The evolution of the maximum height of solitary waves, *Bulletin of the American Physical Society*, **35** (10), Ithaca, New York
- 15.– Tadepalli, S. and Synolakis, C.E., 1991, Roots of  $J_n(z) \pm iJ_{n+1}(z)$  and the evaluation of integrals with cylindrical function kernels, *Bulletin of the American Physical Society*, **36** (10), page 2706, Phoenix, Arizona.
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- 17.– Briggs, M. and Synolakis, C.E., 1992, Large scale model tests of tsunami runup, *EOS, bulletin of the American Geophysical Union*, **73** (43), page 267, San Francisco, California.
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- 19.– Tadepalli, S. and Synolakis, C.E., 1993, The evolution of dipole waves, *EOS, bulletin of the American Geophysical Union*, **74**, 43, page 333, San Francisco, California.
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71. – Raichlen, F and Synolakis, C.E., 2002, Waves and run-up generated by a three-dimensional sliding mass, EGS02–A–01564, EGS Assembly, Nice, France, April 2002.
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75. – Raichlen, F., Borrero, J., Uslu, B., and Synolakis, C.E., 2002, Modeling Landslides in the Laboratory, IX INTERNATIONAL SYMPOSIUM ON NATURAL AND HUMAN-MADE HAZARDS Disaster Mitigation in the Perspective of the New Millennium, Natural Hazards Society, Attalya, Turkey. (<http://www.hazards2002.metu.edu.tr/program.htm>)
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- 79.– Borrero, J.C., Davies, H., Uslu, B., Okal, E., Synolakis, C., 2002, Preliminary Modeling of Tsunami Waves Generated by the Earthquake of 9 September 2002 Offshore of Northern Papua New Guinea, Fall Meeting, Session S62C–1213, AGU, San Francisco, California.
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- 85.– Synolakis, C E, Okal, E A, Hoffman, I., 2003, The search for source discriminants in the near field Abstract EAE03-A-13229, Accepted for presentation at th EGS – AGU – EUG Joint Assembly, Nice, France, April 2003.
- 86.– Raichlen, F. and Synolakis, C. E., 2003, Waves and runup generated by a three dimensional sliding mass Abstract EAE03–A–13328 , Accepted for presentation at th EGS – AGU – EUG Joint Assembly, Nice, France, April 2003.
87. – Synolakis, C.E., Okal, E.A , 2003, T waves from the 1998 Papua New Guinea earthquake and its aftershocks: Timing the tsunamigenic slump, AGU, Fall Meeting, Session OS31A–04, San Francisco, California.
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91. – Yalçiner, A.C., Pelinovsky, E., Imamura, F., Synolakis, C.E., 2003, : THE PRELIMINARY ESTIMATES OF TSUNAMI RISK ZONES FOR THE COAST OF MARMARA SEA, AGU, Fall Meeting, Session 0S21D–03, San Francisco, California.
92. – Borrero, J.C., Synolakis, C.E., Eisner, R.K., 2003, Tsunami Inundation Mapping for the State of California, AGU, Fall Meeting, Session 0S21A–04, San Francisco, California.
93. – Synolakis, C.E., Eskijian, M., Borrero, J.C., McCarthy, D., NEES Tsunami "Product" Example : Standards and Guidelines for Construction of Coastal Structures, AGU, Fall Meeting, Session 0S21A–03, San Francisco, California.
94. – Okal, E. A. and Synolakis, C. E., Imamura, F., Borrero, J., members of the ITST, 2004, A decade of tsunami field surveys, EGS –EGU04–A-07715, Joint Assembly, Nice, France.
95. – Synolakis, C., Borrero, J., Eskijian, McCarthy, D., Tsunami standards and guidelines for marine terminals, EGS –EGU04–A-06653, Joint Assembly, Nice, France.
96. – Gonzalez, F.I., Geist, E., Synolakis, C.E., Titov, V. V., 2004, Probabilistic Tsunami Hazard Assessment: the Seaside, Oregon Pilot Study, AGU, Fall Meeting, Session 0S22-B, San Francisco, California.
97. – Yalçiner, A.C., Kanoglu, U., Gonzalez, F., Titov, V. V. Synolakis, C.E., 2004, Quantifying Tsunami Impact on Structures, AGU, Fall Meeting, Session OS23D-1345, San Francisco, California.
98. – Synolakis, C.E., Okal, E.A., Borrero, J.C., 2004, Quantifying tsunami risk at the Pisco, Peru LNG terminal project, AGU, Fall Meeting, Session OS22B-08, San Francisco, California.
99. – Okal, E.A., Synolakis, C.E., Yalçiner, A.C., 2004, The Amorgos, Greece earthquake and tsunami of 09 July 1956: Focal mechanism and field survey, AGU, Fall Meeting, Session OS23D–1358, San Francisco, California.
100. – Synolakis, C.E., Fritz, H.M., Borrero, J.C., 2005, Far field surveys of the Indian Ocean tsunami, in Sri Lanka, Maldives and Somalia, *International Tsunami Symposium*, Chanea, Greece.
101. – Synolakis, C.E., Okal, E.A., Gaspari, M.G., Voukouvalas, E., 2005, The 26-December megatsunami in the context of the tsunamis in the past 60 years, *International Tsunami Symposium*, Chanea, Greece.
102. – Kanoglu, U., and Synolakis, C.E., 2005, . Initial value problem solution of the non-linear shallow-water wave equations, *International Tsunami Symposium*, Chanea, Greece.

## RESEARCH GRANTS

*All multi-year grants are listed under one heading.*

– Field survey of the 26 December 2004 Megatsunami

11/05–4/06

- Funding Agency : The National Science Foundation.  
Amount : \$ 50,000
- Cooperative Research : Landslide and Tectonic Generated tsunamis 6/03–6/06  
Funding Agency : The National Science Foundation.  
Amount : \$ 190,000.
  - Field survey of the 2002 Papua New Guinea Tsunami 11/02–11/03  
Funding Agency : The National Science Foundation.  
Amount : \$ 32,000
  - Cooperative Research : Three–dimensional runup effects. 3/01–3/05  
Funding Agency : The National Science Foundation.  
Amount : \$ 190,000.
  - NEES Grid : A distributed virtual laboratory for advanced earthquake  
experimentation and simulation 3/01–3/06  
Funding Agency : The National Science Foundation, with another 20+ co–investigators.  
Amount : \$10,000,000
  - Tsunami inundation maps for Monterey Bay, California. 2/01–2/02  
Funding Agency : Governor’s Office of Emergency Services.  
Amount : \$ 52,000
  - Field survey of Easter Island, Chile 2/01–2/02  
Funding Agency : The National Science Foundation.  
Amount : \$ 23,000
  - Field survey of the Marquesas, French Polynesia. 8/00–8/01  
Funding Agency : The National Science Foundation.  
Amount : \$ 25,000
  - Workshop on submarine landslides in Southern California. 1/00–1/01  
Funding Agency : The National Science Foundation. With Prof. Bardet.  
Amount : \$ 35,000
  - Probabilistic Hazard Assessment for Southern California. 9/99–9/02  
Funding Agency : Federal Emergency Management Agency  
Amount : \$ 610,000
  - Tsunami standards and guidelines for the ports of LA/LB. 9/98–9/01  
Funding Agency : Federal Emergency Management Agency.  
Amount : \$ 640,345.
  - Tsunami inundation maps for Southern California. 2/99–6/00  
Funding Agency : Governor’s Office of Emergency Services.  
Amount : \$ 98,000
  - Workshop on Tsunamigenic Seafloor Deformations. 4/97–4/98  
Funding Agency : The National Science Foundation. With Profs. G. Carrier, P. Liu, H. Yeh.  
Amount : \$ 35,000
  - Three–dimensional runup effects. 9/96–9/01  
Funding Agency : The National Science Foundation.

- Amount : \$ 189,718.
- Presidential Young Investigator. 8/90–1/97  
Funding Agency : The National Science Foundation.  
Amount : \$ 321,559.
  - Field Survey of the Irian Jaya Tsunami. 4/96–3/97  
Funding Agency : The National Science Foundation.  
Amount : \$ 14,000.
  - International Workshop on Long Wave Runup Models. 5/95–5/96  
A workshop organization proposal. With Profs. P. Liu and H. Yeh.  
Funding Agency : The National Science Foundation.  
Amount : \$ 62,500.
  - The sloshing of the LA dam during the 1/17/94 Northridge eq. 10/94–6/96  
Funding Agency : The National Science Foundation.  
Amount : \$ 50,300.
  - Three–dimensional tsunami runup effects. 3/92–3/96  
Funding Agency : The National Science Foundation.  
Amount : \$ 210,338.
  - Emission of VOCs from asphalt paving. 1/94–1/96  
Funding Agency : SCAQMD, with Prof. Mike Pirbazari.  
Amount : \$ 438,986.
  - Integrated anal. and exper. approaches in the evaluation of RCs. 1/91–1/95  
Funding Agency : The Contactors’/Carpenters’ Cooperative Council, 1 of 8 co–pi/s.  
Amount : \$ 2,450,000.
  - International Workshop on Long Wave Runup. 4/90–4/91  
A workshop organization proposal. With Profs. P. Liu and H. Yeh.  
Funding Agency : The National Science Foundation .  
Amount : \$ 36,400.
  - The development of an asphalt core tomographer. 1/89–1/92  
Principal investigator with another 4 co–PIs.  
Funding Agency : The Strategic Highway Research Program of the NAS.  
Amount : \$ 954,000.
  - The runup of cnoidal waves. 3/89–3/91  
Funding Agency : The National Science Foundation.  
Amount : \$ 129,993.
  - LdV measurements in wave–structure interactions. 3/89–3/90  
Funding Agency : The National Science Foundation, with Prof. J.J. Lee.  
Amount : \$ 47,500.
  - The runup of cnoidal waves. 6/87–6/88  
Funding Agency : The Faculty Research and Innovations Fund, USC.  
Amount : \$ 15,000.
  - The forces on an accelerating plate in a fluid with a free surface. 6/86–6/87  
Funding Agency : The Faculty Research and Innovations Fund, USC.

Amount : \$ 18,000.

– Graphics software for analysis of deformation of fluid elements.

6/86–6/87

Funding Agency : IBM–ACIS.

Amount : \$ 12,000.

#### CURRENT DOCTORAL STUDENTS WITH EXPECTED GRADUATION DATES:

- Burak Uslu (expected), December 2006 *The effects of source parameters in tsunami inundation.*
- Salim Palumcku (expected), June 2007 *Tsunami hazards mitigation in the Aegean Sea.*
- Irina Hofman (expected), June 2007 *Analytical solutions of 3–D tsunami runup.*

#### FORMER DOCTORAL STUDENTS :

- Jose Borrero, August 2002, *Tsunami hazards in Southern California.* Jose is now a Research Associate at USC.
- Christophe Ruscher, September 1997, *The sloshing of trapezoidal reservoirs.* Christophe has recently returned from a position of visiting Professor at DPRI, Kyoto University and he is an independent consultant to our tsunami hazards mitigation program.
- Vasily Titov, December 1996, *Hydrodynamic modeling of 3–D tsunami runup.* Vasily is currently research scientist with NOAA/PMEL.
- Utku Kanoglu, June 1996, *The runup of long waves on piece-wise linear 2–D and 3–D topographies.* Utku is currently an assistant professor of engineering mechanics at the Middle East Technical University in Ankara, Turkey.
- Zhenyou Zhou, May 1995, *Maximum likelihood hyper–parameter estimation for Gibbs priors from incomplete data with applications in image processing.* Zhenyou started with Rockwell International, "moved on", and just sold his .com company for \$15million.

#### TEACHING :

*The semester when a particular class was taught is indicated by an f or s for fall and spring respectively. The average teaching evaluation score for CE309 over 11 years is 4.23; the School of Engineering average is believed to be 3.8.*

CE 451 Water Resources Engineering.	2003
CE 309 Introduction to Fluid Mechanics.	1985–1999
CE 106 Introduction to Civil Engineering.	1995–1999
AE 525a Engineering Mathematics – Complex variables.	f1990
CE 525b Engineering Mathematics – Intro. to PDEs.	f1991 & 1995–1999
AE 441 Experimental Methods in Aerospace Engineering.	f1988,f1989,f1990
CE 410 Environmental Fluid Mechanics.	1993
CE 510a Coastal Engineering.	s1987
CE 470 Hydrologic Design.	s1986
CE 466 Open Channel Flow and Sediment Transport, USC.	s1988

As a teaching assistant at Caltech: Coastal Engineering, Hydrologic Transport Processes, Laboratory Methods in Engineering and Applied Science, Fluid Mechanics and Gas Dynamics (1977–1985).

## OTHER PROFESSIONAL ACTIVITIES – INVITED SEMINARS :

- The Royal Society, 10/05
- Kyoto University, 9/05
- Foundation of Research and Technology, Greece, 9/05
- Hellenic Center of Marine Research, 6/05
- Massachusetts Institute of Technology, 4/05
- Ecole Normal Supérieur, 3/05
- Earthquake Engineering Research Institute, 3/05
- Koshland Museum, National Academy of Sciences, 2/05
- Indian National Science Academy, 1/05
- Northwestern University, Department of Geological Sciences, 10/04
- Aquarium of the Pacific keynote Lecture, Long Beach, California. 10/02
- Southern California Earthquake Center, Los Angeles, California. 1/01
- Dept. of Civil Engineering, Middle East Technical University, Ankara, Turkey. 1/01
- Department of Geophysics, University of Chile, Santiago. 11/00
- Pacific Marine Environmental Laboratory, NOAA. 5/00
- Santa Monica Planetarium, Santa Monica, California. 3/00
- Department of Civil Engineering and Applied Mechanics, Caltech. 1/00
- Department of Mechanical and Aerospace Engineering, Arizona State University. 10/99
- The Waterways Ports, Coastal and Ocean Engineering Division, ASCE Los Angeles Technical Group. 9/99
- US Coast Guard. 6/99
- Department of Aeronautical Engineering, Caltech. 4/99
- Engineering Honors Colloquium, USC. 4/99
- Structural Engineering Association of Southern California. 3/99
- Division of Natural Hazards Mitigation, National Science Foundation. 3/99
- Department of Environmental Engineering Science, Caltech. 12/98
- State of California, Seismic Safety Commission. 9/98
- Disaster Research Prevention Institute, Kyoto University. 7/98
- Governor’s Office of Emergency Services, State of California 4/97
- Department of Geological Sciences, University of California, Los Angeles. 1/98
- Bureau of Meteorology and Geophysics, Government of Indonesia. 6/96
- Department of Mechanical and Aerospace Engineering, Arizona State University. 4/96
- Department of Civil Engineering and Geological Sciences, Notre-Dame. 11/95
- Department of Civil Engineering, Imperial College, London. 6/95
- Department of Aerospace Engineering, Stanford University. 1/95
- Joint - Department of Ocean Sciences and Geology, USC. 12/94
- Department of Civil and Environmental Engineering, UCLA. 10/95
- Hawaiaian Society of Professional Engineers, Kahului, Maui. 5/95

- US Army Corps of Engineers, Waterways Experiment Station. 2/94
- Bureau of Meteorology and Geophysics, Jakarta, Indonesia. 6/93
- Department of Aerospace Engineering, USC. 3/93
- Department of Environmental Engineering Science, Caltech. 2/93
- Department of Ocean Engineering, UC Berkeley. 1/93
- US Army Corps of Engineers, Waterways Experiment Station. 11/92
- Department of Mechanical Engineering, USC. 10/92
- Department of Civil Engineering, University of Washington. 2/92
- Department of Civil Engineering, University of Washington. 4/90
- Department. of Mathematics and Computer Science, Clarkson University. 11/90
- Department of Civil Engineering, University of Washington. 4/90
- Department of Mathematics and Computer Science, Clarkson University. 11/87
- Department of Civil Engineering, Columbia University. 9/86
- Department of Civil Engineering, University of Southern California. 5/85
- Department of Mechanical Engineering, UC, Santa Barbara. 5/84

PROFESSIONAL EXPEDITIONS – FIELD SURVEYS :

- The 12/26/04 Megatsunami - 3 different expeditions. 1/05–8/05
- The 9/9/02 Papua New Guinea tsunami (Led by Dr. Jose Borrero). 9/15–9/25/02
- The Unimak, Island field survey of the 1946 tsunami. 8/10–8/20/01
- The Easter and Juan Fernandez Islands field survey of the 1946 tsunami. 11/17–12/2/00
- The Marquesas and Society Islands field survey of the 1946 tsunami. 7/29–8/28/00
- The 11/17/99 Penetcost Vanuatu earthquake and tsunami. 12/10–12/22/99
- The 8/17/99 Izmit, Turkey earthquake and tsunami. 8/19–8/26/99
- The 7/17/98 Sissano, Papua New Guinea earthquake and tsunami. 7/28–8/10/98.
- The 2/21/96 Chimpote, Peru earthquake and tsunami. 3/15–3/24/96
- The 2/14/96 Biak, Irian Jaya earthquake and tsunami. 3/2–3/14/96
- The 10/9/95 Manzanillo, Mexico earthquake and tsunami. 10/4 –10/18/95
- The June 1995, Aigion, Greece earthquake and tsunami. 1995.
- Post–event survey of the Nicaraguan coastline. 3/15–3/31/95
- The 11/14/94 Mindoro, Philippines earthquake and tsunami. 11/24–12/2/94
- The 10/4/94 Kuril islands, Russia earthquake and tsunami. 10/20–10/27/94  
(Student Vasily Titov attended.)
- The 6/2/94 East Java, Indonesia earthquake and tsunami. 6/18–7/2/94
- The 1/17/94 Northridge earthquake dam motions. 1/18–1/21/94
- The 12/12/92 Flores, Indonesia earthquake and tsunami. 12/21/92–1/6/93
- The 9/1/92 Nicaraguan earthquake and tsunami. 9/15–9/20/92

OTHER PROFESSIONAL ACTIVITIES – UNIVERSITY GOVERNANCE :

- University Search Committee for the Dean of the School of Engineering. 2000–2001
- Senator, Academic Senate of the University of Southern California. 1998–2000  
(The Academic Senate is the elected faculty governing body of USC).
- Chairman of the Engineering Faculty Council (EFC). 1998–1999  
(The EFC is the elected faculty governing body of the School of Engineering)
- Secretary of the Engineering Faculty Council. 1998–1999  
(The EFC is the elected faculty governing body of the School of Engineering)
- University Committee on Promotions and Tenure. 1997–1999  
(The 6 person UCAPT votes on all promotion files throughout USC, after the promotion committees of departments and Schools submit their recommendations. )
- Representative at Large, School of Engineering, APT Committee. 1995  
(The Appointments, Promotions and Tenure Committee has one member elected from each department and ratifies all new appointments and promotions.)
- Executive Committee, Department of Civil Engineering. 1995
- University Athletic Facilities Advisory. 1994–1996
- Coordinator, USC-SHRP Asphalt Research Program. 1988–1992
- Senator, Academic Senate . 1991–1993
- CE representative, Engineering Faculty Council. 1992–1993
- University Student Affairs. 1988–1991
- University Student Retention. 1989–1990
- University Bookstore Advisory. 1992–1993
- Faculty Center Board of Directors. 1988–1990
- Recruitment, Seminar, Computing Facilities, Civil Engineering. 1988–1991

#### California Insitute of Technology

- Chairman, Graduate Student Council (GSC). 1982–1984  
(The GSC is elected body of the graduate students of Caltech.)
- Faculty Board. 1982–1984
- Graduate Standing. 1980–1985
- Convocations. 1982–1984
- Housing. 1982–1984
- Programs. 1982–1984
- Alumni Board of Directors. 1982–1984
- Secretary, Graduate Student Council. 1980–1982

#### OTHER PROFESSIONAL ACTIVITIES – SOCIETIES :†

- American Association for the Advancement of Sciences, since 1980
- American Society of Civil Engineers, since 1979
- American Geophysical Union, since 1979
- Association of Asphalt Paving Technologists, since 1988
- American Physical Society, since 1986
- Society of Theoretical and Applied Mechanics, since 1993

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† I do my best to pay dues, but the membership in some societies may not be current, as occasionally my office delays payments.

- Armenian Academy of Sciences, since 1995
- Earthquake Engineering Research Institute, since 1994
- New York Academy of Sciences, since 1986
- International Association for Hydraulic Research, since 1980
- New York Academy of Sciences, since 1986
- Sigma Xi, The Scientific Research Society, since 1985
- Chi Epsilon, The Engineering Honors Society, since 1997

OTHER PROFESSIONAL ACTIVITIES – JOURNAL PAPER REVIEWS :

- Proceedings of the Royal Society, three reviews, since 1995.
- Quarterly of Applied Mathematics, four reviews, since 1993.
- Geophysical Research Letters, 20 reviews, since 1992.
- Physics of Fluids, 23 reviews, since 1989.
- American Journal of Physics, 2 reviews, since 1989.
- Journal of Fluid Mechanics, 23 reviews, since 1988.
- Journal of Wat/ways, Harbors, Coastal and Ocean Eng., 30 reviews, since 1988.
- Natural Hazards, 2 reviews, since 1988.
- National Science Foundation, 27 reviews, since 1988.

OTHER PERSONAL INFORMATION :

Languages : Greek, German

Professional Examinations : EIT (1982), registered PE in the European Union (1988).

Citizenship : USA