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Professional Experience

Director and Professor, Institute of Marine and Coastal Sciences, Rutgers University (2008-present)
George and Alice Welsh Distinguished Professor UNC-CH (2005-2008)
Chairman, Department of Marine Sciences UNC-CH (2000-2007)
Director, Marine Sciences Program (2000-2007)
Professor, Department of Marine Sciences, UNC-CH (1996-2008)
Associate Professor, Marine Sciences Curriculum, UNC-CH (1993-1996)
Associate Professor, Skidaway Institute of Oceanography, Savannah, GA (1991-1993)
Visiting Professor, Depto. de Física, Univ. de las Islas Baleares, Palma de Mallorca, Spain, (Fall 1991)
Assistant Professor, Skidaway Institute of Oceanography, Savannah, GA (1988-1991)
Research Assistant Professor, Thayer School of Engineering, Dartmouth College, Hanover, NH (1984-1989)

Professional Interests

To understand the structure and function of marine ecosystems and predict their future states; studies of physical and biological processes in the ocean through coupled computer simulations of circulation physics and the dynamics of populations from phytoplankton to fish; development and implementation of coastal ocean forecasting systems.

Personal:

Birth: 13 November 1957; Maracaibo, Venezuela
Citizenship: U.S. since 1996
Languages: Fluent in English, Spanish and Hungarian

Education, University of Washington

Ph.D. Physical Oceanography (1984)
M.Sc. Physical Oceanography (1981)
B.Sc. Mathematics (1978); *magna cum laude*, Phi Beta Kappa

Selected Leadership Roles (complete list in Appendix):

Chairman of the GLOBEC-International Scientific Steering Committee: 2003-present.
NSF's ORION iOSC 2007-present.
NSF's ORION Science and Technology Advisory Committee (STAC) 2005-2007.
NSF ORION Coastal Subcommittee member, 2005-2007
NSF ORION Modeling Study Group member, 2005-2006.
International Geosphere-Biosphere Prog. (IGBP) Scientific Steering Committee: member, 2003-present.
U.S. GLOBEC Scientific Steering Committee: member, 2000-present.
Chair, Gordon Research Conference on Coastal Circulation Modeling, 2007.
Science Synthesis Committee for the National Science Foundation's OCE Decadal Planning Activity: member, 1998-2000.

Selected Professional Service (further listings in Appendix):

Organizing Committee member: Advances in Marine Ecosystem Modeling Research, Plymouth, UK, 2005 and 2008; North Atlantic Marine Ecosystem Basin Scale Studies, Reykjavik, Iceland, 2005; Computational Methods in Water Resources, Chapel Hill, NC, 2004; GLOBEC Open Science Conf., Qingdao, China, 2002.

Workshop co-convenor:

- Biological Skill Assessment Workshop, Chapel Hill, 2005-2006;
- Modeling Approaches to Studies of Coastal Ocean Circulation Processes, Chile, Aug. 2003;
- Population Connectivity in Marine Ecosystems, Durango CO, Oct. 2003;
- Modeling Tools for the Study of Larval Drift Processes of Scallops and their Influence on the Availability of Recruits for Aquaculture, La Paz, Mexico, May 2002;
- Biophysical Modeling in Oceanic Environments, North Carolina Supercomputing Center, RTP North Carolina, Jan. 1998;
- Numerical Modeling of Shallow Water Hydrodynamics, Inst. para la Conservación del Lago de Maracaibo, Venezuela, Aug. 1996;
- Coastal Physics and Modeling of Coupled Physical/Biological Processes, Universidad de Valparaíso, Chile, Dec. 1995.

Journal Editorships:

Co-Editor in Chief, *Progress in Oceanography*, Jan 2007-present.

Editorial Board of *Revista de Biología Marina y Oceanografía*, 2003-present.

Editorial Board of *Fisheries Oceanography*, 1998-present.

Guest Editor, *Advances in Water Resources* (1989; *Special Issue on the Tidal Flow Forum*);

Fisheries Oceanography (1999; *Special Issue on the South Atlantic Bight Recruitment Experiment*);

Ecological Modelling (2006; *Special NEMURO Issue*); *Journal of Marine Systems* (2007; *Special Issue on Phys-Bio Model Skill Assessment*).

Funding (funding history in Appendix):

Over \$10M million career total

Teaching:

- General Oceanography;
- Coastal Circulation Theory;
- Ocean Circulation Theory;
- Advanced Ocean Circulation Modeling;
- Modeling of Marine Systems;
- Biological Processes and Physical Forcings;
- First Year Seminar “Where did all the fish go?”
- Turbulence and Boundary Layers (Continuum Mechanics)

Student Committees (see Appendix):

10 Ph.D., 9 M.Sc., 2 Post-Docs

Peer Reviewed Publications:

Kristiansen, T., R.G. Lough, F.E. Werner, E.A. Broughton and L.J. Buckley (2008) Individual-based modeling of feeding ecology and prey selection of larval cod on Georges Bank. *Mar. Ecol. Prog. Ser.*, doi: 10.3354/meps07796.

Fréon, P., F.E. Werner and F. Chavez (2008) Predicted effects of climate change on SPACC systems. SPACC Synthesis Book, in press.

Edwards, K.P., J.A. Hare and F.E. Werner (2008) Dispersal of black sea bass (*Centropristis striata*) larvae on the southeast U.S. continental shelf: results of a coupled vertical larval behavior- 3D circulation model. *Fisheries Oceanography*, 17:299-315.

- deYoung, B., M. Barange, G. Beaugrand, R. Harris, R.I. Perry, M. Scheffer and F. Werner (2008) Regime shifts in marine ecosystems: detection, prediction and management. *Trends in Ecology and Evolution*, 23:402-409. (doi:10.1016/j.tree.2008.03.008)
- Rose, K.A., Megrey, B.A., Hay, D., Werner, F., Schweigert, J. (2008) Climate regime effects on Pacific herring growth using coupled nutrient-phytoplankton-zooplankton and bioenergetics models. *Transactions of the American Fisheries Society*, 137:278-297.
- Edwards, KP, J.A. Hare, F.E. Werner and H. Seim (2007) Using 2-dimensional dispersal kernels to identify the dominant influences on larval dispersal along continental shelf regions: A case-study along the U.S. southeast coast. *Mar. Ecol. Prog. Ser.*, 352:77-87.
- Aretxabaleta, A., B.O. Blanton, F.E. Werner, E.P. Chassignet, H.E. Seim, and J.R. Nelson (2007) Cold Event in the South Atlantic Bight During Summer of 2003: Model Simulations and Implications. *J. Geophysical Research*, 112, C05022, doi:10.1029/2006JC003903.
- Greenberg, D.A., F. DuPont, F. Lyard, D.R. Lynch and F.E. Werner (2007) Resolution issues in numerical models of oceanic and coastal circulation. *Continental Shelf Research*, 27(9), pp. 1317-1343.
- Megrey, B.A., K.A. Rose, S. Ito, D.E. Hay, F.E. Werner, Y. Yamanaka and M.N. Aita (2007) North Pacific basin-scale differences in lower and higher trophic level marine ecosystem responses to climate impacts using a nutrient-phytoplankton- zooplankton model coupled to a fish bioenergetics model. *Ecological Modelling*, 202 (1-2), pp. 196-210.
- Werner F.E., S. Ito, B.A. Megrey and M.J. Kishi (2007) Synthesis and Future Directions of Marine Ecosystem Models. *Ecological Modelling*, 202 (1-2), pp. 211-223.
- Megrey, B.A., K.A. Rose, R. Klumb, D. Hay, F.E. Werner, D.L. Eslinger and S L. Smith (2007) A bioenergetics-based population dynamics model of Pacific herring (*Clupea harengus pallasii*) coupled to a lower trophic level nutrient-phytoplankton- zooplankton model: Description, calibration and sensitivity analysis. *Ecological Modelling*, 202 (1-2), pp. 144-164.
- Kishi, M. J., M. Kashiwai, D.M. Ware, B.A. Megrey, D. L. Eslinger, F.E. Werner, M.N. Aita, T. Azumaya, M. Fujii, S. Hashimoto, D. Huang, H. Iizumi, Y. Ishida, S. Kang, G. A. Kantakov, H-C. Kim, K. Komatsu, V.V. Navrotsky, S. L. Smith, K. Tadokoro, A. Tsuda, O. Yamamura, Y. Yamanaka, K. Yokouchi, N. Yoshie, J. Zhang, Y.I. Zuenko and V.I. Zvalinsky (2007) NEMURO - A lower trophic level model for the North Pacific marine ecosystem. *Ecological Modelling*, 202 (1-2), pp. 12-25.
- Rose, K.A., B.A. Megrey and F.E. Werner (2007) Calibration of the NEMURO nutrient-phytoplankton-zooplankton food web model to a coastal ecosystem: Evaluation of an automated calibration approach . *Ecological Modelling*, 202 (1-2), pp. 38-51.
- Rose, K.A., F.E. Werner, B. A. Megrey, M. Noguchi Aita, Y. Yamanaka and D. Hay, J.F. Schweigert, and M.B. Foster (2007) Simulated herring growth responses in the Northeastern Pacific to historic temperature and zooplankton conditions generated by the 3-dimensional NEMURO nutrient-phytoplankton-zooplankton model. *Ecological Modelling*, 202 (1-2), pp. 184-195.
- Morales-Zárate, M.V. A.L. Aretxabaleta, F.E. Werner and S.E. Lluch-Cota (2006) Modelación de la circulación invernal y la retención de partículas en el sistema lagunar Bahía Magdalena-Almejas (Baja California Sur México). *Ciencias Marinas*, Vol. 32, 631-647.

- Lehodey, P., J. Alheit, M. Barange, T. Baumgartner, G. Beaugrand, K. Drinkwater, J-M. Fromentin, S.R. Hare, G. Ottersen, R.I. Perry, C. Roy, C.D. van der Lingen and F. Werner (2006) Climate variability, fish and fisheries. *J. Climate*, Vol. 19, 5009-5030.
- Lough, R.G., E.A. Broughton, L.J. Buckley, L.S. Incze, K.P. Edwards, R. Converse, A. Aretxabaleta, F.E. Werner (2006) Modeling growth of Atlantic cod larvae on the southern flank of Georges Bank in the tidal-front circulation during May 1999, *Deep-Sea Res. II.*, Vol. 53, 2771-2788.
- Edwards, K.P., F.E. Werner and B.O. Blanton (2006) Comparison of observed and modeled drifters in coastal regions: an improvement through adjustments for observed drifter slip and errors in wind fields. *J. Atmos. Ocean. Tech.*, Vol. 23, pp. 1614-1620.
- Edwards, K.P., J.A. Hare, F.E. Werner and B.O. Blanton (2006) Lagrangian circulation on the Southeast U.S. Continental Shelf: implications for larval dispersal and retention. *Cont. Shelf. Res.* Vols. 12-13, 1375-1394.
- Aretxabaleta A., J. R. Nelson, J. O. Blanton, H. E. Seim, F. E. Werner, J. M. Bane, R. Weisberg (2006), Cold event in the South Atlantic Bight during summer of 2003: Anomalous hydrographic and atmospheric conditions, *J. Geophys. Res.*, 111, C06007, doi:10.1029/2005JC003105.
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- Bogazzi, E., A. Baldoni, A. Rivas, P. Martos, R. Reta, J.M. Orensanz, M. Lasta, P. Dell'Arciprete and F.E. Werner (2005) Spatial correspondence between areas of concentration of Patagonian scallop (*Zygochlamis patagonica*) and frontal systems in the southwestern Atlantic. *Fisheries Oceanography*, 14:359-376.
- Lough, R.G., L.J. Buckley, F.E. Werner, J.A. Quinlan and K.A. Pehrson Edwards (2005) A general biophysical model of growth of larval Atlantic cod, *Gadus morhua*, on Georges Bank. *Fisheries Oceanography*, 14:4, 241-262.
- deYoung, B., M. Heath, F. Werner, F. Chai, B. Megrey and P. Monfray (2004) Challenges of Modeling Decadal Variability in Ocean Basin Ecosystems. *Science*, 4 June 2004, 304:1463-1466.
- Werner, F.E., A. Aretxabaleta and K. Pehrson-Edwards (2004) Modeling marine ecosystems and their environmental forcing. In: *Marine Ecosystems and Climate Variation*, edited by Stenseth, Ottersen, Hurrell and Belgrano. UK: Oxford Univ Press, pp. 33-46.
- Aretxabaleta, A., J. Manning, F.E. Werner, K. Smith, B.O. Blanton and D.R. Lynch (2004) Hindcasting May 1999 on the Southern Flank of Georges Bank: frontal circulation and implications. *Continental Shelf Research*, 25 (7/8), 849-874, 2004.
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- Ito S., M. J. Kishi, Y. Kurita, Y. Oozeki, Y. Yamanaka, and B. A. Megrey, and F. E. Werner (2004) Initial design for a fish bioenergetics model of Pacific saury coupled to a lower trophic ecosystem model. *Fisheries Oceanography*, Vol. 13 (Supplement 1), pp. 111-124.
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- Lynch, D.R., C.E. Naimie, J. Ip, C. Lewis, F.E. Werner, R.A. Luettich, Jr., B.O. Blanton, J.A. Quinlan, D. McGillicuddy, J. Ledwell, J. Churchill, V. Kosnyrev, C. Davis, S. Gallager, C. Ashjian, R.G. Lough, J. Manning, C. Flagg, C. Hannah and R. Groman (2001) Real-Time Data Assimilative Modeling on Georges Bank, *Oceanography*, **14**:65-77.
- Werner, F.E., B.R. MacKenzie, R.I. Perry, R.G. Lough, C.E. Naimie, B.O. Blanton and J.A. Quinlan (2001) Larval trophodynamics, turbulence, and drift on Georges Bank: a sensitivity analysis of cod and haddock. *Scientia Marina*, **65**, (Suppl. 1), 99-115.
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- Stegmann, P.M., J.A. Quinlan, F.E. Werner, B.O. Blanton and P. Berrien (1999) Atlantic menhaden recruitment to a southern estuary: defining potential spawning regions. *Fish. Oceanogr.*, **8**, (Suppl. 2), 111-123.
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- Quinlan, J.A., B.O. Blanton, T.J. Miller and F.E. Werner (1999). From spawning grounds to the estuary: using linked individual-based and hydrodynamic models to interpret patters and processes in the oceanic phase of Atlantic menhaden *Brevoortia tyrannus* life history. *Fish. Oceanogr.*, **8**, (Suppl. 2), 224-246.
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- Luettich, R.A., Jr., J. Hench, C. Williams, F.E. Werner, B.O. Blanton (1999) Barotropic Tidal and Wind Driven Larval Transport in the Vicinity of a Barrier Island Inlet. *Fish. Oceanogr.*, **8**, (Suppl. 2), 190-209.
- Checkley, D.M., Jr., P.B. Ortner, F.E. Werner, L.R. Settle and S.R. Cummings (1999) Spawning habitat of the Atlantic menhaden in Onslow Bay, North Carolina. *Fish. Oceanogr.*, **8**, (Suppl. 2), 22-36.
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- Werner, F.E., J.O. Blanton, D.R. Lynch and D.K. Savidge (1993) A numerical study of the continental shelf circulation of the U.S. South Atlantic Bight during the autumn of 1987. *Cont. Shelf Res.*, **13**:971-997.
- Gross, T.F., F.E. Werner and J.E. Eckman (1992) Numerical Modeling of Larval Settlement in Turbulent Bottom Boundary Layers. *Journal of Marine Research*, **50**:611-642.
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- Cantos-Figuerola, A., G. Parrilla and F.E. Werner (1992) Modelling of the surface flow in the Alborán Sea: review of sensitivity studies of reduced gravity flows. In: *Física de la Tierra, Modelado Numérico de la*

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- Werner, F.E. and D.R. Lynch (1987) Field verification of wave equation tidal dynamics in the English Channel and southern North Sea. *Advances in Water Resources*, **10**:115-130.
- Lynch, D.R. and F.E. Werner (1987) Three-dimensional hydrodynamics on finite elements. Part I: linearized harmonic model. *Int'l Journal for Numerical Methods in Fluids*, **7**:871-909.
- Werner, F.E (1987) A numerical study of secondary flows over continental shelf edges. *Continental Shelf Research*, **7**:379-409.
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APPENDIX

Sponsored Research

NSF MRI (DMS-0619665): A modular wave tank for fundamental and applied research in the new UNC Multiscale Fluid Dynamics Lab, \$619,607. R. Camassa, P.I., F. Werner, R. McLaughlin and A. Scotti, co-PIs (2006-2009).

NSF: US GLOBEC (2006-2008) - Factors determining recruitment variability in North Atlantic cod: a comparison between the NW Atlantic and Norwegian Sea Systems, \$412,000. (With G. Lough & E. Durbin)

Asian-Pacific Network (APN): Climate Interactions and Marine Ecosystems: Effects of Climate on the Structure and Function of Marine Food-Webs and Implications for Marine Fish Production in the North Pacific Ocean and Marginal Seas (with B. Megrey) \$45,000.

U.S. GODAE: Global Ocean Prediction with the Hybrid Coordinate Ocean Model (HYCOM). E. Chassignet, PI. F. Werner et al., co-PIs. UNC-CH: \$345,000. Oct 2004-June 2009.

ONR N0014-021-0972 (2002-2005): Southeast Atlantic Coastal Ocean Observing System, initial implementation. H. Seim, PI, F. Werner et al, co-PIs, in collaboration with SkIO, UCS, UM and USF. Total approx: \$14M; \$UNC-CH approx: \$3M.

NASA/National Ocean Partnership Program (NAG13-00041): Limited-area operational coastal ocean models: Assimilation of observations from fixed platforms on the continental shelf and far-field forcing from open ocean models. DR Lynch et al (Dartmouth), F.E. Werner et al (UNC), W. Youngblood (NCSC), D. McGillicuddy (WHOI), P Welsh et al (NWS). 7/00-6/03, \$1,498,547. UNC-CH: \$442,000.

NSF: US GLOBEC (OCE 9806565): Productivity of *Calanus finmarchicus* and fluctuations in growth and survival of cod and haddock larvae on Georges Bank: A synthesis of observations and modeling. October 1998-September 2001. \$264,917 (F. Werner, PI).

NOAA/NSF: US GLOBEC (NA-06 0P0078): Real-time data assimilation on Georges Bank. October 1998-September 2001. \$107,000 (F. Werner, PI).

NOPP (National Oceanographic Partnership Program, N00014-98-1-0786): South Atlantic Bight Synoptic Offshore Observational Network. 7/98-6/00. \$275,938 (UNC component), F. Werner and J. Bane, co-PIs.

ONR, Office of Naval Research (N00014-97-1-0500): Observations and Numerical Simulations of Western Boundary Current Impact on Cape Hatteras, NC; \$159,569, J. Bane and F. Werner, co-PIs.

NSF: US GLOBEC (OCE 9634171, NA 36GP055): Importance of Physical and Biological Processes to Population Regulation of Cod and Haddock in Georges Bank: A Model-Based Study. Oct '96 - Sep '99. Award to UNC: \$258,000 (with D. Lynch, C. Naimie, J. Loder, P. Smith, F. Page, *et al.*).

NOAA 1997-1998: SABRE (S. Atlantic Bight Recruitment Expt), PhyS. & Biol. Modeling. \$20,000.

NOAA 1995-1997: SABRE (S. Atlantic Bight Recruitment Expt), Phys. & Biol. Modeling. \$182,000.

NSF/NOAA: US GLOBEC: Importance of Physical and Biological Processes to Population Regulation of Cod and Haddock in Georges Bank: A Model-Based Study. 7/1993 – 6/1996. Award to UNC: \$199,000 (with D. Lynch, D. Greenberg, J. Loder, G. Lough, F. Page, I. Perry, P. Smith, W. Smith and M. Sinclair).

National Oceanic and Atmospheric Administration 1993-1995 (NA16RG0481): SABRE (S. Atlantic Bight Recruitment Expt.), Physical Oceanography and Modeling. Award to UNC: \$150,000. (With J. Blanton).

Office of Naval Research: Effects of variation of bed roughness on three dimensional circulation models of tidally dominated continental shelves. July 1993 - June 1994, \$32,000 (with T. Gross).

National Oceanic and Atmospheric Administration 1991-1993 (NA16RG0481): SABRE (South Atlantic Bight Recruitment Experiment), Physical Oceanography and Modeling. Award to Skidaway: \$116,000. (With L. Atkinson, J. Blanton, P. Verity and T. Lee).

National Science Foundation: (Ocean Sciences, GLOBEC), 1991-1993 (OCE-9016825): Development of Quantitative, Hydrodynamic and Biological Models of Settlement of Planktonic Larvae of Benthic Animals. Award: \$324,993. (With J. Eckman and T. Gross)

Office of Naval Research 1991-1992 (N00014-91-J-1376): Residual Flows Induced by Variation of Bed Roughness on Continental Shelves. Award: \$113,000. (With T. Gross)

National Science Foundation (Ocean Sciences, GLOBEC), 1991-1992: Significance of Circulation to Egg and Larval Distributions on Georges Bank. Award to Skidaway: \$57,000. (With D. Lynch, D. Greenberg, J. Loder and I. Perry)

National Science Foundation (Physical Oceanography), 1990-1992 (OCE-9018387): Synthesis of Numerical and Field Studies of a Coastal Ocean: The Gulf of Maine System. Award to Skidaway: \$205,000. (With D. Lynch)

New Hampshire Sea Grant, 1989-1991 (R/FMD-110): A study of the tides and the 3-dimensional flow structure in the Gulf of Maine. Award: \$19,950. (With D. Lynch)

National Science Foundation (under U.S.-Latin American Cooperative Science Program), 1986-1988 INT-8514156): A numerical study of an ocean-strait-inland sea system: the Lake Maracaibo system. Award: \$29,990. (With D. Lynch.)

U.S. Department of State (under U.S.-Spain Joint Committee for Scientific and Tech. Cooperation) 1985-1987 (CCA-8411-047): Finite element computations of the currents in the Alborán Sea. Award to US counterpart: \$34,544. (With D. Lynch.)

Additional Professional Service:

GLOBEC-INT Scientific Steering Committee: member, 1999-present.

PICES Climate Change and Carrying Capacity Implementation Panel: member, 2001-present.

PICES MODEL Task Team: Co-chair, 2001-present.

International Council for the Exploration of the Seas (ICES) Cod and Climate Change (CCC) Working Group: member, 1995-present.

Gordon Research Conference on Coastal Circulation Modeling: Vice-Chair, 2003.

Modeling and Predictive Capabilities (Focus 3) Working Group of GLOBEC-INT: chair, 1999-2003.

SURA (Southeast Univ. Research Assoc.) Committee on Coastal Research: member, 1999-2002.

Scientific Steering Group of the ICES/NAFO Decadal Symp. of the 1990s: member, 1999-2001.

Program Management Committee of the NOAA Coastal Ocean Program South Atlantic Bight Recruitment Experiment (SABRE): member, 1994-1999.

European Union Committee to draft Science Plan for EU Global Ecosystem Dynamics (EU GLOBEC): member, 1997.

Session Co-convenor: AGU/ASLO/TOS Special Session on Population Connectivity, Hawaii, Feb. 2006; TOS Session on Population Connectivity, Paris, June 2005; PICES XIII Annual Science Meeting, Honolulu, Hawaii, Oct. 2004; PICES XII Annual Science Meeting, Seoul, Korea, Oct. 2003; ICES Statutory Meeting, Stockholm, Sweden, Oct. 1999; ICES Statutory Meeting Aalborg, Denmark, Sept. 1995.

Session Chair, Coastal and Estuarine Processes, American Geophysical Union, Dec. 1990.

Workshop co-convenor for the Third Backward Facing Workshop on the 1960's cod and haddock year-classes of the NW Atlantic Shelf. Woods Hole, MA, May 1998.

Journal reviews: J. Phys. Oceanogr., J. Atmos. Oceanic Tech., J. Mar. Res., J. Mar. Sys., Continental Shelf Res., Estuarine, Coastal and Shelf Science, Fisheries Oceanography, Limnology and Oceanogr., Ecological Modelling, Oceanologica Acta, Adv. Water Resources, Int. J. for Num. Meths. in Fluids, Int. J. for Numerical Meths. in Eng., Comm. in Appl. Num. Meths., Progress in Oceanography, Water Resources Research, Métodos Numéricos para Cálculo y Diseño en Ingeniería, J. Geophys. Res., Atmosphere-Ocean, and Computer-Aided Engg. & Software.

Proposal reviews: U.S. National Science Foundation; NOAA; Georgia, Maine, North Carolina and Virginia Sea Grant Offices; U.S. Dept. of the Interior, National Park Service; Comisión Interministerial de Ciencia y Tecnología (Spain), Chilean CONYCET, Norwegian National Res. Council; UK National Res. Council.

Field Experience: Various cruises off the Washington-Oregon coast, 1980-1983. Hydrographic casts and current meter deployment and recovery. Real time circulation forecasting on R/V Link April/May 1999 (Georges Bank).

UNC-CH Service:

Chairman, Department of Marine Sciences, July 1 2000-2007

Acting Chairman, Department of Marine Sciences, July - Oct 1996; May - Dec 1997.

Member, Core Group Science Complex Phases I and II (2002-present); Carolina Speakers (1995-present); UNC-System Marine Sciences Advisory Board (June 1998-present); McNair speakers selection committee (2002-present); Faculty Council (July 1998-July 2001); Advisory Board for the Institute of Latin American Studies (1994-1997); UNC-CH Science Library Planning Committee (July 1998-Dec 1998); UNC-CH Research Council (Fall 1998-Fall 1999); A&S Science Advisory Group (July 1998-July 2000); Committee on Curriculum for the BS/BA in Env. Sciences/Studies (1997-2000); Marine Sciences Admissions Committee (1993-2000); Chair of the Marine Sciences Curriculum Strategic Planning Committee (1997)

Search Committee Member: Chair of Environmental Sciences and Engineering Dept (1998-1999); Assistant Dean for First Year Programs (2003).

Teaching

University of North Carolina at Chapel Hill (1993-present)

General Oceanography (Fall '93, '95, Spring '95, '97, '02)

Coastal Circulation Theory (Fall '94, '96, '98)

Ocean Circulation Theory (Spring '98)

Advanced Ocean Circulation Modeling (Spring '94, Fall '95, '97)

Modeling of Marine Systems (Spring '95, '96, '97, '99)

Biological Processes and Physical Forcings (Spring '96)

First Year Seminar "Where did all the fish go?" (Fall '01, '02, '03, '04, '05, '06)

Universidad de las Islas Baleares, Physics Department (Winter 1991): Turbulence and Boundary Layers (Continuum Mechanics)

Thayer School of Engineering, Dartmouth College (1985-1989): Advanced Numerical Methods; Geophysical Fluid Dynamics; Radiation Boundary Conditions

University of Washington: Teaching Assistant for General Physical Oceanography, Quantitative Methods in Oceanography and for Simulation Analysis of Marine Systems.

Post-Doctoral Associates, Student PhD and MSc Committees

University of North Carolina

Post-Doctoral Associate: A. Kapolnai, T. Kristiansen, J. Solé

PhD: J.A. Quinlan (Committee Chair), B.O. Blanton (Committee Chair), A. Aretxabaleta (Committee Chair); K. Edwards (Committee Chair) J. Fleming, J. Hench, S. Carr, D.K. Savidge,

MSc: M.A. García (Committee Chair), K. Edwards (Committee Chair), M.A. Neaton,

Dartmouth College

PhD: C.E. Naimie, M.T. Johnsen, M. Holboke (Committee Member)

MSc: L. Gibson, G. Sidén, and J. McEntee (Committee Member)

Duke University

PhD: Jaime Palter, R. Schick, Taichi Sakagami

Centro de Investigaciones Biológicas del Noroeste, (CIBNOR), Baja California, México

MSc and PhD: Verónica Morales Zárata (Committee Member)

Proceedings, Notes and Newsletter Articles

Cowen, R.K., S. Thorrold, J. Pineda, G. Gawarkiewicz and F. Werner (2007) Population connectivity in marine systems: an overview. *Oceanography* **20**(3):16-23.

Kishi, M.J., B.A., Megrey, S. Ito (2007) In Memoriam, Dan Ware. *Ecological Modelling*, doi:10.1016/j.ecolmodel.2006.10.001.

Kishi, M.J., B.A., Megrey, S. Ito (2007) Preface to the Ecological Modelling special issue on the NEMURO model. *Ecological Modelling*, 202 (1-2), pp. 3-6

Werner, F.E., B.A. Megrey, and K.A. Rose (2005). Report of the APN workshop on "Climate interactions and marine ecosystems." *PICES Press*, Vol. 12, No. 2, pp. 15-17.

Barange, M., F. Werner, R.I. Perry and M. Fogarty (2003) The tangled web: global fishing, global climate, and fish stock fluctuations. *IGBP Newsletter*, No. 56, Dec. 2003, pp24-27.

Werner, F.E. (2003) Introduction to GLOBEC. *GLOBEC Newsletter*, April, vol. 9, no. 1, pp. 1-2.

Cowen, R.K., S. Thorrold, J. Pineda, G. Gawarkiewicz and F. Werner (2003) Workshop held to discuss population connectivity in marine systems. *EOS* **84**(13):119.

- Seim, H. E., F. Werner, M. Fletcher, J. Nelson, R. Jahnke, C. Mooers, L. Shay, R. Weisberg and M. Luther (2002) SEA-COOS: Southeast Atlantic Coastal Ocean Observing System, Proceedings of Oceans 2002, IEEE/MTS, October, 2002.
- Werner, F.E. and S.E. Lluch-Cota (2002) Course on Coupling Physical Circulation Models and Individual Based Models held in La Paz, Mexico. *GLOBEC Newsletter*, October, vol. 8, no. 2, pp. 29-30.
- Megrey, B.A., M.J. Kishi, D.Hay, S. Ito, R.A. Klumb, K. Rose and F.E. Werner (2002) Report of the 2002 PICES MODEL/REX Task Team Workshop to Develop a Marine Ecosystem Model of the North Pacific Ocean Including Pelagic Fishes: NEMURO.FISH. *GLOBEC Newsletter*, October, vol. 8, no. 2, pp. 25-27.
- Heath, M., B. De Young, Ø. Fiksen and F.E. Werner (2001) Secondary Production in the Oceans and the Response to Climate Change. *IGBP Newsletter*, No. 47, 9-12.
- Kishi, M.J., Megrey, B.A., Eslinger, D., Rose, K.A., Ware, D.M., Werner, F.E. (2001) Report of the 2001 PICES MODEL Task Team workshop on strategies for coupling higher and lower trophic level marine ecosystem models: status of the LTL model. *GLOBEC Newsletter* 7(1): 3-6.
- Megrey, B.A., Kishi, M.J, Kashiwai, M., Ware, D.M., Eslinger, D.L., Werner, F.E. (2000) PICES Lower trophic level modeling workshop, Nemuro. *PICES Press* 8(2): 18-22.
- Werner, F.E. R.G. Lough, J.A. Quinlan, L.J. Buckley, E. Durbin, L.S. Incze and J.A. Runge (2000) Modeling growth of larval cod and haddock on Georges Bank: a synthesis of observations and model results for spring, 1995. *ICES C.M.* 2000/M:24, 9pp.
- Runge, J.R., J.A. Quinlan, E. Durbin, F. Werner, G. Lough, L. Buckley, E. Calderone, L. Inzce, J. Manning, D. Mountain, B. Niehoff and S. Plourde (2000) The effect of spatial and temporal variation in zooplankton concentrations on larval cod growth and survival on Georges Bank: a sensitivity analysis based on modelling and observations. *ICES C.M.* 2000/M:17, 11pp.
- Davis, C.S., M.C. Benfield, P.H. Wiebe, S.M. Gallagher, C.H. Greene, F.E. Werner and T.K. Stanton (1999) Real-time image analysis: instrument to model. *ICES Annual Science Conference*, September 1999, Stockholm, Sweden. *ICES C.M.* 1999/M:06.
- Incze, L.S., F.E. Werner, N. Wolff and F. Dye (1999) Direct and indirect effects of wind-induced turbulence on larval cod feeding: results of a 1-D model for Georges Bank. *ICES Annual Science Conference*, September 1999, Stockholm, Sweden. *ICES C.M.* 1999/K:07.
- Gross, T.F. and F.E. Werner (1997) Finite Element Model of Wassaw Sound with Synthetic Marsh Flooding Boundary Conditions. 5th Inter. Conf. on Estuarine and Coastal Modeling, Alexandria, VA, USA, October 22-24, 1997.
- Luettich, R.A. Jr., J.L. Hench, C.D. Williams, B.O. Blanton, F.E. Werner (1997) Tidal circulation and larval transport through a barrier island inlet. 5th Inter. Conf. on Estuarine and Coastal Modeling, Alexandria, VA, USA, October 22-24, 1997.
- Quinlan, J.A., F.E. Werner, S. Gallagher, R.G. Lough and L.J. Buckley (1997) Modeling the role of microzooplankton grazing in the feeding environment of yolk-sac cod larvae. *ICES Annual Science Conference*, 25-30 September 1997, Baltimore, MD, USA. *ICES C.M.* 1997/T:15.

- Werner, F.E., R.I. Perry, B.R. MacKenzie, R.G. Lough and C.E. Naimie (1995) Larval Trophodynamics, Turbulence, and Drift on Georges Bank: A Sensitivity Analysis of Cod and Haddock. ICES Annual Science Conference, 21-26 September 1995, Aalborg, DENMARK, ICES C.M. 1995/Q:26.
- Werner, F.E. (1995) Importance of Physical and Biological Processes to Population Regulation of Cod and Haddock on Georges Bank: A Case Study. In: *Proceedings of the Conference on Environmental Impact Prediction*. Research Triangle Park, NC, 6-7 October 1994, 243-256.
- Werner, F.E., R.I. Perry, R.G. Lough and D.R. Lynch (1994) A Coupled Individual-Based Trophodynamics and Circulation Model for Studies of Larval Cod and Haddock on Georges Bank. In: *U.S. GLOBEC News*, no. 7, September 1994.
- Lynch, D.R., J.T.C. Ip, E.M. Wolff and F.E. Werner (1994) Comprehensive Circulation Model for the Gulf of Maine. In: *Gulf of Maine Circulation Modeling: Workshop Proceedings*, RARGOM Report 94-1, Brasch E., Ed., October 1993, Dartmouth College, Hanover, NH, 50-66.
- Greenberg, D.A., D.R. Lynch and F.E. Werner (1990) Finite element models for continental shelf circulation. In: *Ocean Waves Mechanics*, Computational Fluid Dynamics and Mathematical Modeling. Proceedings of the 11th International Annual Conference of the Canadian Applied Mathematics Society, May 29-June 1, 1990, Halifax, Nova Scotia, Canada. M. Rahman, Ed., Computational Mechanics Publications, Southampton, Boston, 727-738.
- Lynch, D.R. and F.E. Werner (1989) Wave equation hydrodynamics on simple 3-D elements. In: *Proceedings of the VIIth International Conference of Finite Elements and Flow Problems*, Chung, T.J. and G.R. Karr, eds. The University of Alabama in Huntsville Press, April 1989, 1373-1382.
- Lynch, D.R., F.E. Werner, A. Cantos-Figuerola and G. Parrilla (1989) Finite element modeling of reduced-gravity flow in the Alborán Sea: Sensitivity studies. In: *Conferencia sobre oceanografía física del Estrecho de Gibraltar*, 24-28 October 1988, Madrid. Edited by Almazán, J.L., H. Bryden, T. Kinder, and G. Parrilla, 283-295.
- Werner, F.E. and D.R. Lynch (1988) Report on the 2nd Tidal Flow Forum. *EOS, Transactions, American Geophysical Union*, **69**:1027-1028.
- Lynch, D.R. and F.E. Werner (1988) Long-term simulation and harmonic analysis of North Sea and English Channel tides. In: *Proceedings of the VIIth Int'l Conference on Finite Elements in Water Resources. Developments in Water Science*, Celia, M., et al., Eds., Elsevier. MIT, Cambridge, MA, **35**:257-266.
- Walters, R.A. and F.E. Werner (1988) Experiments on the generation of tidal harmonics. In: *Proceedings of the VIIth International Conference on Finite Elements in Water Resources. Developments in Water Science*, M. Celia, et al., Eds., CMP Elsevier. MIT, Cambridge, MA, **35**:275-280.
- Werner, F.E. and D.R. Lynch (1986) Field studies with the wave equation formulation. In: *Proceedings of the VIth International Conference on Finite Elements in Water Resources*, A. Sá da Costa, et al., Eds., Springer-Verlag, Lisbon (Portugal), 547-560.
- Lynch, D.R. and F.E. Werner (1986) Three-dimensional harmonic model for linearized tidal circulation. In: *Proceedings of the VIth International Conference on Finite Elements in Water Resources*, A. Sá da Costa, et al., Eds., Springer-Verlag, Lisbon (Portugal), 505-514.

Werner, F.E (1984) Circulation over continental shelves and shelf-break regions. In: *Proceedings of the Vth International Conference on Finite Elements in Water Resources*, J.P. Laible, *et al.*, Eds., Springer-Verlag, Burlington, VT, 385-394.

Werner, F.E. and R.A. Walters (1984) Finite element solutions of the spin-up of a rotating fluid. In: *Proceedings of the Vth International Symposium on the Finite Elements and Flow Problems*, G.F. Carey and J.T. Oden, Eds., The University of Texas at Austin, 155-159.

Technical Reports

Cowen, R.K., G. Gawarkiewicz, J. Pineda, S. Thorrold and F. Werner (2004) Population Connectivity in Marine Ecosystems. Report of a Workshop to develop science recommendations for the National Science Foundation; 22 pp.

Megrey, B.A., Rose, K.A, Werner, F.E., Klumb, R.A., Hay, D. (2002) A Generalized Fish Bioenergetics/Biomass Model with an Application to Pacific herring, pp. 80 to 88. In: 2001 BASS/MODEL, MONITOR and REX Workshops, and the 2002 MODEL/REX Workshop. H.P. Bachelder, G.A. McFarlane, B.A. Megrey, D.L. Makas, W.T. Peterson (editors). PICES Scientific Report, August 2002, No. 20. 176pp.

Megrey, B.A., M.J. Kishi, M.B. Kashawai, D. Ware, F.E. Werner, D.L. Eslinger (2000) Model Task Team Workshop Report: Final Report of the International Workshop to Develop a Prototype Lower Trophic Level Ecosystem Model for Comparison of Different Marine Ecosystems in the North Pacific. PICES Scientific Report No. 15:1-78

Report of the Workshop on "Ocean Climate of the NW Atlantic of the NW Atlantic During the 1960s and 70s and Consequences for Gadoid Populations" (1999) co-authored by F. Werner, K. Brander and S. Murawksi. ICES Cooperative Research Report No. 234, ISSN 1017-6195, 81pp.

Report of the ICES Third Backward Facing Workshop, "Ocean Climate of the NW Atlantic during the 1960s and 70s and Consequences for Gadoid Populations" (1998) co-authored by F. Werner, K. Brander and S. Murawksi. (<http://www.ices.dk/reports/occ/wkbfac98.doc>)

Northwest Atlantic Cod and Climate Change Working Group. Report on "Cod and Climate Change Related Research Programs in the United States and Canada." (1995)

Werner, F.E. and D.R. Lynch. Tides in the southern North Sea/English Channel: data files and procedure for reference computations (1998). Numerical Methods Laboratory, Thayer School of Engineering, Dartmouth College, February 1988; 26pp + 2 diskettes with software.

Abstracts

Werner, F.E., K.A. Rose, B.A. Megrey, M. Aita-Noguchi and Y. Yamanaka (2006) Simulated Herring Growth Responses in the Northeastern Pacific to Historic Temperature and Zooplankton Conditions Generated by the 3-Dimensional NEMURO NPZ Model. *Trans. AGU, Ocean Sci. Meet. Suppl.*, 87, OS36K-06.

- Wiebe, P., M. St. John, F. Werner, B. deYoung, R. Harris, D. Haidvogel, O. Asthorsson and F. Carlotti (2006) Basin-scale oceanographic and climate related processes on the dynamics of plankton and fish populations in the North Atlantic Ocean. *Trans. AGU, Ocean Sci. Meet. Suppl.*, 87.
- Edwards, K.P., J.A. Hare, F.E. Werner and H.E. Seim. Lagrangian description of marine larval dispersal kernels. Workshop on advancements in modelling physical-biological interactions in fish early-life history: recommended practices and future directions, Nantes France, April 2006.
- Edwards, K.P., J.A. Hare, F.E. Werner and H.E. Seim. Lagrangian description of 2-D marine larval dispersal kernels. *Ocean Sciences*, Hawaii, February, 2006.
- Aretxabaleta, A.L., J.R. Nelson, H.E. Seim, B.O. Blanton, F.E. Werner, and E.P. Chassignet (2006) Cold Event in the South Atlantic Bight During Summer of 2003: Model simulations and implications. *EOS, Trans. AGU, Ocean Sci. Meet. Suppl.*, 87, OS36J-07, 2006.
- Edwards, K.P., SEACOOS and Fisheries Oceanography in the South Atlantic Region. SAFMC Research and Monitoring Workshop: Ecosystem Management in the South Atlantic Region. Charleston, SC, November 2005.
- Aretxabaleta, A., F. Werner, J. Nelson H. Seim and B. Blanton, Cold event in the South Atlantic Bight during summer of 2003: an anomalous event or the beginning of a shift?, XXI Trobades Científiques de la Mediterrània, Menorca, Spain, 2005.
- Edwards, K. P., J. Hare, and F. E. Werner, B. O. Blanton and G. Sedberry, Comparison of observed and modelled drifters on the Southeast U.S. Continental Shelf: implications for larval dispersal and retention. *Advances in Marine Ecosystem Modeling Research*, Plymouth, UK, 2005.
- Aretxabaleta, A., C. Edwards, H. Seim and J. Nelson, Characterizing spring and summer Gulf Stream water intrusions in the mid-shelf of the South Atlantic Bight, Gordon Research Conference, Coastal Ocean Circulation, New London, NH, 2005.
- Werner, F.E., M. Barange, R.I. Perry and R. Ommer (2004). Earth systems, fish and fishers: global dependence and a not-so-quiet revolution. *EOS Trans. AGU: 85(47)*, Fall Meet. Suppl., Abstr. B32A-02.
- S-I. Ito, M.J. Kishi, A. Yatsu, Y. Oozeki, K. Komatsu, Y. Yamanaka, B.A. Megrey and F.E. Werner (2004) An application of NEMURO.FISH for multi-species model. *PICES Annual Science Conference*, October 2004, Hawaii, USA.
- Megrey, B.A. and F.E. Werner (2004) Evaluating the role of top-down versus bottom-up ecosystem regulation from a modeling perspective. *PICES Annual Science Conference*, October 2004, Hawaii, USA.
- Ito, S-I., M.J. Kishi, D. Mukai, Y. Kurita, Y. Ueno, Y. Yamanaka, B.A. Megrey and F.E. Werner (2004) A study for interannual variability of Pacific saury using a simple 3-box model of NEMURO.FISH. *PICES Annual Science Conference*, October 2004, Hawaii, USA.
- Aretxabaleta, A, Manning, J, Werner, F, Smith, K, Blanton, B, Lynch, D (2003) Hindcasting May 1999 on the Southern Flank of Georges Bank: Frontal Circulation and Implications. *Eos Trans. AGU*, 84(52), *Ocean Sci. Meet. Suppl.*, 2003.

- Castillo, M, Bello, M, Maturana, J, Valenzuela, C, Borzone, L and Werner, F (2003) Circulation experiment at Valparaiso bay, Chile. *Eos Trans. AGU*, 84(52), Ocean Sci. Meet. Suppl., 2003.
- Lough, G, Broughton, E, Manning, J, Buckley, L, Incze, L, Wolf, N, Werner, F, Pehrson Edwards, K, Converse, R and Aretxabaleta, A (2003) Environmental Consequences of Tidal-Front Entrainment in Larval Fish Along the Southern Flank of Georges Bank. *Eos Trans. AGU*, 84(52), Ocean Sci. Meet. Suppl., Abstract, 2003.
- Quinlan, J.A., F.E. Werner, R.G. Lough, L.J. Buckley and S.M. Gallagher (1999) Examining the cohort level implications of small scale turbulence, prey field and selectivity: A study of larval cod and haddock on Georges Bank. ASLO 1999 Aquatic Sciences Meeting - Santa Fe, N.M. ASLO 1999. In: Aquatic Sciences Abstract Book, page 144.
- Quinlan, J.A., F.E. Werner, S. Gallagher, R.G. Lough, J van Keuren and L.J. Buckley (1998) Modeling the growth of first-feeding cod larvae on Georges Bank. *EOS, Trans. Am. Geophys. Union*, 79:OS48.
- Werner, F.E., R.G. Lough, J.A. Quinlan, L.J. Buckley and J van Keuren (1998) A model-based study of feeding, growth and survival of cod and haddock larvae on Georges Bank in late spring: 1993 versus 1994. *EOS, Trans. Am. Geophys. Union*, 79:OS155-156.
- Blanton, B.O., F.W. Werner, J.M. Bane Jr., T.J. Shay and P.H. Hamilton (1998) Mass-fluxes between the Middle and South Atlantic Bights: a model-based study. *EOS, Trans. Am. Geophys. Union*, 79:OS182.
- Churchill, J.H., J.O. Blanton, F.E. Werner and R.A. Luettich (1997) Flood tide circulation through Beaufort Inlet, N.C.: Implications for larval recruitment In: ASLO 97, Aquatic Sciences Meeting Program, The American Society of Limnology and Oceanography, Santa Fe, NM, 10-14 Feb 1997, p124.
- Hare, J.A., J.J. Govoni, D.E. Hoss, L.R. Settle, F.E. Werner (1997) The relationship between larval vertical distribution and cross-shelf transport in the Carolina Capes region In: ASLO 97, Aquatic Sciences Meeting Program, The Amer. Soc. of Limnology and Oceanogr., Santa Fe, NM, 10-14 Feb 1997, p182.
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Werner, F.E., J.O. Blanton and D.R. Lynch (1991) Circulation on the U.S. continental shelf during autumn 1987. *EOS, Transactions, American Geophysical Union*, **71**:1043.

Werner, F.E. and D.R. Lynch (1989) 3-D Finite Element Modeling of the Circulation in the Gulf of Maine and the Bay of Fundy. In: *The Implications of Slope Water Intrusions in the Gulf of Maine*. Proceedings of a Workshop, Boothbay Harbor, Maine, 6-7 March 1989; pp 34-37.

Lynch, D.R. and F.E. Werner (1988) Finite element solution of the Alborán Sea circulation. In: *Western Mediterranean Circulation Experiment (WMCE) Newsletter* **11**:11.

Werner, F.E. and D.R. Lynch (1986) Shallow water equation case studies with finite elements. *EOS, Transactions, American Geophysical Union*, **67**:293.

Werner, F.E. and B.M. Hickey (1980) A numerical model of coastal circulation of Washington and Oregon: the effect of a longshore pressure gradient. *EOS, Transactions, Amer. Geophys. Union*, **61**:985.

Conferences (presentations and posters)

AGU/ASLO/TOS Ocean Sciences Meeting, Feb 2006 (poster presentations and session co-convenor)

AMEMR Conference, Plymouth, UK, 2005 (poster and oral presentation).

Gordon Conference on Coastal Ocean Circulation (poster), New London, NH, June 2005.

ASLO Summer Meeting, Savannah, GA, 2004. (oral, presentation by A. Aretxabaleta)

AGU Ocean Sciences, December, 2004, San Francisco, CA, oral.

GLOBEC Highlights and Future Integration and Synthesis Activities (presented March 2004 at the Marine Productivity Meeting held at the Royal Society, London)

Marine Science in Alaska: 2004 Symposium, Anchorage, AK, January 12-14, 2004, papers presented.

AGU Ocean Sciences, January 26-30, 2004, Portland Oregon, papers presented.

PICES XII, Seoul, South Korea, paper presented, Oct 13-17, 2003.

Gordon Research Conference on Coastal Ocean Modeling, Vice-Chairman and posters presented, New London, CT, 23-27 June 2003.

XXIII Congreso de Ciencias del Mar, Universidad de Magallanes, Pta. Arenas, 5-8 de Mayo 2003; (presentations by co-authors M. Bello and J. Maturana).

Zooplankton Symposium, Poster presented, Gijón, Spain, May 2003.

OCEANS Open Science Meeting, Invited Speaker, Paris, France, January, 2003.

XXII Congreso de Ciencias del Mar, Universidad Austral de Chile, Valdivia, 28-31 de Mayo 2002, poster presented.

American Geophysical Union, San Francisco, Dec 2002.

Workshop on Spatially-Explicit Models of Oceanic and Fisheries Processes. Invited Speaker, Bergen, Norway, 6-8 March 2000.

ICES Statutory Meeting, Stockholm, Sweden, Oral Presentation, 29 Sept-2 Oct. 1999.

Gordon Conference on Coastal Ocean Modeling, Invited speaker. New London, CT, 20-24 June 1999.

Taller-Tertulia en Oceanografía. Invited Speaker, Univ. de Las Palmas de Gran Canaria, 2-6 Nov. 1998.

Ocean Circulation and Climate, The 1998 Conference of the World Ocean Circulation Experiment, Halifax, Canada, 24-29 May. Poster: "The Climatological Mean Circulation of the North Atlantic", D.A. Greenberg, F.E. Werner and M.S. Lozier.

AGU-ALSO Ocean Sciences Meeting, 9-13 February 1998, San Diego, CA, USA.

ICES Annual Science Conference, 25-30 September 1997, Baltimore, MD, USA.

ICES Symposium on Biological-Physical Interactions, 22-24 Sept. 1997, Baltimore, MD, USA.

Third International Symposium on Flatfish. Keynote speaker: Explaining Variability in Fish Populations: The Role of Hydrodynamics. 3-8 November 1996, Texel, The Netherlands.

Regional Association for the Gulf of Maine (RARGOM). Poster entitled “Upper-Ocean Transport Mechanisms from the Gulf of Maine to Georges Bank, with Implications for Calanus Supply”. (Hannah, Naimie, Loder and Werner). St. Andrews, N.B., Canada, 16-17 Sept. 1996.

American Geophysical Union Fall/American Society of Limnology and Oceanography Meeting, San Diego, February 1996. Papers presented.

ICES Statutory Meeting. Paper presented at Theme Session on “Intermediate Scale Physical Processes and their Influence on the Transport and Food Environment of Fish”, 21-26 Sept. 1995. Aalborg, Denmark.

Southeast Coastal Ocean Research (SECOR) Conference. Invited speaker at the Workshop on Modeling Biological/Physical Coupling in Coastal Ecosystems. Seabrook Island, S.C., Nov. 17-20, 1994.

Southeast Coastal Ocean Research (SECOR) Conference. A 3-D model study of inlet dynamics: processes affecting larval exchange (with A. Kapolnai and J. Blanton); and A Model of the Debouchment of Wassaw Sound (with T. Gross). Seabrook Island, S.C., Nov. 17-20 1994.

Conference on Environmental Impact Prediction: Simulation for Environmental Decision-Making, North Carolina Supercomputing Center, Research Triangle Park, NC, 6-7 Oct. 1994. Paper presented.

Joint Numerical Sea Modeling (JONSMOD) Conference, Management Unit of Mathematical Models (MUMM), Brussels, Belgium, 25-28 July 1994. Paper presented.

American Geophysical Union Fall/American Society of Limnology and Oceanography Meeting, San Diego, February 1994. Papers presented.

American Fisheries Society Meeting, August 28-Sept 1, 1993, Portland, Oregon. Paper presented.

ICES Symposium No. 23 on Cod and Climate Change, August 23-27, 1993, Reykjavik, Iceland. Paper “The influence of advective processes on the interannual variability in cod eggs and larvae distributions on Georges Bank”, presented by R.G. Lough.

Gordon Conference on Coastal Oceanography, Plymouth, New Hampshire, June 14-18, 1993. Poster “The Seasonal Mean Circulation on Georges Bank” by C. Naimie, D. Lynch, J. Loder, F. Werner, D. Greenberg and C. Hannah.

CMOS (Canadian Meteorological and Oceanographic Society), 27th Annual Congress, June 7-11, 1993, University of New Brunswick, Fredrickton, NB, Canada. Papers on Distributions on Georges Bank of Cod and Haddock (presented by F. Page) and Scallops (presented by J. Loder).

SIAM (Society of Industrial and Applied Mathematics, Southeastern - Atlantic Section), March 26-27, 1993; Georgia Southern University, Statesboro, GA. Paper presented.

The Oceanography Society (TOS) Scientific Meeting, Seattle, WA, April 13-16, 1993. Poster.

American Geophysical Union Fall Meeting, December, 1992, San Francisco. Paper presented.

Joint Numerical Sea Modeling (JONSMOD) Conference, Danish Hydraulic Institute, Copenhagen, Denmark, 3-6 August 1992. Paper presented.

American Geophysical Union Fall Meeting, December, 1990, San Francisco. Paper presented.

Joint Numerical Sea Modeling (JONSMOD) Conference, Proudman Oceanographic Laboratory, Bidston, U.K., 2-6 April 1990. Paper presented.

XIVth General Assembly of the European Geophysical Society (1989). Barcelona, Spain. Poster with A. Cantos-Figuerola and G. Parrilla.

VIIIth International Conference on Finite Elements and Flow Problems (1989), Huntsville, Alabama. Papers presented with D. Lynch and R. Walters.

Ist International Conference on Tidal Hydrodynamics, Gaithersburg, MD, Nov. 1988. Poster.

VIIIth International Conference on Computational Methods (formerly Finite Elements) in Water Resources and 2nd Tidal Flow Forum, Boston (1988). Paper presented.

Symposium on “Oceanografía del Mediterráneo Nor-Occidental”. Gerona (Centro de Estudios Avanzados), Spain, October 1987. Poster with A. Cantos-Figuerola and G. Parrilla.

American Geophysical Union Spring Meeting, April, Baltimore (1986). Paper presented.

XXXth Assemblée Pleniére of the CIESM in Palma de Mallorca, Spain, October 1986. Poster with A. Cantos-Figuerola and G. Parrilla.

VIth International Conference on Finite Elements in Water Resources and 1st Tidal Flow Forum, Lisbon, Portugal (1986). Paper presented.

Vth Intl Conf. on Finite Elements in Water Resources, Burlington, Vermont (1984). Paper presented.
Vth Intl. Conf. on Finite Elements and Flow Problems, Austin, Texas (1984). Paper presented.
American Geophysical Union Fall Meeting, December, 1980, San Francisco. Paper presented.

Invited Seminars

NC State Univ., April 2007.
Duke Univ. Marine Lab. Feb 14, 2007.
Univ. Hamburg, Germany, 30 October, 2006.
IMEDEA, Mallorca, Spain, 1 Nov, 2006.
Univ. South Florida, 23 Sept 2005.
NOAA, Silver Spring IOOS Mini-symposium, 23 Aug 2005.
AZTI, Basque Fisheries Center, San Sebastian, Spain, 19 July 2002.
Texas A&M. Oceanography Dept., College Station, TX, 29 November 1999.
UNC-CH. Computations and Modelling Seminar Series, 3 November 1999.
Memorial University. St. John's, Newfoundland, Canada, 8 October 1999.
NC Estuarium. Washington, NC, 19 August 1999.
Scripps Institute of Oceanography. San Diego, CA, 19 and 20 May 1998.
University of Concepción, Dept. of Fisheries and Biology. Concepción, Chile, 16 April.
University of Concepción, Dept. of Physics and Mathematics. Concepción, Chile, 15 April 1998.
University of Chile, Department of Engineering Mathematics. Santiago, Chile, 13 April 1998.
University of Notre Dame, Dept. of Civil Engineering and Geological Sciences, 8 October 1996.
University of Connecticut, Department of Marine Sciences, 13 October 1995.
University of North Carolina at Wilmington, Department of Biology, 17 February 1995.
North Carolina State University, Dept. of Marine, Earth and Atmos. Sci, Raleigh, NC, 5 Dec. 1994.
University of North Carolina at Chapel Hill, School of Environmental Sciences and Engineering, 30 November 1994.
Virginia Institute of Marine Sciences (VIMS), 27 April 1994.
National Oceanic and Atmospheric Administration (NOAA), Washington, D.C., 1 July 1993.
Savannah State College, Marine Biology Department, May 1993.
Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE), Ensenada, Baja California, MEXICO, March 1993.
Southwest Fisheries Center, National Marine Fisheries Service, La Jolla, CA, March 1993.
St. Andrews Biological Station, St. Andrews, New Brunswick, CANADA, October 1992.
Old Dominion University, Center for Coastal Physical Oceanography, September 1992.
Division of Natural Resources, Coastal Resources Division, Brunswick, GA, February 1992.
University of Georgia, Athens, GA, February 1992.
Armstrong State College, Savannah, GA, January 1992.
Instituto de Ciencias del Mar, Barcelona, SPAIN, December 1991.
Instituto Español de Oceanografía, Palma de Mallorca, SPAIN, December 1991.
Universidad de las Islas Baleares, Palma de Mallorca, SPAIN, December 1991.
Institut Mecanique de Grenoble, Grenoble, FRANCE, November 1991.
University of California, Santa Cruz, June 1991.
Universidad de las Islas Baleares, Palma de Mallorca, SPAIN, April 1990.
Princeton University, Water Resources Program, Winter 1988.
Skidaway Institute of Oceanography, Fall 1987.
Dartmouth College, Earth Sciences Department, January 1987.
Harvard University, Division of Applied Sciences, November 1984.
Dartmouth College, Thayer School of Engineering, October 1984.
Skidaway Institute of Oceanography, Savannah, GA, April 1984.