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Education: B.A.; Zoology, 1969, Pomona College
Ph.D.; Zoology, 1976, University of California, Berkeley

Positions:

2005 – present	Director
1988 - 2005	Assistant Director
1979 - Present	Marine Ecologist Smithsonian Environmental Research Center Smithsonian Institution Edgewater, Maryland
1978 - 1979	Senior Marine Biologist TERA Corporation Berkeley, California
1975 -1979	Postdoctoral Research Biologist Center for Coastal Marine Studies University of California Santa Cruz, California

Adjunct Positions:

1989 - Present	Adjunct Professor, Department of Biology Participating Professor, Department of Marine, Estuarine & Environmental Sciences University of Maryland College Park, Maryland
1992 - Present	Adjunct Professor Department of Marine, Earth & Atmospheric Sciences North Carolina State University Raleigh, North Carolina
2001 – Present	Adjunct Faculty Virginia Institute of Marine Science, School of Marine Science College of William & Mary Gloucester Point, Virginia
2001 – Present	Adjunct Faculty Center of Marine Biotechnology University of Maryland Biotechnology Institute Baltimore, Maryland

Awards:

Scaife Foundation Scholarship (1965-69)
Vaile Prize in Zoology, Pomona College, 1969
Teaching/Research Assistantships, University of California Berkeley (1969-1975)
Smithsonian Institution Postdoctoral Research Fellowship, 1979 (declined)
Recipient of 60+ grants and research awards, (1975-present)
Distinguished Research Fellowship, New Zealand Nation. Inst. Water & Atmos. Research (1993)
Visiting Research Fellowship, Japan Society for Promotion of Science (1995)
U.S. Patent #6,584,935 "Process for Culturing Crabs in Recirculating Marine Aquaculture System" (2003)
Dillon Award for perpetual and unique land preservation, Maryland Environmental Trust (2009)

Publications:

Hines, A.H. 1976. The comparative reproductive ecology of three species of intertidal barnacles. Ph.D. Dissertation, University of California, Berkeley. 259 pp.

Cooper, J., M. Wieland, and A. Hines. 1977. Subtidal abalone populations in an area inhabited by sea otters. Veliger 20:163-167.

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Lipcius, R.N. and A.H. Hines. 1986. Variable functional responses of a marine predator in dissimilar homogeneous microhabitats. Ecology 67:1361-1371.

Hines, A.H., P.J. Haddon, J.J. Miklas, L. A. Wiechert, and A. M. Haddon. 1987. Estuarine invertebrates and fish: Sampling design and constraints for long-term measurements of population dynamics. ASTM STP 940, American Society for Testing and Materials, Philadelphia, pp. l40-l64.

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deRivera, C.E., G.M. Ruiz; J. Crooks, K. Wasson, S. Lonhart, P. Fofonoff, B. Steves, S. Rumrill, M.S. Brancato, S. Pegau, D. Bulthius, R. Kvist Preisler, C Schoch, E. Bolbly, A. DeVogelaere, M. Crawford, S. Gittings, A. Hines, L. Takata, K. Larson, T. Huber, A.M. Leyman, E. Collinetti, T. Pascott, S. Shull, M. Anderson, and S. Powell. (With taxonomic assistance by: L. McCann, G. Lambert, L. Henry, N.G. Hitchcock, C. Brown, F. Kerkoff, J. Goddard, and E. Collinetti). 2005. Broad Scale Non-Indigenous Species Monitoring along the West Coast National Marine Sanctuaries and National Estuarine Research Reserves. Final Report to National Fish and Wildlife Foundation. Smithsonian Environmental Research Center, Edgewater, MD 21037. 126 p.

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Jivoff, P.R., A.H. Hines, and S. Quackenbush. 2007. Blue crab reproductive biology. Pp. 255-298 in: Kennedy, V.S. and L.E. Cronin (eds.), The Blue Crab *Callinectes sapidus*. Maryland Sea Grant College Program, College Park, MD.

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Hines, A.H., E.G. Johnson, A.C.Young, R. Aguilar, M.A. Kramer, M. Goodison, O. Zmora, and Y. Zohar. 2008. Release strategies for estuarine species with complex migratory life cycles: Stock enhancement of Chesapeake blue crabs, *Callinectes sapidus*. Reviews in Fisheries Science 16:175-185.

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Johnson, E.G., A.H. Hines, M.A. Kramer, and A. Young. 2008. Importance of season and size of release to stocking success for the blue crab in Chesapeake Bay. Reviews in Fisheries Science 16:243-253.

Young, A., E.G. Johnson, A.H. Hines, J. Davis, O. Zmora, and Y. Zohar. 2008. Do hatchery-reared blue crabs differ from wild crabs, and does it matter? Reviews in Fisheries Science 16:254-261.

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Hines, A. and P. Rodgers. 2008. Evolutionary Ecology of Social and Sexual Systems. Crustaceans as Model Organisms. Book Review. Limnology and Oceanography Bulletin 17(2):61-62.

Breitburg, D.L., Craig, J.K, Fulford, R.S., Rose, K.A, Boynton, W.R, Brady, D., Ciotti, B.J., Diaz, R.J., Friedland, K.D., Hagy, J.D. III, Hart, D.R., Hines, A.H., Houde, E.D., Kolesar, S.E., Nixon, S.W., Rice, J.A., Secor, D.H., Targett, T.E. (in press). Nutrient enrichment and fisheries exploitation: Interactive effects on estuarine living resources and their management. Hydrobiologia, Special Issue on Eutrophication. 629:31-47.

Hines, A.H. 2009. Land-sea interactions and human impacts in the coastal zone. Pp. 10-23 in Lang, M. (Ed.), Smithsonian Marine Science Network. Smithsonian Contributions in Marine Science, Washington D.C

Hines, A.H., W.C. Long, J.R. Terwin and S.F. Thrush. 2009. Facilitation, interference, and scale: the spatial distribution of prey patches affects predation rates in an estuarine benthic community. Marine Ecology Progress Series 385:127-135.

Recent Scientific Presentations:
(Average ca. 5+ first authored and 10+ second-authored presentations per year, plus numerous presentations to public audiences and visiting groups.)
American Society of Zoologists; Estuarine Research Federation; Benthic Ecology Meetings; Ecological Society of America; National Blue Crab Symposium; Brown University; Florida State University; Hopkins Marine Station; National Forum on Ocean Conservation; University of Connecticut; Crustacean Society Meetings; First European Crustacean Conference in Paris; Maryland Department of Natural Resources; Maurice Lamontagne Institute of Quebec; American Water Resources Association; Estuarine Research Federation Meetings; Leigh Marine Laboratory of University of Auckland; New Zealand National Institute Water and Atmospheric Research; EPA Shallow Water Conferences; Connecticut Sea Grant Exotic Species Conference; Nara Women's University; Kyushu University; University of Maryland at College Park; Gettysburg College; Calvert Marine Museum; Second European Crustacean Conference in Liège; Netherlands Institute voor Onderzoek der Zee; Universidade da Coruña, Spain; American Academy of Underwater Scientists; International Council for Exploration of the Sea; Kristineberg Marine Research Station, Sweden; Blue Crab Ecology Workshop, UNC Wilmington; Mid-Atlantic Regional Governmental Assessment of Invasive Species; Marine Bioinvasions Conferences, Cambridge and New Orleans; Pratt Museum, Homer Alaska; Indian River Community College, Florida; Kennedy Space Center, Florida; American Fisheries Society, Alaska Chapter Meeting; Center of Marine Biotechnology, University of Maryland Biotechnology Institute; Kachemak National Estuarine Research Reserve, Alaska; Rider University, New Jersey; Chinese Academy of Sciences, Beijing; Qingdao Institute of Oceanology, China; Workshop at Kennedy Space Center, Florida; 6th International Crustacean Congress, Glasgow Scotland; Stock Enhancement of Cold-Water Crabs, AK Sea Grant Workshop, Kodiak, Alaska; Third International Symposium on Stock Enhancement and Sea Ranching, Seattle, Washington.

Exhibits:
1990 The Java History Trail. History of human land use of the Rhode River watershed. With Mark Haddon.
2000 Tales of the Blue Crab. Traveling exhibit. With Mark Haddon.
2002 Blue Crab Exhibit. National Zoological Park Invertebrate Zoo. With Midge Kramer.
2003 Blue Crab Exhibit. Maryland Science Center. With Midge Kramer.
2004 Ocean Hall, advisory support. National Museum of Natural History.

Fund Raising for Education and Public Programs:
1990. Smithsonian Special Exhibit Fund, $220,0000 for The Java History Trail.

1992. Philip D. Reed Foundation, $315,000 for Public Education Building.

1993. The Knapp Foundation, $20,000 for Public Education Building.
Individual Donors, $20,000 for Minority Internships.
Esther Beller Estate, $100,000 for Public Education Building.

1994. The James C. Penney Foundation, $20,000 for Minority Internships.
Smithsonian Women's Committee, $15,000 for Public Education Building.

The NationsBank, $5,000 for Public Education Building.
Individual Donors, $2,000 for Public Education Building.

1995. The James C. Penney Foundation, $20,000 for Minority Internships.;
Philip D. Reed Foundation, $69,000 for Public Education Building.
F. Magid, Inc., $2,000, unrestricted.

1996. SI Latino Affairs, $32,500, Internships & Fellowships: Latinos in Environmental Sciences.

1997. Disney Wildlife Conservation Fund, $10,000. Training Blue Crab Telemetry.
SI Latino Affairs, $37,000, Internships for Latinos in Environmental Sciences.

1998. Disney Wildlife Conservation Fund, $15,000, Innovations for Blue Crab Telemetry.

1999. Disney Wildlife Conservation Fund, $10,000, Biotelemetry of Blue Crab Biology.

2000. Disney Wildlife Conservation Fund, $20,000, SERC Conservation Biology,
(with R.B. Simons, G. Ruiz)

2000. Maryland Rural Legacy Program, $2,000,000, Anne Arundel Rural Legacy Area,
(with B. Polito)

2000. Private Donation. $40,000, Internships and Graduate Fellowships (with R.B. Simons)

2001. National Sea Grant, $150,000, SG-MSI Partnership Program: Increasing Research and Educational Opportunities in Marine and Related Sciences for Under-represented Students at Morgan State University through Partnership with the Smithsonian Environmental Research Center, (with L. Marshall, P. Marra)
Research Experience for Undergraduates in Environmental Sciences, $210,000 over 3 yrs, National Science Foundation (PIs: P. Marra and D.W. Coats).
Disney Wildlife Conservation Fund, $10,000, Nonindigenous Species in Marine Ecosystems (with A.H. Hines, G.M. Ruiz, R.B. Simons)

2002. Disney Wildlife Conservation Fund, $10,000, Nonindigenous Species in Marine Ecosystems (with A.H. Hines, G.M. Ruiz, R.B. Simons)
Exxon Mobil Land Development Corporation, 96 acre land parcel valued at $1,300,000, Land Conservation for Environmental Research and Education (with R.B. Simons, J. Douglas)
2004. Private Donation. $20,000, Graduate Fellowships.
2005. Private Donations. $ 5,000 general contributions to SERC.
2006. Private Donations. $ 6,000 general contributions to SERC.
2007. Private Donations. $23,000 general contributions to SERC.
2008. Private Donations. $35,000 general contributions to SERC.
2009. Private Donations. $35,000 general contributions to SERC.
Maryland Heritage Area Program, $50,000, Cultural heritage of the Contee Farm (with A.M. Haddon).
Chesapeake Gateways Network, U.S. Park Service, $40,000, Contee Watershed Trail (with A.M. Haddon).

Recent Research Grants and Contracts:

1987-1991. Population Dynamics and Community Structure of Invertebrates and Fish of the Rhode River Subestuary. Environmental Sciences Program, Smithsonian Institution; ($281, 000 over 5 yr). Principal Investigator: A.H. Hines.

1986-1988. Telemetric Analysis of Movement, Foraging, and Habitat Utilization of Blue Crabs (*Callinectes sapidus*). Scholarly Studies Program, Smithsonian Institution; ($58,000) over 2 yr). Co-Principal Investigators: A.H. Hines and T.G. Wolcott.

1987-1989. Interactive and Non-linear Effects of Predation, Intraspecific Competition and Environmental Variation upon Species Persistence in Marine Soft-bottom Communities. National Science Foundation, Biological Oceanography; ($84,400 over 2 yr). Co-Principal Investigators: A.H. Hines and R.N. Lipcius.

1989-1990. Complex Trophic Interactions of Fish, Shrimp, and Benthic Invertebrates in Chesapeake Bay. Scholarly Studies Program, Smithsonian Institution; ($69,600 over 2 yr). Co-Principal Investigators: A.H. Hines and M. H. Posey.

1982- 2001. Crustacean Life Histories. Hunterdon Fund, Smithsonian Marine Station at Ft. Pierce, Florida. ($5,000 per yr). Principal Investigator: A.H. Hines.

1990-1992. Sources of Mortality, Refuges, and Habitat Utilization by Juvenile Blue Crabs. Scholarly Studies Program, Smithsonian Institution; ($75,000 over 2 yr). Co-Principal Investigators: A.H. Hines and G.M. Ruiz.

1990-1994. Complex Predator-prey Interactions in Marine Soft-Bottom Communities: Crabs, Clams, and Patch Dynamics. National Science Foundation, Biological Oceanography; ($360,000 over 3 yr). Principal Investigator: A. H. Hines Co-Principal Investigators: R.N. Lipcius, T.G. Wolcott, D.L. Wolcott.

1991-1996. Population Dynamics and Community Structure of Invertebrates and Fish of the Rhode River Subestuary. Environmental Sciences Program, Smithsonian Institution; ($290,000 over 5 yr). Principal Investigator: A.H. Hines.

1993-1994. Blue Crabs and Clams in Chesapeake Bay: A Comparison of the Component and Optimal Foraging Approaches to Predator Behavior. Scholarly Studies Program, Smithsonian Institution; ($59,000 over 2 yr). Principal Investigator: A.H. Hines.

1994-1996. Susceptibility of Chesapeake Bay to Invasions of Exotic Species Associated with Ballast Water. Maryland Sea Grant Program; ($160,000 over 3 yr). Co-Principal Investigators: G.M. Ruiz, A.H. Hines, D.W. Coats, W.B. Jaeckle.

1994-1996. Biological Analysis of Ballast Water in Naval Vessels entering Chesapeake Bay. Dept. of Defense Legacy Program; ($460,000 over 2 yr). PI: G.M. Ruiz; Co-PIs: A.H. Hines, J.T. Carlton.

1994-1996. Understanding Ballast-Mediated Invasions: the Effects of Ballast Water Transport and Prolonged Darkness on Survival and Development of Exotic Invertebrates Smithsonian Scholarly Studies Program; ($70,000 over 2 yr). PI: L.D. Smith; Co-PIs: G.M. Ruiz, A.H. Hines, J.T. Carlton.

1994-1997. History of nonidigenous species invasions of Chesapeake Bay, Parts I & II. U.S. Fish & Wildlife Service ($98,000 over 3 yrs). PI: G.M. Ruiz; Co-PIs: A.H. Hines, R.A. Everett, J.T. Carlton.

1995. Changes in Ballast Water Plankton Assemblages During Transoceanic Voyages. NATO International Scientific Exchange Programmes ($6,800 over 1 yr). PI: G.M. Ruiz; Co-PIs: L.D. Smith, J.T. Carlton, A.H. Hines, J.W. Lenz, S. Gollasch, M.E. Dammer.

1995-1996. Habitat Value of Natural and Altered Shorelines in Chesapeake Bay. Habitat Restoration, Living Resources Subcommittee, EPA Chesapeake Bay Program ($41,000 over 1 yr). PIs: A.H. Hines, R.A. Everett, G.M. Ruiz.

1995. Comparative Life Histories of Brachyuran Crabs. Japan Society for the Promotion of Science ($5,000). PI: A.H. Hines.

1987-1998. Population Dynamics and Community Structure of Invertebrates and Fish of the Rhode River Subestuary. Environmental Sciences Program, Smithsonian Institution; ($81, 000 per yr). PI: A.H. Hines.

1994-1997. Susceptibility of Chesapeake Bay to Invasions of Exotic Species Associated with Ballast Water. Maryland Sea Grant Program; ($160,000 over 3 yr). Co-Principal Investigators: G.M. Ruiz, A.H. Hines, W. Coats, W.Jaeckle.

1994-1997. Biological Analysis of Ballast Water in Naval Vessels entering Chesapeake Bay. Dept. of Defense Legacy Program; ($460,000 over 3 yr). PI: G.M. Ruiz; Co-PIs: A.H. Hines, J.T. Carlton.

1994-1996. Understanding Ballast-Mediated Invasions: the Effects of Ballast Water Transport and Prolonged Darkness on Survival and Development of Exotic Invertebrates. Smithsonian Scholarly Studies Program; ($70,000 over 2 yr). PI: L.D. Smith; Co-PIs: G.M. Ruiz, A.H. Hines, J.T. Carlton.

1994-1997. History of Nonindigenous Species Invasions of Chesapeake Bay, Parts I & II. U.S. Fish & Wildlife Service ($98,000 over 3 yrs). PI: G.M. Ruiz; Co-PIs: A.H. Hines, J.T. Carlton.

1995-1996. Habitat Value of Natural and Altered Shorelines in Chesapeake Bay. Habitat Restoration, Living Resources Subcommittee, EPA Chesapeake Bay Program ($41,000 over 1 yr). Co-PIs: A.H. Hines, R.A. Everett, G.M. Ruiz.

1996-2001. RTG: Biology in Small Populations. Research Training Grant Program, National Science Foundation ($1,500,000 over 5 yrs). PIs: G. Wilkinson & P.A. Abrams; Co PIs: A.H. Hines and 14 others from SI and Univ. Maryland, College Park.

1997. Non-Indigenous Coastal Species at High Latitude: Ballast Water Transport into Prince William Sound, Alaska. Regional Citizens Advisory Council ($62,750 over 1 yr). Co PIs: A.H. Hines, G.M. Ruiz, J.R. Chapman, G.I. Hansen.

1997. Indian River Lagoon Species Inventory. National Estuary Program ($22,000 over 1 yr). PIs: A. H. Hines, G.M. Ruiz, J.F. Dineen, M.E. Rice

1998. Indian River Lagoon Species Web Page. Seidel Fund, Smithsonian Institution: ($17,000 over 1 yr). Co PIs: A.H. Hines, J.F. Dineen, G.M. Ruiz, M.E. Rice.

1998-2000. Marine Species of China Seas. Translation from Chinese to English. Seidel Fund, Smithsonian Institution ($50,000 over 3 yrs). PIs: A.H. Hines, J. Lin, G.M. Ruiz.

1997-1999. Biological Invasions of Cold-Water Coastal Ecosystems: Ballast-Mediated Introductions in Port Valdez/Prince William Sound, Alaska. National Sea Grant and Regional Citizens Advisory Council of Prince William Sound ($173,000 + $290,000 non-federal match). Co-PIs: A.H. Hines, G.M. Ruiz, N. Foster, H. Feder, J. Chapman, G. Hansen.

1998-2000. Measuring the Transfer, Dynamics, and Risk of Invasion for Microbial. Communities Associated with Ballast Water from Ships. Maryland Sea Grant ($148,000 for 2 yrs). Co-PIs: G.M. Ruiz, A.H. Hines, F.C. Dobbs, A. Huq.

1998-2001. A Field Test of Source Sink Dynamics in Marine Ecosystem: Linking Recruitment, Dispersal and Post-Settlement Processes in Space and Time. National Science Foundation ($325,000). Co-PIs: R.N. Lipcius, R. D. Seitz, A.H. Hines, R. Mann, M.W. Luckenbach

1998-1998. Ballast Water Exchange Experiments. American Petroleum Institute ($34,500 for 1 yr). Co-PIs: A.H. Hines, G.M. Ruiz.

1999-2000. Ballast Water Exchange Experiments. National Sea Grant Program & U.S. Fish & Wildlife Service ($130,000 for 1 yr). Co-PIs: G.M. Ruiz, A.H. Hines.

1998-1999. Analysis of Biofouling Organisms Associated with Power Plants: A Summary of Control Measures and the Importance of Nonindigenous Species. Maryland Department of Natural Resources ($61,000 for 1 yr). Co-PIs: G.M. Ruiz, A.H. Hines

2000-2001. Sperm Allocation and Potential for Sperm Limitation in the Blue Crab, *Callinectes sapidus*.. National Science Foundation, Biological Oceanography ($327,000 over 3 yr). Co PIs: T.G. Wolcott, A.H. Hines, D.L. Wolcott, P.R. Jivoff.

2000-2001. The Relative Importance of Ballast water from Domestic Ship Traffic in Translocation of Nonidigenous Species among U.S. Ports. National Sea Grant ($237,000 for 2 yrs)Co PIs: G.M. Ruiz, A.H. Hines, L.D. Smith, J.T. Carlton.

2000-2001. Ballast Water Management. U.S. Coast Guard ($1,030,000 for 4 yrs). Co-PIs: G.M. Ruiz, A.H. Hines.

2000-2001. Understanding Patterns and Effects of Nonindigenous Species on Multiple Spatial Scales: A Quantitative and Comparative Approach. NOAA National Sea Grant ($300,000 for 2 yr). Co-PIs: G.M Ruiz, A.H. Hines

1999-2002 Marine Invasive Species: Patterns of Invasion and Impacts on Biodiversity. Department of Defense ($266,000 for 3 yr). Co PIs: G.M. Ruiz , A.H. Hines

1999-2002. Marine Invasive Species: Patterns of Invasion and Impacts on Biodiversity. Department of Defense, Legacy Program ($555,000 for 3 yr). Co PIs: G.M. Ruiz, A.H. Hines

2000-2003. Marine invasions in south-central Alaska. PWS Regional Citizens Advisory Council and US. Fish &Wildlife Service ($360,000 for 4 yr). Co PIs: A.H. Hines and G.M Ruiz.

2000-2002. Spatial Dynamics and the Protection of Critical Habitats to Conserve Spawning. Stock and Recruitment in Exploited Marine Species with Complex Life Cycles. NOAA National Sea Grant ($462,000 for 2 yr). PI: R.N. Lipcius, Co-PIs: A.H. Hines, R.D. Seitz, T. Miller, M. Fogarty, L. Marshall, H. V-c. Wang, J. van Montfrans.

2001-2005. Ecological and Socioeconomic Indicators for Integrated Assessment of Aquatic Ecosystems of the Atlantic Slope. EPA ($6,000,000 for 4 yr). PI: R.P. Brooks, Co PIs: D.F. Whigham, A.H. Hines & 28 others.

2001-2002. Anthropogenic Nitrogen Impact and Cycling at the Terrestrial-Estuarine Interface. Melon Foundation/ Smithsonian Institution ($126,000 for 2 yr) Co PIs: A.H.Hines, M. Fogel, M. Wooller , T.J. Jordan.

2001-2002 Aquatic Nuisance species. Coastal Dispersal of Invasive Species in Domestic Ballast Water. National Sea Grant Program. ($207,000 for 2 yr) Co PIs: A.H. Hines, G.M. Ruiz

2002-2004. Winter Mortality of Chesapeake Blue Crabs, *Callinectes sapidus*. ($153,000 for 3 yr) Maryland Sea Grant Program. Co PIs: A.H. Hines, V.S. Kennedy, W. Van Heukelem, T. Miller.

2002. Biological Invasions of Fouling Communities in Tampa Bay, Florida. ($75,000 for 1 yr) US Fish & Wildlife Service. Co PIs: G.M. Ruiz and A.H. Hines.

2002. Biological Diversity and Ecosystem Integrity of the Indian River Lagoon. ($16,000 for 1 yr) NSF Bioinformatics Incubation Grant. Co PIs: M. Musavi, R. Hinkle, G. Gilmore, A. Hines and 6 others.

2002-2004. Detection of Biological Invasions: Comparison of Spatial and Temporal Measures at Core Demonstration sites of Chesapeake Bay, San Francisco Bay, and Tampa Bay. ($150,000 over 3 yr), U.S. Fish & Wildlife Service PIs: G Ruiz, A Hines, & N Smith.

2002-2004. Biological Invasions of Tampa Bay, Florida". ($70,000 for 2 yr), U.S. Fish & Wildlife Service, PIs: G Ruiz & A Hines.

2002-2004. North American On-Line Database of Marine Invasions: Integrating Ecological Analyses and Museum Collections toward Development of a Distributed, International Network". ($200,000 over 3 yr), Richard Lounsbery Foundation. PIs: G Ruiz, A Hines, A Weitzman, & R Simons.

2001-2003. Aquatic Nuisance Species. Coastal Dispersal of Invasive Species in Domestic Ballast Water". ($207,000 for 2 yr), National Sea Grant Program, Co PIs: A.H. Hines & G.M. Ruiz

2001-2004. Coastal Dispersal of Invasive Species in Domestic Ballast Water". Regional Citizens Advisory Council of Prince Williams Sound. ($150,000 for 2 yr). PIs: A Hines & G Ruiz.

2003-2005. Quantitative Analysis of Spatial Patterns of Marine Invasions for North America -- Establishing a National Baseline & Database. ($300,000 over 2 yr), National Sea Grant. PIs: Gregory M. Ruiz, Jeffrey Crooks, & Anson Hines.

2003-2004. Broad-Scale Non-Indigenous Species Monitoring along the West Coast in National Marine Sanctuaries and National Estuarine Research Reserves". ($189,000 over 1 yr), National Fish & Wildlife Foundation. PIs: G.M. Ruiz and A.H. Hines. Co PIs: S. Gittings, M. Crawford, L. Takata, D. Bulthuis, J. Crooks, S. Lonhart, S. Rumrill, K. Wasson.

2003-2005. Invasive Species in Marine Ecosystems: Network Analysis of Fouling and Wood-Boring Communities. ($16,000 over 2 yr). Smithsonian Marine Science Network. Co PIs: A.H. Hines, G.M. Ruiz, R.W. Osman.

2004-2006. The relationship between Native Diversity and Recruitment and Growth: Do They Influence Invasions? ($100,000 over 2 yr). Smithsonian Marine Science Network. Co PIs: R.W. Osman, A.H. Hines, G.M. Ruiz.

2005-2008. Aquatic Invasive Species Research: Invasive Species in Key Tropical U.S. Ports – Extending Standardized Surveys for Islands and Continents. ($296,000 over 4 yr). National Sea Grant. Co PIs: A.H. Hines, G.M. Ruiz, R.W. Osman, L.G. Eldredge.

2005-2006. Effects of Hurricanes on the Structure and Function of Coastal Ecosystems in the Indian River Lagoon. ($70,000 over 2 yr). Smithsonian Office of Under Secretary for Science. Co PIs: I.C. Feller, A.H. Hines, D. Breitburg, G.M. Ruiz, B. Tunberg.

2005-2007. Evaluation of *Crassostrea ariakensis* as a potential sink or reservoir for pathogens and parasites of humans and shellfish. ($295,000 over 2 yr) PI: G. Vasta (UMd-COMB); Co PIs: D. Breitburg, A. Hines, E. Schott (UMd-COMB).

2002 –2009. The Blue Crab, *Callinectes sapidus*: An Integrated Research of Basic Biology, Hatchery Technologies and the Potential for Replenishing Stocks. ($15,500,000 for 6 yr; $2,750,000 to SERC). NOAA Chesapeake Bay Office. Co PIs: Y. Zohar, A. Hines, J. Trant, A. Place, R. Lipcius, D. Eggleston, H. Perry.

2007-2008. Spatial patterns of blue crab recreational fishery exploitation and migratory success of mature females in Maryland. ($102,000 over 2 yr) Maryland Watermen's Association, PI: E.G. Johnson; Co PI: A.H. Hines.

2009-2010. Large-scale blue crab recruitment limitation in upper Chesapeake Bay: Dispersal and post-settlement processes. ($155,000 over 2 yr) Maryland Sea Grant, PI: E.G. Johnson, Co PIs: A.H. Hines, D.Breitburg, D. Weller.

2009-2011. Assessment and Research Activities in Support of Management of the Blue Crab Stock in Chesapeake Bay. NOAA/MDNR/VMRC. $715,000 (Subcontract to SERC $145,187), co-PI, 2 yrs. Miller, T.J., G. Davis, J. Hoenig, E. Johnson, A.H. Hines, R. Lipcius, A. Sharov, and M. Wilberg.

2009-2011. A novel application of bio-geochemical fingerprinting to evaluate the nursery potential of Chesapeake Bay subestuaries for blue crabs. National Oceanic and Atmospheric Administration, Saltonstall-Kennedy Grant Program, $262,700, PI, 2 yrs. Johnson, E.G., G.F. Riedel, and A.H. Hines.

Selected Recent Professional Service, Activities, and Committees:

Bureau Diving Officer, Smithsonian Environmental Research Center. (1979-2005).

Member (1980-present) and Chair (1990-present) of Smithsonian Diving Control Board.

Postdoctoral Fellowship Selection Committee for Environmental Sciences Program, Smithsonian Institution. Member(1980 - present) and Chair (1987 - present).

Reviewer for American Naturalist, Biological Bulletin, Bulletin of Marine Science, Canadian Journal of Fisheries and Aquatic Science, Ecology/Ecological Monographs, Fishery Bulletin U.S., Hudson River Foundation, Journal of Crustacean Biology, Journal of Experimental Marine Biology and Ecology, Marine Biology, Marine Ecology Progress Series, National Science Foundation, Sea Grant, NOAA National Underseas Research Program, and Veliger. (1979-present).

Steering Committee, Larval Biology Workshop, Friday Harbor Laboratories, Univ. of Washington (1985).

Advisory Committee Member, Smithsonian Marine Station, Fort Pierce, Florida. (1982 - present).

Organizer, Portunid Ecology Workshop, Smithsonian Environmental Research Center (1987).

Member (1986 - 1991) and Chair (1990- 1991), Research Policy Committee, Smithsonian Institution.

Participant, Workshop on the Management of the Chesapeake Bay Blue Crab (1987).

Consulting Participant, Workshop on Biology and Management of Snow Crab, Department of Fisheries and Oceans, Government of Canada, Montreal (1987).

Member, Advisory Committee for Jug Bay Wetlands Sanctuary, Anne Arundel County, Maryland (1987 - present).

Convener, National Conference on the Biology, Ecology and Physiology of Blue Crab, Virginia Beach (1988).

Member-at-Large, Atlantic Estuarine Research Society (1988-1990).

Rapporteur and Participant, Workshop on Geryonid Crabs and Associated continental Slope Fauna, NOAA National Undersea Research Program and Florida Sea Grant Program, Tampa, Florida (1989).

Participant, Blue Crab Recruitment Workshop, Virginia Institute of Marine Science, Gloucester Point, Virginia (1989).

Member, Program Committee, Fourth International Congress of Systematics and Evolutionary Biology, College Park, Maryland (1988-1990).

Organizer, Smithsonian National & Residents Associates Programs, Chesapeake Bay Ecology (1988-present).

Chair & Member, Review Panel for Caribbean Marine Research Center (Lee Stocking Island, Bahamas) of the NOAA National Underseas Research Program (1990, 1991, 1993).

Secretary, Division of Ecology, American Society of Zoologists (1991-1993).

Chair & Member, Nominating Committee, American Society of Zoologists (1992-1993).

Member, Smithsonian Animal Welfare Policy Committee (1992).

Member, Smithsonian Conservation Training Council (1993-1994).

Member, Review Panel for Science and Education, Institute of Marine Science, Roatan, Honduras (1992).

Visiting Scientist and Work Group Member, Benthic Community Ecology: Scale and Dynamics, National Institute of Water & Atmospheric Research, Hamilton, New Zealand (1994).

Member (1993-present) and Chair (1993-2000), SERC Institutional Animal Care and Use Committee.

Member, Crab Study Group, International Council for the Exploration of the Sea (1995-1998).

JSPS Visiting Scientist, southern Japan (Nara Women's University, Seto Marine Laboratory, Kyoto University, Shizuoka Prefectural Fish Farming Center, Kyushu University) (1995).

Dive Master, Research Diving Course, University of Honduras and Smithsonian Tropical Research Institute, Cayos Cochinos, Honduras (1995).

Convener, Work Session and Workshop on "Sperm Limitation in Crabs with Intense Fisheries" in Symposium on Recruitment Dynamics of Over-Exploited Species, International Council For Exploration of the Sea, Baltimore Maryland (1997).

Organizer (with M.A. Lang) & Host . Smithsonian Marine Science Network Workshop. Smithsonian Environmental Research Center. (1998)

Board of Trustees, Chesapeake Environmental Protection Association (1998-2005).

Panel Member, NOAA Underseas Research Center, North Atlantic and Great Lakes, University of Connecticut (1999).

Faculty Opponent, Ph.D. Dissertation Defense, Kristeneborg Marine Research Station, University of Goteborg, Sweden (1999).

Organizing Committee. Blue Crab Ecology Workshop. University of North Carolina at Wilmington. (2000); editorial committee for publication of session papers.

Host and Co-Organizer. Atlantic Estuarine Research Society Meeting. Smithsonian Environmental Research Center (Fall, 2000).

Participant. Workshop for Marine Stations and Museums. Census of Marine Life. Crete, Greece. (2000).

Organizer, Symposium Session, "Estuary in Transition: the Indian River Lagoon", Estuarine Research Federation, St. Pete Beach, FL (2001).

Invited Participant, Symposium Session, "Scaling Relations in Estuarine Ecosystems, Estuarine Research Federation, St. Pete Beach, FL (2001).

Member, Bi-state Blue Crab Technical Work Group. (2001-present).

Member, Technical Committee, Blue Crab Advanced Research Consortium. (2001-present).

Co Organizer, Workshop, "Biological Diversity and Ecosystem Integrity of the Indian River Lagoon", BioInformatics group, Cocoa Beach, FL (2002).

Advisory Panel, Blue Crab Management Plan, Atlantic States Marine Fisheries Program, NMF, Annapolis, MD (2003).

Advisory and Review Panel. Puerto Rico LSAMP (Louis Stokes Alliance for Minority Participation). University of Puerto Rico, San Juan, PR (2004, 2006).

Invited Participant and Speaker, Beijing International Symposium on Biological Invasions. Species Exchanges between Eastern Asia and North America, Their Threats to Environment and Economy. Chinese Academy of Sciences, Beijing, China (2004).

Co Organizer, Workshop, "Coastal Ecosystems of Indian River Lagoon/ Cape Canaveral Region: Collaborative Research Priorities", Kennedy Space Center, FL (2005).

Invited Participant, Workshop "Predicting Effects of Overfishing, Eutrophication and Disease on Estuarine Fish Assemblages: Disentangling Effects of Multiple Stressors on Estuarine Food Webs", Smithsonian Environmental Research Center (2005).

Invited Participant, Symposium "Fishery Impacts on Crustacean Mating Systems", 6th International Crustacean Congress, Glasgow, Scotland (2005).

Invited Participant, Workshop "Spatial Management", Science & Technology Advisory Committee, EPA Chesapeake Bay Program, Annapolis, MD (2006).

Invited Participant, Workshop "Alaska Crab Enhancement and Rehabilitation", Alaska Sea Grant, Kodiak, AK (2006).

Member and Secretary, Board of Directors, Chesapeake Research Consortium (2005-present).

Member, Ecosystem-based Management Committee for Blue Crab, Maryland & Virginia (2009).

Invited Symposium Speaker, The Crustacean Society, Tokyo Fisheries University, Japan (2009).

Organizing Committee Member, International Symposium on Biology, Aquaculture and Management of Commercially Important Crabs. Shanghia Ocean University, China (2009).

Organizer and Host, Benthic Ecology Working Group, International Council for Exploration of the Sea, Smithsonian Environmental Research Center, Edgewater, MD (2010).

Student Sponsorship: (1980-present)

Sponsor for 110+ Undergraduate Work/Learn and Minority Interns and Summer Assistants.

Sponsor for 34 Graduate Fellows.

Sponsor for 21 Post-Doctoral Fellows (James Douglass, Sarah Burke, Chris Long, Antonio Baeza, Eric G. Johnson, Catherine deRivera, Mark Torchin, Jana L.D. Davis, Renae Brodie, Rochelle D. Seitz, Mark L. Kuhlmann, Paul R. Jivoff, Paul J. Bushmann, Junda Lin, William B. Jaeckle, L. David Smith, Joseph F. Dineen Jr., Ana I. Dittel, Martin H. Posey, James J. Stretch, Romuald N. Lipcius).

Dissertation Committee Member, 18 Doctoral and Masters' students from: University of Maryland at College Park; University of Maryland Eastern Shore; University of Maryland Biotechnology Institute, Center of Marine Biotechnology, Baltimore; North Carolina State University; Virginia Institute of Marine Sciences, College of William & Mary; University of Connecticut.

Graduate Student Co-Advisor:
Department of Zoology/Biology and Department of Marine, Estuarine & Environmental Sciences, University of Maryland at College Park:

- 8 Ph.D. students (L. David Smith, Fernando Alvarez, Paul Jivoff, Jeffrey Terwin, Kelton Clark, Elizabeth Jewett, Paula Rodgers, Safra Altman)
- 3 M.S. students (Patricia Haddon, John Tschirky, Keith Ruffin);

Department of Marine, Earth and Atmospheric Sciences, North Carolina State University at Raleigh:

- 2 Ph.D. students (Michael Shirley, Mary Clark);
- 5 M.S. student (Laura Nye, Matt Kendall, Heather Turner, Wynne Bost, Adina Motz).

Virginia Institute of Marine Science, College of William and Mary, Gloucester Point:

- 1 M.S. student (Kristen Delano)

Dissertations:

Nye, Laura A. 1989. Variation in feeding behavior of blue crabs (*Callinectes sapidus* Rathbun) measured by ultrasonic biotelemetry. M.S. Dissertation, Department of Marine, Earth & Atmospheric Sciences, North Carolina State University, Raleigh, 82 p. Co-advised with Thomas G. Wolcott.

Smith, L. David 1990. The frequency and ecological consequences of limb autotomy in the blue crab, *Callinectes sapidus* Rathbun. Ph.D. Dissertation, Department of Zoology, University of Maryland, College Park, 259 p. Co-advised with Gerrat Vermeij.

Shirley, Michael A. 1990. Adaptive significance of microhabitat selection by molting and mating blue crabs, *Callinectes sapidus* Rathbun. Ph.D. Dissertation, Department of Marine, Earth & Atmospheric Sciences, North Carolina State University, Raleigh, 113 p. Co-advised with Thomas G. Wolcott.

Alvarez, Fernando. 1993. Host-parasite interactions of the rhizocephalan barnacle *Loxothylacus panopae*i infecting xanthid crabs along the east coast of North America. Ph.D. Dissertation, Department of Zoology, University of Maryland, College Park, 193p. Co-advised with Marjorie Reaka.

Tschirky, John J. 1993. Genetic differentiation, gene flow and dispersal potential in the West Indian spiny spider crab, *Mithrax spinosissimus*. M.S. Dissertation, Department of Zoology, University of Maryland, College Park, 67 p. Co-advised with Marjorie Reaka and Michael Braun.

Jivoff, Paul R. 1995. Sexual selection, mate guarding and individual reproductive success in the blue crab, *Callinectes sapidus*. Ph.D. Dissertation, Department of Zoology, University of Maryland, College Park, 141 p. Co-advised with Gerald Borgia.

Ruffin, K. Keith. 1995. Effects of hydraulic clam dredging on water quality in the nearshore environment of Chesapeake Bay. M.Sc. Dissertation, Program in Marine, Estuarine, and Environmental Science, University of Maryland, College Park. 81 p. Co-advised with Lawrence Sanford & Karin Prestigard.

Clark, Mary. 1997. Density-dependent agonism and foraging success in blue crabs (*Callinectes sapidus* Rathbun). Ph.D. Dissertation, Department of Marine, Earth and Atmospheric Sciences, North Carolina State University, Raleigh. 145 p. Co-advised with Thomas G. Wolcott.

Kendall, Matthew 1998. Male mating success in the blue crab *Callinectes sapidus*. M.S. Dissertation. Department of Marine, Earth and Atmospheric Sciences, North Carolina State University, Raleigh. Co-advised with Thomas G. Wolcott and Donna L. Wolcott.

Hill, Kathy 1998. Daily settlement patterns of the blue crab, *Callinectes sapidus*, and other brachyuran crabs into the Indian River Lagoon, Florida. M.Sc. Thesis, Florida Institute of Technology, 116 p. Advised by J. Lin.

Terwin, Jeffrey R. 1999. Blue crab, *Callinectes sapidus*, foraging behavior in Chesapeake Bay: The importance of intra-specific interactions and prey distribution. Ph.D Dissertation, Marine, Estuarine and Environmental Sciences, University of Maryland. Co-advised with Kenneth Tenore. 173 p.

Turner, Heather V.R. 2000. Behavior and growth in post-copulatory female blue crabs. M.S. thesis. Department of Marine, Earth and Atmospheric Sciences. North Carolina State University, Raleigh. 88 p. Co-advised with Thomas G. Wolcott and Donna L. Wolcott.

Clark, K.L. 2001. The response of prey to variability in predator guild composition and refuge habitat. Ph. D. Dissertation. Marine, Estuarine and Environmental Sciences. University of Maryland at College Park. 162 p. Co-advised with Kenneth Sebens.

Carver, Adina Motz, 2001. Selective fishing pressure on large male blue crabs negatively affects male size, sex ratio, and population reproductive potential in the upper Chesapeake Bay. M.S. Thesis. Department of Marine, Earth and Atmospheric Sciences, North Carolina State University, Raleigh. 38 p. Co-advised with Thomas G. Wolcott and Donna L. Wolcott.

Hopkins, Wynne C. Bost. 2002. Number and viability of stored sperm in the female blue crab, Callinectes sapidus. M.S. thesis. Department of Marine, Earth & Atmospheric Sciences. North Carolina State University, Raleigh. 47 p. Co-advised with Donna L. Wolcott and Thomas G. Wolcott.

Delano, Kristen (2004). Variation in reproductive output of the Baltic clam, Macoma balthica in shallow systems of the Chesapeake Bay: Habitat type and spatial scale. M.S Thesis, Virginia Institute of Marine Science, College of William and Mary, Gloucester Point. 236 p. Co-advised with Romuald N. Lipcius.

Jewett, Elizabeth B. (2005). Ecology of invasive estuarine species: fouling community responses to estuarine anoxia. Ph.D. Dissertation. Department of Biology, University of Maryland, College Park. 211 p. Co-advised with Kenneth Sebens.

Rodgers, Paula (2010). Recruitment strategy of blue crabs. Ph.D. Dissertation, Department of Biology, University of Maryland College Park. Co-advised with Marjorie Reaka.

Altman, Safra (anticipated 2010). Effects of genotype variation on colony success of three invasive species of tunicates. Ph.D. Dissertation, Program in Behavior, Ecology, Evolution and Systematics,, University of Maryland College Park, Co-advised with Marjorie Reaka.

Management Responsibilities:
General Duties: Director for SERC as a Research Unit of the Smithsonian Institution, with primary responsibilities for all programs in environmental research, professional training and public education. The annual budget is approximately $10,500,000 composed of 31% federal and 69% nonfederal funds, plus approximately $1,500,000 for maintenance and security operations that are administered by the central Smithsonian. SERC's staff is composed of about 200 people in summers and 110 people in winters, with approximately 32 federal employees, 80 non-federal employees, 70 participants in fellowship programs (Interns, Graduate Fellows, Post-doctoral Fellows, and Visiting Scientists), and 35 volunteers. We have "grown" the staff and physical plant, which have more than tripled in the past 16 yrs.
Major responsibilities include:

- lead all programs and administration, with fiduciary and financial management responsibilities for $10.5M annual expenditures including oversight of 80 grant accounts;
- coordination of research programs;
- oversight of professional training programs;
- fund raising, communications and public relations;
- planning and coordination of facilities, development of long-range master plan and 5 yr programs for 2,650 acre site with complex array of buildings, dock, boats, vehicles, roads, waterfront, and utilities; includes leadership for planning, design and construction of: $780,000 Reed Education Center (4,000 sf) in 1999, $850,000 Wet Laboratory addition (2,000 sf) in 2005-06, $44.5 million Mathias Laboratory addition and renovation (85,000 sf) in 2009-2012, and ~$10 million in infrastructure in 2008-2010.
- land conservation strategy and acquisition for Rhode River watershed; personally managed acquisition of 681 acres (25.7%) of total 2,650 acres of SI/SERC-owned property.
- oversight of safety for unit;
- coordination of programs with security for unit;
- authorization and approval for purchasing, contracts, and personnel actions;
- ensure personnel actions are conducted in fair and timely manner in accordance;
- promote and develop cultural diversity in staffing and professional training.

Direct Supervisor for: Deputy Director; Executive Officer; Director of Public Education; Administrative Secretary; Fellowship Coordinator; Science Writer; Postdoctoral Research Scientist; and 6 Biological Technicians.