Chesapeake Research Consortium, Incorporated

CRC

RESEARCHERS AND FACILITIES

THE SCIENTISTS, ENGINEERS, LAWYERS AND OTHERS IN THE INSTITUTIONS OF THE CHESAPEAKE RESEARCH CONSORTIUM INTERESTED IN RESEARCH RELATED TO THE CHESAPEAKE BAY

AND

BAY RESEARCH

JUNE 1980

CRC PUBLICATION NO. 91

CRC

The Johns Hopkins University
University of Maryland
Smithsonian Institution
Virginia Institute of Marine Science

C R C

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SPECIAL FACILITIES OF THOSE INSTITUTIONS FOR
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INTRODUCTION

Consorts should know each other. To that end, we asked the heads of various groups in the CRC institutions to provide the names, addresses, interest areas and not more than five recent publications for each person interested in Bay research. We also requested information on unusual or especially useful facilities.

The results have some limitations - players move, publication continues, writers can't spell, style varies and we have had three secretaries on this - but the composite is quite impressive and, we believe, useful to those who might wish to join forces in research. Preferably through CRC.

This is a document for our use. Please do not distribute it.

Feasible suggestions for future editions will, of course be appreciated.

L. Eugene Cronin
Director

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INSTITUTIONS, COMPONENTS AND PERSONS

CHESAPEAKE RESEARCH CONSORTIUM

Annapolis, Maryland

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THE JOHNS HOPKINS UNIVERSITY

Applied Physics Laboratory

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THE JOHNS HOPKINS UNIVERSITY (continued)

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School of Hygiene and Public Health
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UNIVERSITY OF MARYLAND

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UNIVERSITY OF MARYLAND (continued)

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University of Maryland Baltimore County Campus
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VIRGINIA INSTITUTE OF MARINE SCIENCE

Andrews, Jay D.
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VIRGINIA INSTITUTE OF MARINE SCIENCE (continued)

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Wass, Marvin L.
Webb, Kenneth L.
Welch, Christopher S.
Wetzel, Richard Lee
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Zubkoff, Paul L.
Zwermer, David E.

1. AGGOUR, D.M.
Civil Engineering Department
University of Maryland
College Park, Maryland 20742
(301) 454-2216

Areas of research interest: soil mechanics and foundation designs, characteristics of dredged materials, soil dynamics, dynamic earth pressure, timber piling, buried piping, numerical analysis.

Recent relevant publications:

Resonance of Retaining Walls. Engineering Structures, Vol. I, October 1978, pp. 3-7.

Dynamic Earth Pressures in Nuclear Power Plants. Journal of the Egyptian Society of Engineers, Vol. XVIII, No. 2, 1979, pp. 41-52.

Analytical Determination of Earth Pressure Due to Compaction. Proceedings, 3rd International Conference on Numerical Methods in Geomechanics, Aachen, West Germany, 1979, pp. 1167-1174.

Elastic Determination of Dynamic Earth Pressure. Journal of Civil Engineering Design, Vol. 1, No. 2, 1979, pp. 145-160.

2. ALLAN, J. DAVID
Department of Zoology
University of Maryland
College Park, Maryland 20742
(301) 454-5410

Areas of research interest: aquatic ecology, population dynamics and feeding ecology of zooplankton, effects of chronic toxicity.

Recent relevant publications:

Abundances and production of copepods in the Rhode River subestuary of Chesapeake Bay. Ches. Sci. 17:86-92 (1976).

Grazing in juvenile stages of some estuarine calanoid copepods. Mar. Biol. 43:317-331 (1977).

3. ANDREWS, JAY D.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: shellfish biology

ANDREWS, JAY D. (continued)

Recent relevant publications:

Epizootiology of Minchinia costalis in susceptible oysters in Eastside Bays of Virginia's Eastern Shore, 1959-1976. J. Invert. Pathology 32:124-138. 1978. (with Michael Castagna).

Oyster diseases of Chesapeake Bay. Marine Fisheries Review 45(1&2):45-53.

Reproduction in oysters. Chapt. 5 of Vol. 5 of Reproduction in oysters, ed. by Giese and Pearse, Academic Press, Inc. 1979.

Scenario for introduction of Crassostrea gigas along the Atlantic Coast of North America. Woods Hole Symposium, Sept. 1978. In press.

Russian roulette with oysters. Consequences of exotic introduction and required steps for planning new importations. Manuscript ready to be submitted to Marine Fisheries Review.

4. AUSTIN, HERBERT MARTIN
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: fisheries science, fisheries management

Recent relevant publications:

Predicting abundance of striped bass, Morone saxatilis, in New York waters from modal lengths. Fish. Bull. 77(1), pp. 467-473. 1978. (with C. Hickey).

Use of environmental data in the prediction of Marine Fisheries Abundance. Proc. Workshop on Climate and Fisheries, COMS/URI. pp. 93-108. 1979. (with M. Ingham).

Natural environmental variability and its effects on fishery fluctuations. NOAA Tech. Papers, in press. 1979.

Impacts of human activities on bight fish, shellfish, and food chains, Section F, 96 pp. Ongoing and Long-term Impacts of Ecosystem Change, Chap. 4 in New York Bight Synthesis, MESA/NOAA, in press. 1979.

Movement of the 1970 year class striped bass between Virginia, New York and New England. Proc. 32nd Annual S.E. Division Meeting American Fisheries Society, Homestead, Florida (1978). 1979. (with W. H. Kriete and John Merriner). In press.

5. AXLEY, JOHN HAROLD
Department of Agronomy
University of Maryland
College Park, Maryland 20742
(301) 454-3721

Areas of research interest: soil chemistry

Recent relevant publications:

Major nutrients and their critical concentration affecting Zn absorption by Barley. V. Pavanasasivam and J.H. Axley. American Society of Agronomy Abstracts. pp. 178. 1979.

Effect of some soil parameters and physical properties of urea granules on ammonia loss. F.A. Abbruscato and J.H. Axley. American Society of Agronomy Abstracts. pp. 220. 1979.

Influence of sulfate on the availability of Zn from flooded and unflooded soils. V. Pavanasasivam and J.H. Axley. Northeastern Branch American Society of Agronomy Abstracts. pp. 24. 1979.

Larsen V. and J.H. Axley. Nitrogen removal from sewage waters by plants and soil. Proceedings of the International Symposium on Livestock Wastes. Amer. Soc. of Agri. Eng. pp. 338-340. 1971.

Woolson, E.A. and J.H. Axley and P.C. Kearney. The chemistry and phytotoxicity of arsenic in soils. II. Effects of time and phosphorous. Soil Sci. Amer. Proc. 37:254-259. 1973.

6. AYARS, JAMES E.
Agricultural Engineering Department
University of Maryland
College Park, Maryland 20742
(301) 454-3901

Areas of research interest: groundwater hydrology, non-point source pollution, irrigation, drainage, watershed hydrology.

Recent relevant publications:

Nonpoint pollution from agricultural watersheds. Paper 79-2007. Presented at Summer ASAE Meeting, Winnipeg, June 1979. (with G. McClurg and D.C. Wolf).

Development of a finite element watershed simulation model with a subsurface flow component. Accepted for Hydrologic Transport Modeling Symposium. December 1979. (with M. Yaramanoglu).

Instrumentation for surface runoff studies. Maryland Agricultural Experiment Station Misc. Pub. 942. 32 p. 1979. (with G.T. Fisher, N.T. Martin, G.L. Conner and R.D. Dixon).

AYARS, JAMES E. (continued)

Modeling sediment transport using USDAHL-74. Paper 79-2066. Presented at Summer ASAE Meeting, Winnipeg. June 1979. (with G.K. Felton, M. Yaramanoglu and H.N. Holtan).

Projecting hydrologic impact of a land use plan using USDAHL-74. Proceedings ASCE Specialty Conferences, Blacksburg, Virginia. 1978. (with G.T. Fisher and G.K. Felton).

7. BANG, FREDERIK B.

Department of Pathobiology
The Johns Hopkins University
School of Hygiene and Public Health
615 North Wolfe Street
Baltimore, Maryland 21205
(301) 955-3459 or 955-3457

Areas of research interest: comparative pathology of marine invertebrates; development of invertebrate animal models for the detection of diseases; relationships of ecology and public health; water-borne diseases.

Recent relevant publications:

Monitoring pathological changes as they occur in estuaries and ocean in order to measure pollution (with special reference to invertebrates). Proc. ICES Workshop on the Problems of Monitoring Biological Effects of Pollution in the Sea, Beaufort, North Carolina, 26 February to 2 March, 1979. (in press).

Ecology: the biological counterpart of public health. Perspectives in Biology and Medicine. 1979. (in press).

Ontogeny and phylogeny of response to gram-negative endotoxins among the marine invertebrates. In: Biomedical Applications of the Horseshoe Crab (Limulidae), pp. 109-123. Eds: E. Cohen, F.B. Bang, J. Levin, J.H. Marchalonis, T.G. Pistole, R.A. Prendergast, C. Shuster, Jr., and S.W. Watson. (Vol. 29 of Prog. Clin. Biol. Res.) Alan R. Liss, Inc., New York, 688 pp. 1979.

Immune mechanism and disease response in a virus disease of Carcinus. In: Viruses and Environment, pp. 515-525. Eds: E. Kurstak, K. Maramorosch. Academic Press, New York. (with K.L. Hoover). 1978.

Comparative pathology of marine invertebrates and the study of human disease. J. Pediatr. 87:1062-1066. 1975.

8. BARNARD, THOMAS A., JR.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: wetlands, pesticides, pollution biology

Recent relevant publications:

The role of an anadromous fish, the alewife, Alosa pseudoharengus (Wilson), in pesticide transport. Unpublished masters thesis. VIMS, Gloucester Point, Virginia 23062. 1971.

Guidelines for activities affecting Virginia wetlands, coastal wetlands of Virginia, interim report no. 3. Special Report No. 46 in Applied Marine Science and Ocean Engineering, VIMS, Gloucester Point, VA (with G.M. Silberhorn, G.M. Dawes).

Virginia and the outer continental shelf: problems, possibilities and posture. A Report of the Outer Continental Shelf Advisory Committee. John Pleasants, ed., VIMS, Lead Agency, 1974.

City of Hampton Tidal Marsh Inventory. Special Report No. 60 in Applied Marine Science and Ocean Engineering, VIMS. 1975.

City of Virginia Beach Marsh Inventory, Vol. 2. Special Report No. 118 in Applied Marine Science and Ocean Engineering. VIMS. 1978. In press.

9. BASS, EUGENE
Department of Natural Sciences
University of Maryland, Eastern Shore
Princess Anne, Maryland 21853
(301) 651-2200, ext 318

Areas of research interest: physiological ecology, effects of environmental variables on physiology of Chesapeake Bay fauna.

Recent relevant publication:

Influences of temperature and salinity on oxygen consumption of tissues in the American oyster. (Crassostra virginica).

10. BENDER, MICHAEL E.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: pollution biology, ecology

BENDER, MICHAEL E. (continued)

Recent relevant publications:

Kepone residues in Chesapeake Bay biota. In Kepone Seminar II. U.S. EPA Region III, Philadelphia, Pa. 1977. (with R.J. Huggett and W.J. Hargis).

Where has all the oil gone? CONOCO-77, Vol. 8, No. 1. 1977.

Downstream effects on use of the estuary. In: The Potomac Estuary: A Potential water supply. Interstate Comm. on the Potomac River. 1978.

An independent appraisal of the offshore ecology investigation. Offshore Technology Conference. Houston, Texas, April 1979 (in press). (with J.S. Sharp, D.J. Reish, S.G. Appan and C.H. Ward).

Ecological monitoring and its application to offshore drilling and production. Proceedings, 10th World Petroleum Congress. Bucharest, Romania, Sept. 1979 (in press), (with J.M. Sharp, D.J. Reish, S.G. Appan and C.H. Ward).

11. BIERI, RUDOLF H.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: organic pollution, organic geochemistry, analytical facilities, large scale seminatural spill experiments, triterpenoid & steroid compounds in sediments, biodegradative reaction paths of hydrocarbons, analysis of toxic organic compounds.

Recent relevant publications:

Helium flux through marine sediments of the northeast pacific ocean. Earth Planet. Science Letters, 28, 331 (1975) (with R.O. Barnes).

The fate of petroleum hydrocarbons from a no. 2 oil spill in a seminatural estuarine environment. Symposium on Fate and Effect of Hydrocarbons in the marine environment, Seattle, Wash., Pergamon Press, New York, 1977. (with Vassilios Stamoudis).

Polynuclear aromatic and polycyclic aliphatic hydrocarbons in sediments from the Atlantic outer continental shelf. International Journal Envir. Anal. Chem. 5, 293-310 (1978). (with M.K. Cueman, C.L. Smith and C.W. Su).

Chemical investigations of two experimental oil spills in an estuarine ecosystem, part II, 1979 Oil Spill Conference, Los Angeles, published by A.P.I., (no. 4308). (with V. Stamoudis and M.K. Cueman).

12. BIRKNER, FRANCIS B.
Department of Civil Engineering
University of Maryland
College Park, Maryland 20742
(301) 454-3109

Areas of research interest: transport of heavy metals in estuarine waters.

Recent relevant publications:

Kinetics of the oxygenation of reduced sulfur species in aqueous solution Env. Sci & Tech., II, 1114, 1977.

Transport of cadmium in estuarine waters. (in preparation)

Transport of copper in estuarine waters. (in preparation.

13. BLINDER, CALVIN L.
The Johns Hopkins University
Applied Physics Laboratory
Johns Hopkins Road
Laurel, Maryland 20810
(301) 792-7800 ext. 3701

Areas of research interest: economic/fiscal impact of power plants and the effect of transmission lines on residential property values.

Recent relevant publication:

The effect of high voltage overhead transmission lines on residential property values. Proceedings of the Second National Symposium on Environmental Concerns in Rights-of-Way Management, to be published in 1980.

14. BOESCH, DONALD F.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: marine ecology; systematics and evolution of crustacea and polychaeta; mathematical ecology, numerical analyses of populations and communities; estuaries, ecology and evolution of estuarine organisms; continental shelves, oceanography and biology; sedimentology, effects of organisms on sediment dynamics and sediment geochemistry; marine and estuarine pollution; coastal zone management, waste disposal and resource extraction.

Recent relevant publications:

Phoronida from Australia. Rec. Austral. Mus. 30:1-17. 1976. (with C.C. Emig and S. Ranier).

BOESCH, DONALD F. (continued)

A new look at the distribution of benthos along the estuarine gradient, p. 245-266. In B.C. Coull (ed.) Ecology of the Marine Benthos. Univ. of South Carolina Press. 1977.

Application of numerical classification in ecological investigations of water pollution. U.S. EPA. Ecological Research Report Series. EPA-600/3-77-033. 115 p. 1977.

Comparative biogeography of benthic macrocrustaceans of the Middle Atlantic (U.S.) continental shelf. Bull. Biol. Soc. Wash. 3:214-255. 1979. (with M.A. Bowen, P.O. Smyth and J. van Montfrans.)

Distribution patterns of epibenthic decapod Crustacea along the shelf-slope coenocline. Bull. Biol. Soc. Wash. 3:106-133. 1979. (with E.L. Wenner).

15. BOICOURT, WILLIAM C.
Chesapeake Bay Institute
4800 Atwell Road
Shady Side, Maryland 20867
(301) 269-5373

Areas of research interest: Physical oceanography

Recent relevant publications:

CMICE 76: A current meter intercomparison experiment conducted off Long Island in February-March, 1976. To be submitted to Instruments and Methods section, Deep-Sea Research. 1980. (with R. C. Beardsley, L. C. Huff, J. R. McCullough and J. Scott).

Estuarine and continental shelf circulation in the Middle Atlantic Bight. Evolution of Physical Oceanography (C. Wunsch and B. A. Warrens, eds.). (In press). 1979. (with R. C. Beardsley).

Low frequency current variability on the Southern Mid-Atlantic Bight. Journ. of Phys. Oceanography 9(6):1144-1154. 1979. (with W. S. Chuang and D. P. Wang).

On the use of directional sensors for shallow water current measurements. (submitted). Deep Sea Res. 1979. (with P. W.Hacker).

Prograde and retrograde fronts in Oceanic Fronts in Coastal Processes. Springer-Verlag, New York. 1977. (with C. N. K. Mooers and C. Flagg).

16. BOLAND, JOHN J.

417 Ames Hall
Department of Geography and Environmental Engineering
The Johns Hopkins University
Baltimore, Maryland 21218
(301) 338-7103 or 338-7092

Areas of research interest: environmental economics and environmental engineering

Recent relevant publications:

Economic considerations in power plant siting: final report. Dept. of Geography and Environmental Engineering, The Johns Hopkins University, Baltimore, Maryland (1979; in press).

The role of water conservation in water supply planning. with D. Baumann, J. Sims, B. Kranzer, and P. Carver, Institute of Water Resources, U.S. Army Corps of Engineers, Fort Belvoir, Virginia, Contract Report 78-2, April 1979.

The requirement for urban water: a disaggregate analysis. Proceedings, 1979 Annual Meeting, American Water Works Association, (1979, in press).

Financing water services in metropolitan Washington. Proceedings, Thames-Potomac Seminar II, London, (1979, forthcoming).

Urban-specific problems in resources management. presented at First Polish-American Seminar on Spatial Problems in the Development of Metropolitan Regions, University of Pennsylvania, Philadelphia, Pa. 1979.

17. BONAR, DALE B.

Department of Zoology
University of Maryland
College Park, Maryland 20742
(301) 454-5450

Areas of research interest: developmental biology of marine invertebrates; morphological and biochemical transformations during the metamorphosis of marine molluscs; aging of larval tissues during prolonged delay of metamorphosis; larval sense organs and their potential involvement in reception of metamorphic stimuli.

BONAR, DALE B. (Continued)

Recent relevant publications:

Fine structure of muscle insertions on the larval shell and operculum of the nudibranch Phestilla sibogae before and during metamorphosis. Tissue and Cell 10:143-152. 1978.

Ultrastructure of a cephalic sensory organ in larvae of the gastropod Phestilla sibogae (aeolidacea, Nudibranchia). Tissue and Cell 10:153-166. 1978.

Morphogenesis at Metamorphosis in Opisthobranch Molluscs. In: Settlement and Metamorphosis of Marine Invertebrate Larvae. pp. 177-195. F.S. Chia and M. Rice, eds. Elsevier North Holland: N.Y. 1978.

Regeneration in sea urchin larvae. American Zoologist 18:581. 1978.

18. BOON, JOHN D., III
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: littoral processes, hydrodynamics of coastal inlets, tides and currents, beach erosion studies, marsh channel hydraulics, salt marsh and tidal flat sedimentary processes, transport of suspended sediments.

Recent relevant publications:

Optimized measurements of discharge and suspended sediment transport in a salt marsh drainage system. Symposium International, Relations Sedimentaires Entre Estuaries et Plateaux Continentaux, Bordeaux, France, pp. 67-73. 1974.

Vegetation and elevational relationships within coastal marsh transition zones, Central Atlantic Coastal Region. (in preparation) 1979. (with D.M.E. Ware and G.M. Silberhorn).

Tidal discharge asymmetry in a salt marsh drainage system. Limnol. and Oceanog., Vol. 20, No. 1, pp. 71-80. 1975.

Storm tide height-frequency analysis and model prediction for Chesapeake Bay. 1979. (in preparation, with C.S. Welch, R.J. Lukens, C.S. Fang and J.M. Zeigler).

Tidal harmonic signatures in basin and inlet systems: evidence of periodic mechanisms for net material exchange between coastal basin and inner shelf environments. Estuarine Research Federation, 5th Biennial International Conf., Jekyll Island, Ga. 1979. (in preparation, with R.J. Byrne).

19. BOSCO, CYNTHIA L.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: estuarine water assessment and management, role of sediments in estuarine dynamics, and nutrient balances as affected by physical and biological processes.

Recent relevant publications:

The ultrastructure of cell division in male reproductive structures of the marine red alga Polysiphonia denudata. Unpublished M.A. Thesis, College of William and Mary, Williamsburg, Va., June 1978.

The ultrastructure of cell division in several species of marine red algae. J. Phycology. (In press). (with J.L. Scott and K.L. Schornstein).

Nonpoint sources and impacts in a small coastal plain estuary: A case study of the Ware River Basin, Virginia. Presented at the Interstate Commission on the Potomac River Basin Technical Symposium, Gettysburg, Pa., June 11-13, 1980. (with G.F. Anderson).

The peregrine falcon -- recovery in the wings. Conservation News 43:12. 1978.

20. BOWEN, MARCIA A.
Virginia Institute of Marine Science
Gloucester Point, VA 23062
(804) 642-2111

Areas of research interest: benthic community ecology with a taxonomic expertise in crustaceans, specifically Peracarida and Ostracoda

Recent relevant publications:

Aquatic disposal field investigations, Eaton's Neck Disposal Site, Long Island Sound: Appendix C. Predisposal baseline conditions of benthic assemblages. Dredged Material Research Program Tech. Report D-77-6. 56 pp. 1977 (with D.K. Serafy and D.J. Hartzband).

Comparative biogeography of benthic macrocrustaceans of the Middle Atlantic (U.S.) Continental Shelf. Bull. Biol. Soc. Wash. 3:214-255. 1979. (with P.O. Smith, D.F. Boesch and J. van Montfrans).

BOWEN, MARCIA A. (Continued)

The Macrobenthos of the New York Bight: Broadscale Patterns. In: D.F. Boesch (coordinator), The ecology of macrobenthos of the New York Bight. Draft. (with D.F. Boesch).

The macrobenthos of the New York Bight: Temporal patterns. Chapter 4 in D.F. Boesch (coordinator), The ecology of the macrobenthos of the New York Bight. (In preparation). (with D.F. Boesch, L.C. Schaffner and R.C. Swartz).

The macrobenthos of the New York Bight Apex: Effects of waste disposal. Chapter 5 in D.F. Boesch (coordinator), The ecology of the macrobenthos of the New York Bight. (In preparation). (with D.F. Boesch, L.C. Schaffner and Sandy Hook Laboratory authors).

21. BOYNTON, WALTER RAYMOND
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(301) 326-4281

Areas of research interest: systems ecology with emphasis on regional scale; nutrient cycling in estuarine systems; ichthyoplankton studies.

Recent relevant publications:

A research design for understanding and managing complex environmental resources systems. Pages 169-77 in R.R. Johnson and J.F. McCormick, Tech. Coordinators, Strategies for protection and management of floodplain wetlands and other riparian ecosystems. U.S. Dept. Agr., Forest Serv. Gen. Tech. Rpt. WO-12. Washington, D.C. 1979. (with W.M. Kemp and J.C. Stevenson).

Benthic nutrient fluxes in the sediment trap portion of the Patuxent Estuary. In: V. Kennedy, ed., Proceedings Estuarine Research Federation Conference. 1979. (with W.M. Kemp and C.G. Osborne).

Synopsis of biological data on striped bass, Morone saxatilis (Walbaum). Dept. Comm., NOAA, NMFS, FAO Fish. Synopsis. 1979 in press (with E.M. Setzler, K.V. Wood, H.H. Zion, L. Lubbers, N.K. Mountford, P. Frere, L. Tucker and J.A. Mihursky.

Microcosms, macrophytes and hierarchies: environmental research in Chesapeake Bay. In: J. Giegy, ed., Microcosms research in ecology. ERDA Conf. Ser., NTIS, Springfield, Va. (in press) 1979. (with W.M. Kemp, M. Lewis, J.J. Cunningham, and J.C. Stevenson.

Major features of ichtoplankton populations in the upper Potomac Estuary, 1974-1976. In: K. Sherman and R. Lasker, eds., Early life history of fish symposium, Vol. II (in press). 1979. (with E.M. Setzler, J.A. Mihursky, K.V. Wood, T.T. Polgar and G.E. Drewry.

22. BRADLEY, BRIAN P.
Department of Biological Sciences
University of Maryland Baltimore County
Catonsville, Maryland 21228
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Areas of research interest: thermal ecology and genetics of zooplankton, genetics of growth and survival in oysters .

Recent relevant publications:

Measurement of temperature tolerance: verification of an index. Limnol. and Oceanography 21:596-599. 1976.

Estimating the diet of a sluggish predator from field observations. J. Fish. Res. Bd. Can. 35:136-141. 1978.

Genetic and physiological adaptation of the copepod Eurytemora affinis to seasonal temperatures. Genetics 90:193-205. 1978.

The increase in range of temperature tolerance following acclimation in the copepod Eurytemora affinis. Biol. Bull. 154:177-187. 1978.

Genetic and physiological flexibility of a calanoid copepod in thermal stress. In Energy and Environmental Stress in Aquatic Systems, Dept. of Energy (CONF-771114). 1979.

23. BRUSH, GRACE S.
Department of Geography and Environmental Engineering
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Areas of research interest: forest ecology, biostratigraphy

Recent relevant publications:

The Natural Forests of Maryland, an explanation of the Vegetarian Map of Maryland. Ecological Monographs, Vol. 50, No. 1. 1980. (in press)

Spatial distributions of pollen in surface sediments of the Potomac River: accepted for publication, Limnology and Oceanography.

24. BRUSH, LUCIEN M., JR.
Department of Geography and Environmental Engineering
606 Ames Hall
The Johns Hopkins University
Baltimore, Maryland 21218
(301) 338-7114

Areas of research interest: hydraulics, hydrology, sedimentation

BRUSH, LUCIEN M., JR. (continued)

Recent relevant publications:

Chapter IV in An Environmental Study of the Chesapeake Bay Village Development, Carter, H.H., ed., Chesapeake Bay Institute, O.F.R., Report No. 8. 1977.

Turbulent entrainment across stable density step structures. Tellus, v. 27, no. 3, pp. 259-268. 1975. (with E.J. Wolanski).

Inventory of sewage treatment plants for Chesapeake Bay. CRC Pub. No. 28, 62 pp., 1974.

25. BURNETT, JOSEPH W.
University of Maryland Hospital
Division of Dermatology
22 South Greene Street
Baltimore, Maryland 21201
(301) 528-5766

Areas of research interest: toxicological investigation of venomous marine animals.

Recent relevant publications:

Catfish (Ictalurus catus) Fin Venom. Toxicon 13:399-403, 1975. (with G.J. Calton).

Some chemical and pharmacological studies on two venomous jellyfish. Toxicon 13:88, 1975. (with G.J. Calton).

A comparison of the toxicology of the nematocyst venom from sea nettle fishing and mesenteric tentacles. Toxicon 14:109-115, 1976 (with G.J. Calton).

Some chemical and pharmacological studies on two venomous jellyfish in Animal, Plant and Microbial Toxins, Vol. 2, Chemistry, Pharmacology and Immunology. Eds. Ohsaka, A.; Hayashi, K. and Sawai, Y. pp. 337-350. Plenum Press, New York, 1976. (with G.J. Calton).

The chemistry and toxicology of some venomous pelagic coelenterates. Toxicon 15:177-196, 1977. (with G.J. Calton).

26. BURRESON, EUGENE MICHAEL
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: marine symbiosis, particularly ecology of marine fish parasites.

BURRESON, EUGENE MICHAEL (continued)

Recent relevant publications:

Two new species of Malmiana (Hirudinea: Piscicolidae) parasitic on the cabezon, Scorpaenichthys marmoratus (Ayres), in Oregon. J. Parasitol. 62:793-798. 1977.

Two new marine leeches (Hirudinea: Piscicolidae) from the west coast of the United States. Inst. Biol. Publ. Espec. 4:503-512. (invited paper) 1977.

A new marine leech Austrobdella claiforniana n. sp. (Hirudinea: Piscicolidae) from southern California flatfishes. Trans. Amer. Micros. Soc. 96:263-267. 1977.

Oceanobdella pallida n. sp. (Hirudinea: Piscicolidae) from English sole, Paraphrys vetulus, in Oregon. Trans. Amer. Micros. Soc. 96:526-530. 1977.

Morphology and biology of Mysidobdella borealis (Hirudinea: Piscicolidae) from mysids in the western North Atlantic. J. Parasitol. (in press). 1978. (with D.M. Allen).

27. BYRNE, ROBERT J.
Virginia Institute of Marine Science
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(804) 642-2111

Areas of research interest: coastal processes and continental shelf sedimentation; coastal zone planning and management.

Recent relevant publications:

Speculative hypothesis on the evolution of Barrier Island-inlet-lagoon systems: Joint NE-SE Geological Society of America Meeting, Vol. 8, No. 2, p. 159 (abstracts). 1976. (with J.D. Boon).

Measurement of bed friction in tidal inlets: Proc. 15th Coastal Engineering Conf., Honolulu, published by ASCE, p. 1701-1721. 1976. (with A.J. Mehta and J.T. DeAlteris).

Delineation of a wave climate for use in coastal engineering: Virginia Beach, Virginia (Abstracts). Southeast Geological Soc. of Amer. Annual Meeting, Raleigh, N.C., 1977. (with A.L. Gutman and V. Goldsmith).

Shore erosion in tidewater Virginia: VIMS SRAMSOE No. 111, 102 p. 1977 (with G.L. Anderson).

Field study of breaking wave characteristics: Proc. 16th Coastal Engineering Conf., Hamburg, published by ASCE (in press). 1978. (with L.L. Weishar).

28. CAMPBELL, DAVID G.
Department of Pathobiology
JHU School of Hygiene and Public Health
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Areas of research interest: ecology and parasitology of crabs

Recent relevant publications:

The Ephemeral Islands: a Natural History of the Bahamas, Macmillan, London. 164 pp. (in press) 1978.

A Teachers Guide for Conservation, (ed.), The Bahamas National Trust, Nassau. 48 pp. 1975. (second edition, 1977)

Bahamian Bleach Fishing: a Survey, Proc. Third Int'l Coral Reef Symposium, Miami. pp. 593-597. 1977.

The Bahamas Endemics: Our Special Trust, The Bahamas Handbook, Etienne Dupuch, Jr. Publications, Nassau. 1977.

The Menace of Bleach Fishing, The Bahamas Naturalist Vol. 2, No. 1, pp. 31-35. 1976.

29. CARGO, DAVID GARRETT
Chesapeake Biological Laboratory
University of Maryland
P.O. Box 38
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(301) 326-4288

Areas of research interest: sea nettle research, benthic invertebrates

Recent relevant publications:

Sea Nettles. Pages 121-123 in A.M. Anderson, coordinator. Effects of hurricane AGNES on the environment and organisms of Chesapeake Bay -- early findings and recommendations. A report for the U.S. Army Corps of Engineers, Philadelphia District from the Chesapeake Bay Research Council. 1973.

Field tests of a bubble screen sea nettle barrier. Mar. Tech. Soc. J. 8:33-39. 1973. (with C. H. Marks).

Recent investigations on the nature and action of sea nettle toxins. Excerpta Med. Int. Congr. Ser. 289:768-769. 1974. (with J.W. Burnett and G.J. Calton).

CARGO, DAVID GARRETT (Continued)

Some effects of tropical storm AGNES on the sea nettle population in the Chesapeake Bay. Pages 417-424 in J. Davis and B. Laird, coordinators. The effects of tropical storm AGNES on the Chesapeake Bay Estuarine system. CRC Publ. 54. The Johns Hopkins University Press, Baltimore. 1977.

Feeding rates of the sea nettle Chrysaora quinquecirrha under laboratory conditions. Estuaries 1:58-61. 1978. (with H.C. Clifford).

30. CASTAGNA, MICHAEL
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: larval behavior, natural history of mollusks, mariculture.

Recent relevant publications:

The aggregate protection method of culturing the hard clam, Mercenaria mercenaria. 10th European Marine Biological Symposium, Ostend, Belgium. Sept. 17-23, 1975. (Abs.) 1976. (with J.N. Kraeuter).

Mercenaria culture using stone aggregate for predator protection. Proc. Nat. Shellf. Assoc. 67:1-6. 1977. (with J.N. Kraeuter).

An analysis of gravel, pens, crab traps and current baffles as protection for juvenile hard clams, Mercenaria mercenaria. Proc. of the 8th Annual Meeting of the World Mariculture Society. pp. 581-592. 1977. (with J.N. Kraeuter).

Need and use of low technology aquaculture. Report of the Conference on Marine Resources of the Coastal Plains States. Williamsburg, Va. Dec. 8-9, 1977. pp. 59-60. 1978.

Pen culture of clams (Mercenaria mercenaria) and scallops (Argopecten irradians). In press. (with J. Kraeuter).

31. CERCO, CARL F.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: water quality and hydrodynamics of coastal waters and estuaries, modeling of same.

Recent relevant publications:

CERCO, CARL F. (Continued)

Non-point source pollution studies in the Chincoteague Bay system. VIMS Spec. Sci. Rep. No 86, Va. Inst. of Mar. Sci., Gloucester Point, Va. 1978. (with C.S. Fang and A. Rosenbaum).

Red-tide water quality model of the Elizabeth River system. VIMS SRAMSOE No.215, Va. Inst. of Mar. Sci., Gloucester Point, Va. 1979. (with A.Y. Kuo).

Water quality in a small tidal creek. VIMS SRAMSOE, Va. Inst. of Mar. Sci., Gloucester Point, Va. 1979. (with A.Y. Kuo).

Nitrification in the tidal James River. Proceedings of International Symposium on Nutrient Enrichment in Estuaries, Williamsburg, Va., 1979. (In press).

32. CHAMBERLIN, CHARLES E.

Department of Geography and Environmental Engineering
The Johns Hopkins University
Baltimore, Maryland 21218
(301) 338-7109

Areas of research interest: bacterial indicators of fecal contamination, stream and impoundment water quality models, phytoplankton uptake and growth.

Recent relevant publications:

Wholesome and palatable drinking water: A background paper on water quality aspects of water supply. Prepared for U.S. A.I.D. 1979. (with J. Boland, A. Malik and H. Shipman).

A decay model for enteric bacteria in natural waters. in R. Mitchell (ed.) Water Pollution Microbiology, Vol. 2, Wiley & Sons, New York. 1978 (with R. Mitchell).

Coenobial cell number in Scenedesmus quadicata (chlorophyceae) as a function of growth rate in nitrate-limited chemostats J. Phycology, 15: 1979. (with J. Gavis and L. Lystad).

Final report: Jones Falls and Lock Raven Reservoir Watersheds, prepared for Regional Planning Council, Baltimore, Maryland. 1978. (with P. Amatayakul, R. Cox, R. DeFries, R. Delatour, W-S. Moy, D. Shobrys and J. Boland).

33. CHEN, HSUAN SHAN
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: wave hydrodynamics, coastal and marine hydrodynamics, harbor resonance in offshore or coastal harbor, wave forces, transport processes for water quality control and sediments, storm surge, computation in fluid mechanics, and ocean circulation.

Recent relevant publications:

A hybrid element method for diffraction of water waves by three-dimensional bodies. International Journal for Numerical Methods in Engineering, Vol. 12, 1978 (with D.K.P. Yue and C. C. Mei).

A storm surge model study, Vol. II. A finite element storm surge analysis and its application to a bay-ocean system. SRAMSOE No. 189, VIMS, June 1978.

A storm surge model study, Vol. I. Storm surge height-frequency analysis and model prediction for Chesapeake Bay. SRAMSOE No. 189, VIMS, June 1978. (with J.D. Boon, C.S. Welch, R.J. Lukens, C.S. Fang and J.M. Zeigler).

A mathematical model for water quality analysis. Proceedings 26 Annual Hydraulics Division Specialty Conference, August 1978.

A two-dimensional hydrodynamic and biogeochemical water quality model and its application to the lower James River. SRAMSOE No. 183, VIMS, March 1979. (with R.J. Lukens and C.S. Fang).

34. CHIU, HUNGDAH
University of Maryland School of Law
500 West Baltimore Street
Baltimore, Maryland 21201
(301) 528-7579

Areas of research interest: law of the sea

Recent relevant publications:

China and the question of territorial sea. 1 International Trade Law Journal, No. 1, pp. 29-77 (1975).

Chinese attitude toward continental shelf and its implication on delimiting seabed in southeast Asia. Occasional Papers/Reprints in Contemporary Asian Studies, No. 1 (1977) (32 pp).

China and the Law of the Sea (book in preparation).

35. CLARK, EUGENIE
Department of Zoology
University of Maryland
College Park, Maryland 20742
(301) 454-5197

Areas of research interest: taxonomic studies of gobioid fishes, genus Zonogobius, Red Sea fishes of the family Tripterygiidae.

Recent relevant publications:

The Red Sea flashlight fish. Nat. Geogr. (Nov.) 154(5):718-728.

Red Sea fishes of the family Tripterygiidae with descriptions of eight new species. Israel J. Zool. (accepted)

Toxic soles, Pardachirus marmoratus from the Red Sea and P. pavoninus from Japan with notes on other species. Environ. Biol. Fish. (accepted) (senior author with Anita George).

Distribution mobility and behavior of the Red Sea garden eel. Nat. Geogr. Res. Reports. (accepted).

36. COHON, JARED L.
Department of Geography and Environmental Engineering
The Johns Hopkins University
Baltimore, Maryland 21218
(301) 338-7094

Areas of research interest: environmental and energy policy analysis; power plant siting; systems analysis.

Recent relevant publications:

Application of a multi-objective facility location model to power plant siting in a six-state region of the U.S.. Computers and Operations Research, forthcoming (with C. ReVelle, T. Eagles, J. Current, R. Eberhart and R. Church).

Multiobjective screening models and water resource investment. Water Resources Research, Vol. 9, No. 4, August, 1973, pp. 826-836 (with D. Marks).

Multiobjective programming and planning, Academic Press, N.Y., 1978.

37. COLE, TIMOTHY J.
Horn Point Environmental Laboratories
UMCEES
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(301) 228-8200

Areas of research interest: population genetics and ecology of marine benthic organisms

Recent relevant publications:

Comparative dynamics of Cape Cod populations of a rocky intertidal prosobranch. (submitted)

Ecological genetics of allozymic polymorphises of the oyster drill Urosalpinx cinerea. (submitted)

Self-fertilization and the maintenance of genetic variations in the tropical shipworm Lyrodus pedicillatus. (submitted) (with R.D. Turner)

Inheritance of allozymic polymorphises of a rocky intertidal snail Urosalpinx cinerea. Heredity 41:399-402. 1978.

Preliminary ecological genetic comparisons between unperturbed and oil-impacted Urosalpinx cinerea population: Nobstra (Woods Hole) and Wild Harbor (West Falmouth, MA.) J. Fish Res. Bd. Canada. 35:624-629. 1978.

38. COLWELL, RITA R.
Microbiology Department
University of Maryland
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(301)454-5106

Areas of research interest: microbial ecology; environmental microbiology; microbial mobilization, concentration & transport of pollutants; computerized identification and classification of microorganisms.

COLWELL, RITA R. (continued)

Recent relevant publications:

Distribution and characterization of Kepone-resistant bacteria in the aquatic environment. Appl. and Environ. Microbiol. In press. 1979. (with S.A. Orndorff).

The role of plasmids in mercury transformation by bacteria isolated from the aquatic environment. Appl. and Environ. Microb. 38:478-485. 1979 (with B.H. Olson and T. Barkay).

Aerobic and facultatively anaerobic bacteria associated with the gut of Canada Geese (Branta canadensis) and whistling swans (Cygnus columbianus columbianus). Appl. and Environ. Microb. 38:258-266. 1979. (with J.M. Damare, D. Hussong and R.M. Weiner).

Ecology and taxonomy of bacteria attaching to wood surfaces in a tropical harbor. Can. J. Microbiol. 25:447-461. 1979. (with B. Austin, D.A. Allen, A. Zachary and M.R. Belas).

Bacteria and viruses -- indicators on unnatural environmental changes occurring in the nation's estuaries. Environment International 1:223-231.

39. COONEY, JOSEPH J.
Chesapeake Biological Laboratory
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Solomons, Maryland 20688
(301) 326-4281

Areas of research interest: microbial physiology and ecology, functions of carotenoid pigments in microbial systems, use of hydrocarbons by microorganisms, microbial transformation of chemicals in the environment.

Recent relevant publications:

Metabolism of alkanes and alkenes in regard to composition of cellular fatty acids in microorganisms. Pages 148-159 in S. Garattini, S. Paglialunga, and N.S. Scrimshaw, eds., Single-cell protein safety for animal and human feeding. Pergamon Press, New York.

Degradation of model recalcitrant hydrocarbons by microorganisms from freshwater ecosystems. Dev. Ind. Microbiol. 20:479-488. 1979. (with W.M. Griffin).

Physiological and cytological responses to hydrocarbons by the hydrocarbon-using fungus Cladosporium resinae. Bot. Mar. (in press) 1979. (with C. Siporin and R.A. Smucker).

40. CORLISS, JOHN O.
Department of Zoology
University of Maryland
College Park, Maryland 20742
(301) 343-3202

Areas of research interest: systematics, phylogeny, evolution, and ultrastructural studies of protozoa, especially species of ciliates; protozoa of Chesapeake Bay and selected tributaries; practice of nomenclatural taxonomy.

Recent relevant publications:

The ciliated protozoa: characterization, classification, and guide to the literature, 2nd ed. Pergamon Press, Oxford and New York. 455 p. 1979.

The impact of electron microscopy on ciliate systematics. 1979. Amer. Zool., 19:573-587.

A note on the occurrence of the ciliate Tetrahymena, potential biocontrol agent, in the blackfly vector of onchocerciasis from Ivory Coast. Trans. Amer. Micros. Soc., 98:587-591. (with D. Berl & M. Laird). 1979.

Annotated assignment of families and genera to the orders and classes currently comprising the Corlissian scheme of higher classification for the phylum Ciliophora. Trans. Amer. Micros. Soc., 96:104-140. 1977.

41. CORNELL, ELIZABETH A.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: animal behavior

Recent relevant publications:

Long-term pupillary responses of Rana pipiens -- complex frogs (in preparation for Vision Research) (with J.P. Hailman).

An ethogram for DeBrazza's guenon, Cercopithecus neglectus, and a comparison of behavioral profiles of DeBrazza's guenon, Syke's guenon and gibbon. M.S. Thesis, U. of R.I., 1977.

Teacher idea kit for exploring the world of water (in preparation for VIMS-Sea Grant Educational Series).

42. CORRELL, DAVID L.
Chesapeake Bay Center for Environmental Studies
P.O. Box 28
Edgewater, Maryland 21037
(301) 269-1412

Areas of research interest: photobiology, plant physiology, nutrient ecology

Recent relevant publications:

Watershed research in eastern North America, Vol. I and II (ed.) Smithsonian Press. 1977. 924 p.

The relationship between phytoplankton cell size and the rate of orthophosphate uptake: in situ observations of an estuarine population. Marine Biology 45:39-52. 1978. (with M.A. Faust).

Relationship of land use to water quality in the Chesapeake Bay region. pp. 177-188. In: Proc. PASA Conference on Application of Remote Sensing to the Chesapeake Bay Region, Aptil 1977. Cool-Font, W. Va.

Herbicides and submerged plants in Chesapeake Bay. pp. 858-877. In: Coastal Zone 78; Symp. Tech., Environ., Socioecon., Regul. Aspects of Coastal Zone Management. March 1978. San Francisco, Calif.

Estuarine Productivity. Bioscience 28, 646-650. 1978.

43. CORY, ROBERT L.
c/o Chesapeake Bay Center for Environmental Studies
P.O. Box 28
Edgewater, Maryland 21037
(301) 798-4424

Areas of research interest: estuarine ecology, open water metabolism, benthic fauna

Recent relevant publications:

Processes affecting the vertical distribution of trace components in the Chesapeake Bay. In: Marine Chemistry in the Coastal Environment. Thomas N. Church, ed. 710 p. 1975. (with R.L. Harris & G.R. Helz).

Estimates of open water metabolism in the Rhode and West River Estuaries, Maryland. In Proc. 10 Europ. Symp. on Marine Biology. Ostend, Belgium. September 1975. 680 p.

Mortalities caused by Tropical Storm Agnes to clams and oysters in the Rhode River area of Chesapeake Bay. In: The effects of Tropical Storm Agnes on the Chesapeake Estuarine System. CRC Publ. #54 Johns Hopkins Univ. Press, Baltimore, MD p. 478-487. 1976 (with J.M. Redding).

CORY, ROBERT L. (continued)

Water quality in Rhode River at Smithsonian Institution pier near Annapolis, Maryland, January 1974 through December 1975. U.S. Geological Survey, W.R.I. 77-20: 48 p.

Open water metabolism in the Rhode River Estuary, Maryland, 1971 through 1975. Coastal Zone 78. Proc. of Symp. Tech. Env., Socioeconomic and Regulatory Aspects of Coastal Zone Management. ASCE/San Francisco, CA pp. 567-580.

44. CRONIN, L. EUGENE
Chesapeake Research Consortium
1419 Forest Drive, Suite 207
Annapolis, Maryland 21403
(301) 263-0884

Areas of research interest: coordinated estuarine research, protection and enhancement of estuaries.

Recent relevant publications:

The condition of the Chesapeake Bay -- a consensus. Bi-State Conference on the Chesapeake Bay. CRC Publ. No. 61. 1977. (with M.G. Gross, M.P. Lynch and J.K. Sullivan).

Data importance in relation to Chesapeake Bay pollution. Sixth International CODATA Conference, Sicily, Italy. May 1978 (with M.P. Lynch and M.J. Karweit).

Aquaculture in the United States. National Academy of Sciences. 123 p. 1978. (with others of the Committee on Aquaculture, Board of Agriculture and Renewable Resources, National Research Council).

A biologist views Chesapeake Bay. Proc. 68th Conv. of Internat. Assoc. of Fish and Wildlife Agencies, pp. 7-12. 1978.

Bioassay of Baltimore Harbor Sediments. in: Estuaries, Vol. 2, No. 3, pp. 141-153, Sept. 1979. (with C.F. Tsai, J. Welch, K.Y. Chang and J. Shaefer

45. CUMBERLAND, JOHN H.
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Areas of research interest: environmental economics, natural resource economics, benefit cost analysis, regional economic development & modeling

CUMBERLAND, JOHN H. (continued)

Recent relevant publications:

Economic analysis of selected methods for removing chloroform from drinking water. Chapter 8 in Nonfluorinated Halomethanes in the Environment, National Academy of Sciences, Washington, D.C., 1978, pp. 228-251.

Economic analysis in the evaluation and management of estuaries. in Estuarine Pollution Control Management and Assessment, U.S. EPA March 1977, pp. 659-670.

The impacts of a nuclear power plant on a local community: problems in energy facility development. Chapter 11 in Energy and the Environment, edited by Raymond J. Burby and A. Fleming, Cambridge, MASS Ballinger, March 1979, pp. 95-101.

Planning future industrial development in response to energy and environmental constraints. in The Organization of Spatial Industrial Systems, F.E.I. Hamilton, Editor, Vol. 3, XXIII International Geographical Congress, Moscow, Symposium on Industrial Geography, Novosibirsk, 1976, pp. 204-208.

Boundary conditions and influences on area planning of power generating industries. in Energie Und Umwalt, Essen West Germany, VULCAN-UERLAG, June 1977, pp. 43-45.

46. CUNNINGHAM, JEFFREY J.
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Areas of research interest: ecology of submerged aquatic vegetation

Recent relevant publications:

Nitrogen fixation associated with four species of submerged angiosperms in the Central Chesapeake Bay. Estuarine and Coastal Science v. 9, pp. 813-818. 1979. (with Fredric Lipschultz and J. Court Stevenson)

47. CWIKLEWSKI, MARY
The Johns Hopkins University
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Areas of research interest: acoustics, electric field effects

43. DAGALAKIS, NICHOLAS
Mechanical Engineering Department
University of Maryland
College Park, Maryland 20742
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Areas of research interest: structural dynamics, off-shore structures

Recent relevant publications:

Dynamic response of offshore structures. expanded summary published at SESA National Conference, May 1979, with J.C.S. Yang and C.S. Li.

Stress distribution and displacements on the electromechanical shield of a superconducting generator after a three-phase fault. Transactions of the ASME, Vol. 100, pp. 63-636, Oct. 1978.

49. DAVIS, EDWARD A.
The Johns Hopkins University
Applied Physics Laboratory
Johns Hopkins Road
Laurel, Maryland 20810
(301) 792-7800 X3710

Areas of research interest: mathematical modeling; operations analysis; data analysis; data base management; environmental impact of cooling towers; air dispersion modeling.

Recent relevant publications:

Modeling analysis of the Chalk Point dye tracer experiment. with M.L. Moon, Cooling Tower Environment - 1978 Symposium, PPSP-CPCPT-22, May 1978.

Environmental assessment of Chalk Point cooling tower atmospheric emissions. PPSP-CPCTP-27, December 1978.

50. D'ELIA, CHRISTOPHER F.
Chesapeake Biological Laboratory
University of Maryland
Box 38
Solomons, Maryland 20688
(301) 326-4281

Areas of research interest: nutrient dynamics of marine and estuarine ecosystems.

Recent relevant publications:

Studies on the cultivation of macroscopic red algae. II. Kinetics of ammonium and nitrate uptake. J. Phycol. 14:266-272. 1978. (with J.A. DeBoer)

Growth and competition of the marine diatoms Phaeodactylum tricornutum Bohlin and Thalassiosira pseudonana Hasle and Heimdal. I. Nutrient effects. Mar. Biol. 50:305-312. 1979. (with R.R.L. Guillard and D.M. Nelson).

Growth and competition of the marine diatoms Phaeodactylum tricornutum Bohlin and Thalassiosira pseudonana Hasle and Heimdal. II. Light effects. Mar. Biol. 50:312-318. 1979. (with D.M. Nelson and R.R.L. Guillard).

Endocytic mechanisms of the digestive cells of Hydra viridis. I. Morphological aspects. Cytobios 23:17-31. 1979 (with C.B. Cook and L. Muscatine).

Nutrient and oxygen redistribution during a spring-neap tidal cycle in a temperate estuary. Science (in press). (with K.L. Webb).

51. DEVOE, HOWARD
Chemistry Department
University of Maryland
College Park, Maryland 20742
(301) 454-2633

Areas of research interest: solubility of nonelectrolytes in water and other solvents, bioaccumulation of nonpolar substances

Recent relevant publications:

Structural entropy changes in infinitely dilute solutions and pure liquids. H. DeVoe, J. Am. Chem. Soc., 98, 1724 (1976).

52. DIAZ, ROBERT J.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: habitat development and evaluation, taxonomy of estuarine benthos, particularly oligochaetes, application of numerical methods in benthic ecology, ecology of tidal freshwater systems, and animal-sediment relations.

Recent relevant publications:

Effects of brief temperature increases in larvae of Mulinia lateralis. J. Fish. Res. Bd. Canada 32:1870-1872. 1975.

Biotic indices and water quality. pp 137-153 in R.A. Deinbinger (ed) Models for environmental pollution control. Ann Arbor Science Pub., Michigan. 1973 (with D.F. Boesch, M.E. Bender and R. Jordan).

Effects of tropical storm Agnes on soft-bottom macrobenthic communities of the James and York estuaries and the lower Chesapeake Bay. Chesapeake Sci. 17:246-259. 1976. (with D.F. Boesch and R.W. Virnstein).

Acute toxicity of chlorine to selected estuarine species. J. Fish. Res. Board Canada 32:2525-2528. 1975. (with M.H. Roberts. M.E. Bender and R.J. Huggett).

Effects of residual chlorine on estuarine organisms. pp. 101-108 in L.D. Jensen (ed.), Biofouling Control Procedures. Marcel Dekker, Inc., New York. 1977. (with M.E. Bender, M.H. Roberts and R.J. Huggett.

53. DRAKE, BERT
Radiation Biology Laboratory
12441 Parklawn Drive
Rockville, Maryland 20852
(301) 443-2343

Areas of research interest: higher plants and plant communities; gas exchange of leaves and plant canopies; stomate physiology; comparative aspects of photosynthesis; primary productivity; community-carbon balance

DRAKE, BERT (continued)

Recent relevant publications:

Leaf temperature mapping with thermosensitive liquid crystal models. BioScience. Vol. 30, No. 1. pp 32-33. (with H. Wibe) 1980.

Carbon dioxide assimilation, photosynthetic efficiency and respiration of a Chesapeake Bay salt marsh. Journal of Ecology. Submitted. (with M. Read)

Seasonal patterns of soil water potential on an irregularly flooded tidal marsh. Aquatic Botany. Submitted. (with T.M. DeJong)

The effect of a seasonal change in canopy structure on the photosynthetic efficiency of a salt marsh. Oecologia. Submitted. (with S.N. Turitzin)

54. DREWRY, GEORGE E.

Chesapeake Biological Laboratory
University of Maryland
Box 38
Solomons, Maryland 20688
(301) 326-4281

Areas of research interest: ecology, systematics and behavior of fishes and amphibians; animal bioacoustics, evolution; development of keys and alogorithms for systematic identifications.

Recent relevant publications:

A new ovoviviparous frog, Eleutherodactylus jasperi (Amphibia, Anura, Leptodactylidae), from Puerto Rico. J. Herpetol., 10(3):161-165. 1976. (with K.L. Jones).

Development of fishes of the Mid-Atlantic Bight: an atlas of egg, larval and juvenile stages. Vol. VI. Stromateidae through ogcocephalidae. Biological Services Program, U.S. Fish and Wildlife Service, FWS/OBS-78/12, 416 pp. (with F.D. Martin, 1978).

Biochemical similarities among Puerto Rican Eleutherodactylus. Copeia (in press). (with M.H. Smith and D.O. Straney).

Externally visible features useful for separating young of striped bass (Morone saxatilis) from those of white perch (Morone americana) in the Chesapeake Bay region. Proc. 2nd Int. ICES Symp. on Early Life History of Fish, Woods Hole, MA, 2-5 April 1979 (in press).

Major features of ichthyoplankton populations in the upper Potomac estuary: 1974-1976. Proc. 2nd Int. ICES Symp. on Early Life History of Fish, Woods Hole, MA, 2-5 April 1979 (in press) (with E.M. Setzler, J.A. Mihursky, K.V. Wood, W.R. Boynton and T.T. Polgar).

55. DuPAUL, WILLIAM DAVID
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: commercial fisheries, physiology of marine invertebrates, coral reef biology.

Recent relevant publications:

Age and growth of the butterfish, Peprilus triacanthus in the lower York River. Ches. Sci. 18, 205-207. 1973 (with J.D. McEachran.

Eniwetok (Enewetak) atoll: aspects of the nitrogen cycle on a coral reef. Limnol. and Oceanog. 20(2) 198-209. 1975. (with K.L. Webb)

The effect of salinity on the aminotransferase activity of marine molluscs. Arch. Internat. Physiol. Biochem. 82(5) 817-820. 1975. (with K. Webb)

Biomass and nutrient flux measurements on Holothuria atra populations on windward reef flats at Enewetak, Marshall Islands. Proceedings Third International Symposium on Coral Reefs. 1977. (with K. Webb and C.F. D'Elia).

The economic impact of the sea scallop Placopecten magellanicus fishery in Virginia. Marine Fisheries Review. (in press). 1979. (with S. Baker).

56. EAGLES, THOMAS W.
The Johns Hopkins University
Applied Physics Laboratory
Johns Hopkins Road
Laurel, Maryland 20810
(301) 952-7100 x 3721

Areas of research interest: regional power plant location modeling

Recent relevant publications:

Modeling future power plant location patterns. with J. Cohon and C. ReVelle, EPRI EA-1063, April 1979, Electric Power Research Institute.

57. EATON, ANDREW D.
Chesapeake Bay Institute
The Johns Hopkins University
Baltimore, Maryland 21218
(301) 338-8251

Areas of research interest: Geochemistry;trace metals;estuarine chemisty.

Recent relevant publications:

Observations on the geochemistry of soluble Cu, Fe, Ni and Zn in the San Francisco Bay estuary. Environ.Sc. and Technology 13:425-432. 1979.

Sorption of ammonium by glass frits and filters: Implications for analyses of brackish and fresh water. Limnology and Oceanography. 24:397-399. 1979. (with V. Grant).

A simple Teflon sampling manifold for use with small injections. Atomic Absorption Newsletter, 17:113-114. 1978. (with E. Schiemer).

Geochemical Aspects of the Turbidity Maximum. Paper at Environ. Geology Sec. of SEPM-AAPG meeting, June 1977.

Marine Geochemistry of Cadmium. Marine Chemisty 4:141-154. 1976.

58. EBERHART, RUSSELL C.
The Johns Hopkins University
Applied Physics Laboratory
Johns Hopkins Road
Laurel, Maryland 20810
(301) 953-7100, X 3720

Areas of research interest: Cumulative effects of development in Chesapeake Bay area.

Recent relevant publications:

Pressures on the Edges of Chesapeake Bay: 1973-1979 dated December 1979, published as Report No. CPE-7905, The Johns Hopkins University Applied Physics Laboratory.

59. EVANS, DAVID ARTHUR
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: mathematics, computer science

Recent relevant publications:

Observation of a P_{11} (1650) in the elastic and charge exchange channels of a K-p formation experiment. Proceedings of the 1973 Conference on Baryon Resonances, Purdue, p. 311. 1973. (with E.L. Hart, R.M. Rice, R.B. Bacastow, S.Y. Fung, S.S. Hertzbach, G.W. Meisner, R. Ponte, J. Button-Shafer, S.S. Yamamoto).

Nuclear research emulsions, Vol. II. D.A. Evans, ed. Academic Press, New York.

A study of the reaction $K^- \to \Lambda\pi^+\pi^-$ at center of mass energies in the range 1.647 to 1.715 GeV. Bulletin of the American Physical Society 19, 589. 1974. (with E.L. Hart, R.M. Rice, R.B. Bacastow, S.Y. Fung, S.S. Hertzbach, R. Ponte, J. Button-Shafer, S.S. Yamamoto.)

A study of the reaction $K^- p \to \Lambda\pi^+\pi^-$ at C.M. energies in the range 1.65 to 1.78 GeV. Nuclear Physics B119, 315. 1977. (with E.L. Hart, R.M. Rice, R.B. Bacastow, S.Y. Fung, S.S. Hertzbach, R. Ponte, J. Button-Shafer and S.S. Yamamoto.

Integrated navigation system performance in deep ocean mining surveys. J. Inst. Navigation 24, no. 4, 283. 1978. (with L.M. McCloskey).

60. FANG, CHING SENG
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Experienced in water resource system analysis; mathematical solutions for unsteady fluid flow; mathematical models for thermal and water pollution management; drainage theory; flood control and erosion; wave mechanics; ground water; physical oceanography.

FANG, CHING SENG (continued)

Recent relevant publications:

Intensive Hydrographical and Water Quality Survey of the Chincoteague/Sinepuxtent/Assawoman Bay System. Vols. I & II. VIMS Special Scientific Report No. 82. 1977. (with A. Rosenbaum, J.P. Jacobson and P.V. Hyer).

Hydrography and Hydrodynamics of Virginia Estuaries. Part XVI. Mathematical Model Studies of Water Quality and Ecosystems in the Upper Tidal James. VIMS Special Report No. 155 in Applied Marine Science and Ocean Engineering. 1977. (with A. Rosenbaum and A.Y. Kuo).

Non-point Source Pollution Studies in the Chincoteague Bay System. VIMS Special Scientific Report No. 86. 1978. (with C. F. Cerco and A. Rosenbaum).

Storm Surge Height-Frequency Analysis and Model Prediction for Chesapeake Bay. VIMS Special Report No. 189 in Applied Marine Science and Ocean Engineering. 1978. (with J.D. Boon, et al.).

61. FANNING, D.S.
Department of Agronomy
University of Maryland
College Park, Maryland 20742
(301) 454-3721

Areas of research interest: soil mineralogy, genesis and classification; heavy metals, X-ray spectroscopy, sulfide formation and weathering in soils.

Recent relevant publications:

Correction of "tube contribution" interference in the determination of heavy metals by X-ray spectroscopy. Soil Sci. Soc. Amer. Jour. 40:857-860. 1976. (with V.Z. Keramidas).

Minerals in soil environments, In J.B. Dixon and S.B. Weed (ed.) American Society of Agronomy, Madison, Wisc. Micas. pp. 195-258. 1977. (with V.Z. Keramidas).

Determination of total sulfur in tidal marsh soils by X-ray spectroscopy. Soil Sci. Soc. Amer. Jour. 41:761-765. 1977. (with R.G. Darmody, W.J. Drummond, Jr. and J.E. Foss).

Loess deposits of the Eastern Shore of Maryland. Soil Sci. Soc. Amer Jour. 42:329-334. 1978. (with J.E. Foss, F.P. Miller and D.P. Wagner).

Extractability of Cd, Cu, Ni, and Zn by double acid versus DTPA and plant uptake at excessive soil levels. J. Environ. Qual. 7:506-512. 1978. (with R.F. Korcak.)

62. FAUST, MARIA A.

Chesapeake Bay Center for Environmental Studies
Smithsonian Institution
P.O. Box 28
Edgewater, Maryland 21037
(301) 798-4424

Areas of research interest: Studying the roles and functions of microbial communities within a terrestrial and aquatic ecosystem; organic matter production and transformation, development of algal blooms, survival of freshwater bacteria in brackish waters, and taxonomy of nannoplankton.

Recent relevant publications:

Non-point source studies on Chesapeake Bay: Preliminary tests of the application of Rhode River statistical models to Patuxent River sub-watersheds. CRC Pub. No. 61, 151 pp. 1977. (with D.L. Correll and J.W. Pierce.)

Sources of bacterial pollution in an estuary. Coastal Zone 78; Symp. Tech., Environ., Socioecon., Regul. Aspects of Coastal Zone Management. Vol. 1: 819-39. Am. Society of Civil Engineers Publisher, New York. 1978. (with N.M. Goff).

The relationship between phytoplankton cell size and the rate of ortho-phosphate uptake: in situ observations of an estuarine population. Marine Biology 45: 39-52. 1978. (with E.S. Friebele and D.L. Correll).

Carbon and phosphorus assimilation of estuarine plankton populations. In: International Symposium on the Effects of Nutrient Enrichment in Estuaries, CRC, Williamsburg, Va. 1979. (with R.J. Chrost).

63. FISHER, THOMAS R.

University of Maryland
Center for Environmental & Estuarine Studies
Horn Point Environmental Laboratories
Cambridge, Maryland 21613
(301) 228-8200

Areas of research interest: Nutrient cycling/primary production in Amazon lakes and U.S. estuaries; sediments/sedimentation in Chesapeake Bay.

Recent relevant publications:

Plankton and primary production in aquatic systems of the Central Amazon Basin. Comp. Biochem. Physiol. 62A:31-38. 1979.

Amazon lakes: water storage and nutrient stripping by algae. Limnol. Oceanogr. 24:547-553. 1979 (with P.E. Parsley).

A comment on the calculation of atom percent enrichment for stable isotopes. Limnol. Oceanogr. 24:593-595. 1979 (with E.E. Haines & R.J. Volk).

64. FOSS, JOHN E.
Department of Agronomy
University of Maryland
College Park, MD 20742
(301) 454-4787

Areas of research interest: Tidal marsh environments; soil-land interface.

Recent relevant publications:

Loess deposits of the Eastern Shore of Maryland. Soil Sci. Soc. Amer. J. 42:329-333. (with D. S. Fanning, F. P. Miller, and D. P. Wagner).

Tidal marsh soils of Maryland. Md. Agr. Exp. Sta. MP 930. 69 pp. 1978. (with R. G. Darmody).

Soil-landscape relationships of the tidal Marshes of Maryland. Soil Sci. Soc. Am. J. 43:534-541. 1979. (with R. G. Darmody).

Morphological and mineralogical features related to sulfur oxidation under natural and disturbed upland surfaces in Maryland. Agron. Abstracts. p. 231. 1979. (with D. P. Wagner, D. S. Fanning, M. S. Patterson and P. A. Snow).

65. FREEMAN, DAVID H.
Department of Chemistry
University of Maryland
College Park, Maryland 20742
(301) 454-5120

Areas of research interest: Marine chemistry, characterization and role of marine humic matter, fate of marine pigments from biota, novel applications of separation science to marine analysis problems.

Recent relevant publications:

Determination of Aqueous Solubility of PAH's by Coupled Column Liquid Chromatography , Analytical Chem. 50, 175. 1978. (with W. May, S. Wasik).

Report on Chester River Oyster Mortality, to Maryland Department of Natural Resources and USEPA. 1979. (with J. C. Cooney, D. Martin).

Particle Porosimetry by Inverse Gel Permeation Chromatography , Analytical Chem. 49, p. 1183. 1977. (with I. Poinescu).

Characterization and Measurement of Suspended Particles in Water, Proceedings of National Oceanographic Instrumentation Center Turbidity Workshop . May 1974.

66. FREEMAN, VANDA T.
Applied Physics Laboratory
The Johns Hopkins University
Johns Hopkins Road
Laurel, Maryland 20810
(301) 953-7100, X 3703

Areas of research interest: Mathematics, computer data bases.

67. GALLOWAY, R. A.
Department of Botany
University of Maryland
College Park, Maryland 20742
(301) 454-3821

Areas of research interest: Algae physiology and metabolism

Recent relevant publications:

Dark fixation of CO_2 by synchronous Chlorella. arch. Hydrobiol. 73:1-13. 1970. (with C. J. Soeder, J. S. Carter and P. Kausch).

Photoassimilation of ^{14}C acetate by Ulva lactuca. J. Phycol. 10:359-366. 1974. (with E. R. Gemmill).

The biochemical adaptation of algae to environmental change. In: E. John Vernberg, Physiological Adaptation to the Environment, pp. 365-381. 1975.

Chemical analysis of the extracellular material of Spirulina platensii. M. S. Thesis. 1978. (J. Fahey).

Effect of light quality and intensity on gycerol content in Dunaliella tertiolecta and the relationship to cell growth/osmo-regulation. J. Pycology 15:101-106. 1979. (with T. W. Jones).

68. GAVIS, JEROME
The Department of Geography & Environmental Engineering
The Johns Hopkins University
Baltimore, Maryland 21218
(301) 338-7104

Areas of research interest: Phytoplankton growth processes; phytoplankton-metal interactions; aquatic chemistry

GAVIS, JEROME (Continued)

Recent relevant publications:

Coenobical Cell Number in Scenedesmus quadieanda (chlorophyceae) as a function of growth rate in nitrate-limited chemostats. J. Chycol. 15:273-275. 1975. (with C. Chamberlin and L. D. Lystad).

Munk and Riley Revisited: Nutrient Diffusion Transport and Rates of Phytoplankton Growth. J. Marine Res. 34:161-179. 1976.

Arsenate Adsorption on Amorphous Aluminum Hydroxide. J. Colloid Interface Sci. 54:391-399. 1976. (with M. A. Anderson and F. J. Ferguson).

Transport Limited Nutrient Uptake Rates in Ditylum Brightwellii. Limnol Oceanogr. 20:604:716. 1975. (with W. J. Pasciak).

69. GOLDBERG, ALAN M.
School of Hygiene and Public Health
Johns Hopkins University
615 N. Wolfe Street
Baltimore, Maryland 21205
(301) 955-3045

Areas of research interest: Neurotoxicology; cholinergic biology.

Recent relevant publications:

Regulation of acetyl choline release during increased neuronal activity. In: Cholinergic Mechanisms (G. Papeu, ed.). Plenum. New York. 1980. (with L. Wecker).

The effects of inorganic lead on cholinergic transmission. In The Cholinergic Synapse (S. Tucek, ed.). Elsevier Amsterdam. 1979.

Choline acetyl transferace activity on spinal cord cell cultures is increased by DFP. In Life Sciences, Vol. 24, pp. 889-894. 1979. (with N. Brookes).

The effects of choline on acetyl choline release. In Choline and Lecithin in Brain Diseases. (A. Beabeau, J. Growdon & R. Wurtman, eds.). Raven Press. 1979. (with G. C. Bierkamper).

Biology of choline function. (editor). Raven Press. 1976. (With I. Hanin).

70. GOLDMAN, ALAN J.
Department of Mathematical Sciences
The Johns Hopkins University
Baltimore, Maryland 21218
(301) 338-7207

Areas of research interest: Game theory; linear programming and applications; graph theory and combinatorial optimization; optimal facility location.

Recent relevant publications:

The adequacy of management-science technology for nonmilitary applications in the Federal government. In: Management and Policy Science in American Government (M. J. Whie et al,eds.), Lexington Books (Heath). pp 135-170. 1975.

The dependence of inspection-system performance on levels of penalties and inspection resources. J. Res. Nat. Bur. Stnds, 80B: 189-236. 1976. (with M. H. Pearl).

Policing the marketplace. Math. Mag 50:179-185. 1977. (with M. H. Pearl).

Comments on:A new linear-programming approach to microdata file merging, by R. S. Barr and J. S. Turner. 1978 Compendium of Tax Research, Office of Tax Analysis, Dept. of Treasury, pp. 150-151. 1978.

Design for a study of research vitality in the mathematical sciences. Report to the NSF by a planning committee of Conf. Bd. of Math. Sciences. March 1980.

71. GORDON, HAYDEN H.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Remote sensing

Recent relevant publications:

Progress toward a Circulation Atlas for application to coastal water siting problems. Presented at the Conference on the Application of Remote Sensing to the Chesapeake Bay Region, Coolfont Conf. Center, Berkeley Spring, West Virginia. 1977 (with John C. Munday, Jr.)

GORDON, HAYDEN H. (Continued)

Application of remote sensing to estuarine management. Annual Report No. 5., Contract NASA-NGS 47-022-005. 1977. (with John C. Munday, Jr., and Harold F. Hennigar).

Application of remote sensing to estuarine management. Annual Report No. 6, Contract NASA-NGS 47-022-005. 1978. (with John C. Munday, Jr.)

Applications of remote sensing to estuarine management. Final Report and Annual Report No. 7, Contract NASA-NGL 47-022-005. 1979. (with John C. Munday, Jr.).

Distribution and abundance of submerged aquatic vegetation in the lower Chesapeake Bay, Virginia. Final Report, EPA, Chesapeake Bay Program, Contract No. EPA R805951010. 1979. (with Robert J. Orth and Kenneth Moore).

72. GRANT, GEORGE C.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Taxonomy and ecology of marine zooplankton, specializing in the Chaetognatha.

Recent relevant publications:

Guidelines for zooplankton sampling in quantitative baseline and monitoring programs. U.S. EPA, Ecological Research Series EPA-600/3-78-026, 52 pp., 1978. (with F. Jacobs).

Factors associated with accuracy in sampling fish eggs and larvae. U.S. Fish and Wildlife Service, Offices of Biological Services, FWS/OBS-78/83, 67 pp. + appendices. 1978. (with R. R. Bowles, and J. V. Merriner).

Lower Bay Zooplankton Monitoring Program: an introduction to the program and results of the initial survey of March 1978. VIMS, Spec. Sci. Rep. No. 93, 92 pp. 1979. (with J.E. Olney).

GRANT, GEORGE C. (Continued)

Middle Atlantic Bight zooplankton: second year results and a discussion of the two-year VIMS-BLM Survey. VIMS, SRAMSOE No. 192, 236 pp. 1979.

Parthenogenesis and the distribution of the Cladocera. Bull. Biol. Soc. Washington (in press). 1979. (with B. B. Bryan).

73. GRAY, OSCAR S.
University of Maryland School of Law
500 West Baltimore Street
Baltimore, Maryland 21201
(301) 528-7174

Areas of research interest: Environmental Law

Recent relevant publications:

Cases and Materials on Environmental Law. Bureau of National Affairs (BNA), 1970, 2nd ed. 1975). (Supplements published in 1974, 1975 and 1977).

74. GREEN, LINDA L.
Johns Hopkins University
Applied Physics Laboratory
Johns Hopkins Road
Laurel, Maryland 20810
(301) 953-7100, X 3718

Areas of research interest: Energy related studies, specially landfill methane technology, solar, and small scale hydroelectric development.

Recent relevant publications:

Use of Landfill Gas. Energy Programs at The Johns Hopkins University Applied Physics Laboratory, EQR/79-3. July-September 1979.

Recovery and Utilization of Landfill Methane. Energy Programs at The Johns Hopkins University Applied Physics Laboratory, EQR/79-2. April-June 1979.

GREEN, LINDA L. (Continued)

Projection of Hydroelectric Development. Energy Programs at The Johns Hopkins University Applied Physics Laboratory, EQR/78-4. October - December 1978.

Problems of Hydroelectric Development at Existing Dams. The Johns Hopkins University Applied Physics Laboratory, HE-004, Vol. II, CPE-7901, QM-79-133. April 1979. (with R. J. Taylor).

75. GUPTA, GIAN C.
Department of Natural Sciences
University of Maryland, Eastern Shore
Princess Anne, Maryland 21853
(301) 651-2200, X 327

Areas of research interest: Environmental chemistry of water and soil; disposal of energy related pollutants in the marine and estuarine environment; effect of heavy metal pollution on marine and estuarine environment.

Recent relevant publications:

Land Disposal of Animal Wastes (Movement of Nitrates). American Society of Civil Engineers, J. Env. Engg. August 1977. Vol. 103, 551-556.

76. HAAS, LEONARD W.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Primarily material and energy flow in estuarine plankton ecosystems; particularly, the relationship between biological and hydrographic processes. Physiological ecology of heterotrophic and autotrophic ultraplankton.

Recent relevant publications:

The significance of urea for phytoplankton nutrition in the York River, Virginia. Estuarine Processes (M. Wiley, ed.), Vol. 1, pp 90-102. Academic Press, New York. 1976. (With K. L. Webb).

The effect of the spring-neap tidal cycle on the vertical salinity structure of the James, York and Rappahannock Rivers, Virginia, USA. Estuarine and Coastal Marine Science, 5:485-496. 1977.

Nutritional mode of several nonpigmented micro-flagellates from the York River estuary, Virginia. In Press. J. Exp. Mar. Biol. and Ecol. 1978. (with K. L. Webb).

HAAS, LEONARD W. (Continued)

Phytoplankton dynamics in a temperate estuary. Limnol. Oceanogr. (In review). 1978. (with K. L. Webb).

Flagellated protozoans predatory on mass-cultured Phaeodactylum tricornutum Bohlin. (In prep.). 1978.

77. HARGIS, WILLIAM JENNINGS, JR.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Biological oceanography, resource and environmental management, information management, science administration, coastal zone management, parasitology, fisheries.

Recent relevant publications:

Engineering Works and the Tidal Chesapeake. In: Remote Sensing of the Chesapeake Bay, pp. 105-123. NASA SP-294, Wallops Station, Virginia. VIMS Contrib. #469. 1971.

Preface to Biota of the Chesapeake Bay. Chesa. Science and Space, 13:S1-S3. Vims Contri. #294. 1972. (with L. E. Cronin and D. Challinor).

Exploration and Research in the Chesapeake Bay - Being a brief history of the development of knowledge of the Bay of Santa Maria. Paper at the meeting of the Bi-State Conference on the Chesapeake Bay at Patuxent Naval Air Station, April 1977. VIMS Contr. #837. 117 pp. 1977.

Kepone residues in the Chesapeake Bay biota . VIMS Contr. # 841, 22 pp. 1977. (with M. E. Bender and R. J. Huggett).

78. HEATFIELD, BARRY M.
Department of Pathology
University of Maryland School of Medicine
Room 7-61A
Medical School Teaching Facility
Baltimore, Maryland 21201
(301) 528-3393

Areas of research interest: Chemical carcinogenesis; environmental neoplasia, markers of malignant and premalignant transformation.

Recent relevant publications:

Adenocarcinoma of the kidney. II. Enzyme histochemistry of renal adenocarcinomas induced in rats by N-(4'-fluoro-4-biphenylyl) acetamide. J. Nat'l C. Inst. 57: 795-808. 1976. (with D. E. Hinton and B. F. Trump)

Studies on carcinogensis of human prostate. I. Technique for long-term explant culture. Tissue Culture Assoc. Manual, 4: 855-856. 1978. (with Sanefuji, and B. J. Trump).

Studies on carcinogenesis of human prostate. IV. Comparison of normal and neoplastic prostate during long-term explant culture. SEM/1979/III, SEM, Inc., AMF O'Hare, Ill., pp. 645-655. (with Sanefuji and B. F. Trump).

Studies on carcinogenesis of human prostate. V. Effects of the carcinogen N-methyl-N'-nitro-N-nitrosoguanidine (MNNG) on normal prostate during long-term explant culture. SEM/1979/EEE, Semc, Inc., AMF O'Hare, Ill, pp. 657-663. (with Sanefuji and B. J. Trump).

Opposite effects of lead on chemical carcinogenesis in kidney and liver of rats. Bull. Environ. Contam. Toxicol. 23: 464-469. 1979. (with D. E.Hinton, M. M. Lipsky and B. F. Trump).

79. HARRIS, CURTIS C., JR.
Bureau of Business and Economic Research
University of Maryland
College Park, Maryland 20742
(301) 454-2303

Areas of research interest: Regional and urban economics; forecasting regional economics; econometric models

Recent relevant publications:

Locational Analysis: An Interregional Econometric Model of Agriculture, Mining, Manufacturing and Services. Lexington Books (D.C. Heath), Lexington, MA. (with Frank E. Hopkins).

The Urban Economies, 1985: A Multiregional, Multi-industry Forecasting Model. Lexington Books (D.C. Heath), Lexington, MA. 1973.

Regional Economic Effects of Alternative Highway Systems. Ballinger Publishing Co. (J. B. Lippincott CO.), Cambridge, MA. 1974.

Rail, Truck, or Small Car - Which is the Energy Saver? Business Horizons, Vol. XVII, No. 6, December 1974. (with Stanley J. Hille).

The Role of Economic Models in Evaluating Commercial Fishery Resources , American Journal of Agricultural Economics, forthcoming. (with V. Norton).

80. HARRIS, RICHARD L.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Marine and environmental chemistry, specializing in trace metal equilibria; processes affecting the cycling, distribution, and interaction of trace components in the Chesapeake Bay and on the Atlantic Continental Shelf.

Recent relevant publications:

Trace Metals. Chapter 13, Middle Atlantic Outer Continental Shelf Environmental Studies, Second Year Final Report to Bureau of Land Management, Department of Interior, Washington, D.C. 1978. (with R. Jolly, G. Grant and R. Huggett).

Metal Distributions in Sediment, Biota, and Particulate Matter of the Middle Atlantic Bight. Spec. Rept. 177, Virginia Institute of Marine Science. 1977. (with R. Jolly, R. Huggett and G. Grant).

Processes Affecting the Vertical Distribution of Trace Components in the Chesapeake Bay. Ph.D. Thesis, University of Maryland, 212 p. 1976.

HARRIS, RICHARD L. (Continued)

Processes Affecting the Vertical Distribution of Trace Components in the Chesapeake Bay. Marine Chemistry in the Coastal Environment (T. M. Church, ed.). pp. 176-185. American Chemical Society, Washington, D.C. 1975. (with G. R.Helz and R. L. Cory).

Investigation of the Transport of Metals and Orthophosphate Away from a Sewage Treatment Plant Outfall. Environmental Letters 10(2):159-169. 1975. (with G. R. Helz and S. M. Bailey).

81. HAVEN, DEXTER S.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Physiology of molluscs; natural sediments of oyster bars.

Recent relevant publications:

Bacterial depuration by the American oyster (Crassostrea virginica) under controlled conditions. Vol. I. Biological and technical studies. VIMS Spec. Sci. Rept. No. 88, 1-255 pp. 1978. (with F. O. Perkins, R. Morales-Alamo and M. W. Rhodes).

Bacterial depuration by the American oyster (Crassostrea virginica) under controlled conditions. Vol. II. Practical considerations and plant design. VIMS Spec. Sci. Rep. No. 88, 1-48 pp. 1978. (with B. J. Neilson, F. O. Perkins, R. Morales-Alamo and M. W. Rhodes).

The oyster industry of Virginia: Its status, problems and promise. VIMS Spec. Sci. Rept. No. 168 in Appl. Mar. Sci. and Ocea. Eng., 1-149 pp. 1978. (with W. J. Hargis, Jr. and P. C. Kendall).

The oyster industry of Virginia: Its status, problems and promise. (A comprehensive study of the oyster industry in Virginia). VIMS Spec. Papers in Mar. Sc. No. 4. 1-1024 pp. 1978. (with W. J. Hargis, Jr. and P. C. Kendall).

Coliform depuration of Chesapeake Bay oysters. Nat. Shellfish San. Workshop Proc. In Press. (with F. O. Perkins, R. Morales-Alamo and M. W. Rhodes).

82. HEINBOKEL, JOHN F.
Chesapeake Bay Institute
Baltimore, Maryland 21218
(301) 338-77771

Areas of research interest: Role of micro-zooplankton in estuarine and marine systems.

Recent relevant publications:

Possible consequences of containing microplankton for physiological rate measurements. J. Exp. Mar. Biol. Ecol. 26:55-76. 1977. (with E. L. Venrick and J. R. Beers).

Studies on the functional role of tintinnids in the Southern California Bight. I. Grazing and growth rates in laboratory cultures. Mar. Biol. 47:177-189. 1978.

Studies on the functional role of tintinnids in the Southern California Bight. II. Grazing rates of field populations. Mar. Biol. 47:191-197. 1978.

Studies on the functional role of tintinnids in the Southern California Bight. III. Grazing impact of natural assemblages. Mar.Biol. 52:23-32. 1979. (with J. R. Beers).

83. HELZ, GEORGE R.
Department of Chemistry
University of Maryland
College Park, Maryland 20742
(301) 454-4850

Areas of research interest: Sources, transport mechanisms, transformation rates and sinks for trace organic and inorganic contaminants in water.

Recent relevant publications:

Trace Element Inventory for the Northern Chesapeake Bay with Emphasis on the Influence of Man. Geochim. et. Cosmochim. Acta., 40:573-80. 1976.

HELZ, GEORGE R. (Continued)

Apparent Ionization Constant of Hypochlorous Acid in Seawater, Environmental Science and Technology, 10:384-86. 1976. (with R. Sugam).

Bromoform Production by Oxidative Biocides in Marine Waters; in Ozone-Chlorine Dioxide Oxidation Products of Organic Materials (R. G. Rice, J. A. Cotruvo and M. E. Browing, Eds.), pp. 68-76. 1978. (with R. Y. Hsu and R. M. Block).

Controls of the Stability of Sulfide Sols; Colloidal Covellite as an Example. Geochimica Cosmochimica Acta, 43: 1645.50. 1979. (with L. L. Horzempa).

Chloro-and Bromocarbons in Coastal Waters. Limnol. Oceanogr., 23:858-869. 1978. (with R. Y. Hsu).

84. HERSHNER, CARL
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Estuarine ecology, particularly wetlands ecology; analysis of populations and communities; marine and estuarine pollution; systems modeling; practical applications of environmental research.

Recent relevant publications:

Effects of the Chesapeake Bay oil spill on salt marshes of the lower Bay. Proceedings of Oil Spill Conference, American Petroleum Institute, Washington, D.C., pp 529-533. 1977. (with K. Moore).

Petroleum sulfur-containing compounds and aromatic hydrocarbons in the marine mollusks Modiolus demissus and Crassostrea virginica. Proceedings of Oil Spill Conference, American Petroleum Institute, Washington, D.C., pp. 627-632. 1977. (with J. L. Lake).

Ecological effects of experimental oil spills on eastern coastal plain ecosystems. Proceedings of Oil Spill Conferences, American Petroleum Institute, Washington, D.C., pp. 505-509. 1977. (with M. E. Bender, E. A. Shearls, R. P. Ayres, and R. J. Huggett).

General procedures for the study of accidental discharges of oil in marine environment. Prepared for Continental Oil Company, 110 p. 1978. (with M. E. Bender and D. G. Doumlele.).

Effects of chronic oil pollution on salt marsh grass communities. (in review). (with J. Lake).

85. HETRICK, FRANK M.
Microbiology Department
University of Maryland
College Park, Maryland 20742
(301) 454-5411

Areas of research interest: Viral and bacterial diseases of fish and shellfish

Recent relevant publications:

Effect of temperature on the infection of rainbow trout with infectious hematopoietic necrosis virus. J. Fish. Dis. 2:253-257. 1979. (with J. L. Fryer and M. Knittel).

Increased susceptibility of rainbow trout to infectious hematopoietic necrosis virus following exposure to copper. Appl. Environ. Microbiol. 37:198-202. 1979. (with M. Knittell and J. L. Fryer).

Report of a workshop on the cultivation of molluscan cells in vitro. Tissue Culture Association Report. 13:19-23. 1979.

Decontamination of the tissues of the American oyster for cell and organ culture. TCA Manual, 5, No. 1, 1-3. 1979. (with E. B. Stephens).

Preparation of primary cell cultures from the American oyster. TCA Manual, 5, No. 1, 88-92. 1979. (with E. B. Stephens).

86. HINES, ANSON H.
Chesapeake Bay Center for Environmental Studies
P. O. Box 28
Edgewater, Maryland 21037
(301) 798-4424

Areas of research interest: Marine invertebrate zoology; evolution of life history and reproduction; population biology; community ecology; physiological ecology

Recent relevant publications:

Reproduction in three species of intertidal barnacles from central California. Biol. Bull. 154:262-281. 1978.

The comparative reproductive ecology of three species of intertidal barnacles. In Reproductive Ecology of Marine Invertebrates, S. E. Stancyk. Belle W. Baruch Library in Marine Science, Vol. 9, pp. 213-234. Univ. South Carolina Press, Columbia. 1979.

HINES, ANSON H. (Continued)

Expansion of a central California Kelp forest following the mass mortality of sea urchins. Mar. Biol. 51:83-91. 1979. (with J. S. Pearse).

Effects of a thermal discharge on reproductive cycles in Mytilus edulis and M. californianus (Mollusca, Bivalvia). Fish. Bull., U. S. 77: in press.

Observations of sea otters digging for clams at Monterey Harbor, CA. Fish Bull., U. S. 78: in press. (with T. R. Loughlin).

87. HO, GAINES CHEN-SANG
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Estuarine water quality management; mathematical modeling of biological treatment process; application of chlorine in manganese removal technology; heavy metal in aquatic environment; nutrient cycle in estuarine environment; water purification and wastewater treatment.

Recent relevant publications:

Oxidation of Manganese (II) by Aqueous Chlorine. Ph.D. Thesis, Harvard University. 1974.

A Water Quality Study of the Eastern Branch of the Elizabeth River. Special Report No. 126 in Applied Marine Science and Ocean Engineering. 1977.

A Water Quality Study of Buchanan Creek, a Tributary of the Lynnhaven System. Special Report No. 127 in Applied Marine Science and Ocean Engineering, VIMS. 1977.

Mathematical Models of Little Creek Harbor and the Lynnhaven Bay System. Special Report No. 145 in the Applied Marine Science and Ocean Engineering, VIMS. 1977.

Evaluation of Ventra Vacs at Pier 12, Naval Base, Norfolk, VA. Special Report No. 228 in Applied Marine Science and Ocean Engineerings, VIMS. 1979.

88. HOBBS, CARL HEYWOOD, III
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Physical processes of the coastal zone, shoreline protection, coastal zone management, sedimentology.

Recent relevant publications:

Project Supervisor, Senior Author, or Co-Author of 27 separate Shoreline Situation Reports for 34 of Virginia's Tidewater localities. Published by VIMS or jointly with CRC. 1975-1979.

Some deformation structures in recent beach sands: in Coastal processes and resulting forms of sediment accumulation, V. Goldsmith, ed. S.E.P.M. Guide Book, VIMS, SRAMSOE No. 143. 1977.

Landward Migration of Barrier Sands Under Stable Sea Level Conditions: Plum Island, MA. Discussion: Journal of Sedimentary Petrology, Vol. 49., N. 1, pp 330-331. 1979.

Summary of Shoreline Situation Reports for Virginia's Tidewater Localities. VIMS SRAMSOE 209, 32 p. 1979. (with Owen and Morgan).

Shoreline Erosion in the Commonwealth of Virginia: Problems, Practices and Possibilities. VIMS SRAMSOE 220, 205 pp. 1979. (With Byrne and others).

89. HOLTAN, H. N.
Agricultural Engineering Department
University of Maryland
College Park, Maryland 20742
(301) 454-3901

Areas of research interest: Modeling of watersheds, including surface and groundwater flow

Recent relevant publications:

A User's Manual for UOM Version of USDAHL Model of Watershed Hydrology. Agricultural Experiment Station Bulletin, U. of MD MP 918, October 1977. (with M. Yaramanoglu).

A New Concept for Residential Wastewater Disposal. Proceedings of 3rd World Congress on Water Resources, Mexico City, Mexico. 1979. (with J. E. Ayars, H. L. Brodie).

HOLTAN, H. N. (Continued)

Procedures Manual for Sediment Phosphorous and Nitrogen Transport Computations with USDAHL. Agricultural Experiment Station, Department of Agricultural Engineering, MP 943, Contribution 5602.

Casebook on Use of Representative and Experimental Basins. Sponsored and to be published by UNESCO as part of the Internal Hydrological Program (IHP). (with D. N. Body, A. Becker, P. Dubreuil, and K. Kuprianor).

90. HOUDE, EDWARD D.
University of Maryland
Center for Environmental and
Estuarine Studies
Chesapeake Biological Laboratory
Solomons, Maryland 20688
(301) 326-4281
(after 1 November 1980)

Areas of research interest: fish larvae, larval culture, fish biology

Recent relevant publications:

Simulated food patches and survival of larval bay anchovy, Anchoa mitchilli and sea bream, Archosargus rhomboidalis. U.S. Nat. Mar. Fish. Serv. Fish. Bull. 76:483-487. 1978. (with R.C. Schekter)

Biology of two exploited species of halfbeaks, Hemiramphus brasileinsis and H. balao from southeast Florida. Bull. Mar. Sci. 28:624-644. 1978. (with S.A. Berkeley)

Functional and developmental responses of fish larvae to varying prey concentrations. Int. Council Explor. Sea, Early Life History Symp., ICES/ELH Symp./ PE:2, 7 pp. 1979. (with R.C. Schekter)

Laboratory culture of marine fish larvae and their role in marine environment research. In: The State of Marine Environmental Research, Proceedings of a symposium, U.S. Environmental Protection Agency. (In press). (with A.K. Tahiguchi)

Growth rates, rations and cohort consumption of marine fish larvae in relation to prey concentrations. ICNAF Press, Early Life History Symposium Volume. (In press). (with R.C. Schekter)

91. HUGGETT, ROBERT J.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23602
(804) 642-2111

Areas of recent research:Trace metals, pesticides, oil pollution, water quality criteria, environmental chemistry.

Recent relevant publications:

Ecological effects of experimental oil spills on eastern coastal plain estuarine ecosystems. Proc. Jt. Conf. on Prevention and Control of Oil Spills, American Petroleum Institute, Washington, D. C. 1977. (with M. E. Bender, E. A. Shearls, R. P. Ayres, and C.H. Hershner).

The need for a marine Sediment SRM, Certified for trace metals. Proceedings of the Workshop SRM's for Marine Science. National Bureau of Standards, Catalina Island, CA, October 1975.

Kepone Residues in Chesapeake Bay Biota. Proceedings of the Kepone Seminar II, Easton, MD. September 1977. (with M. E. Bender and W. J. Hargis).

Biological Uptake of Kepone in Estuarine Environments. Proceedings of the Kepone Seminar II, Easton, MD, September 1977.

Variability of zinc in oysters (Crassostrea virginica): Implications for sampling design. F. Res. Board, Ca. In Press. 1978. (with D. R. Colby and F. A. Cross).

92. HUNG, YEN-WAN
Departmentof Natural Sciences
University of Maryland, Eastern Shore
Princess Anne, Maryland 21853
(301) 651-2200, X 326

Areas of research interest: Effects of environmental parameters on heavy metals toxicity in shellfish; kinetics and mechanisms of inorganic chemical reactions in solution phase. Purification and characterizations of oyster proteins associated with heavy metals.

93. HYER, PAUL V.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Estuarine and continental shelf oceanography; mathematical modeling of water quality and aquatic ecosystems.

Recent relevant publications:

Water Quality Models of Back and Poquoson Rivers, Virginia. VIMS Spec. Report. No. 144 in Applied Marine Science and Ocean Engineering, No. 144. June 1977. (with A. Y. Kuo and B. J. Neilson).

Intensive Hydrographical and Water Quality Survey of the Chincoteague/ Sinepuxent/Assawoman Bay Sytems. VIMS Spec. Scien. Report No. 82, June 1977. (with C. S. Fang, A. Rosenbaum, and J. P. Jacobson).

Water Quality Model of the York River, VA. VIMS SRAMSOE No. 146, November 1977.

Ecosystem Model of the York River, VA. Paper presented to the Virginia Academy of Science, May 1978.

Verification of a York River Ecosystem Model. Paper presented at the ASCE Specialty Conference on Verification of Mathematical and Physical Models in Hydraulic Engineering, August 9-11, 1978.

94. INMAN, JOHN C.
Agronomy Department
University of Maryland
College Park, Maryland 20742
(301) 454-3721

Areas of research interest: Water applications to soil; nitrification inhibitors; agricultural sources of pollution; biomass conversion to alcohols.

Recent relevant publications:

Decomposition and Heavy Metal Dynamics of Forest Litter in Northwestern Indiana. Environ. Pollution 17:39-51. 1978. (with G. R. Parkee).

95. JONES, J. CLAIBORNE
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Coastal information systems; coastal zone management.

Recent relevant publications:

Local Environmental Management - A Case Study: The Virginia Wetlands Act, 1972-1974 . Master's Thesis, College of William and Mary. 1976.

Public Health Aspects of Tropical Storm Agnes in Virginia's Portion of the Chesapeake Bay and Its Tributaries. In: The Effects of Tropical Storm Agnes on the Chesapeake Bay Estuarine System, CRC, by The Johns Hopkins University Press.

An Assessment of Estuarine and Nearshore Marine Environments. Virginia Institute of Marine Science, SRAMSOE No. 93. 1976.

MERRMS - A Coastal Resources Information System for Virginia. In Report of the Conference on Marine Resources of the Coastal Plain States. 1976.

Local Environmental Management - Can It Work? A Case Study of the Virginia Wetlands Act. Coastal Zone Management Journal, Vol. 4, No. 1/2. 1978

96. JONES, RAYMOND T.
Department of Pathology
University of Maryland School of Medicine
10 S. Pine Street
Baltimore, Maryland 21201
(301) 528-3980

Areas of research interest: Fish pathology - non-infectious diseases; chemical carcinogenesis on fish; fish organ culture.

Recent relevant publications:

Chemical carcinogenesis in fish: Induction of hepatic drug metabolizing enzymes and bacterial mutagenesis with polycyclic aromatic hydrocarbons (PAH). In press. (with D. E. Hinton, J. E. Klaunig, M. M. Lipsky, R. Jack, M. Kahng, H. Sanefuji, and B. F. Trump).

JONES, RAYMOND T. (Continued)

Glomerular mesangial fibrosis in hatchery-reared rainbow trout. (Salmo gairdneri). J. Fish. Res. Board Can. 33:2551-2559. 1976. (with D. E. Hinton, R. L. Herman).

Carcinogenesis in the pancreas. I. Long-term explant culture of human and bovine pancreatic ducts. J. Natl. Cancer Inst. 58:557-566. 1977. (with L. A. Barrett, C. van Haaften, C. C. Harris and B. F. Trump).

Long-term culture of fish kidney tubules. Am. Zool. 18:671. 1978. (with H. Sanefuji and D. E. Hinton).

97. JORDAN, ROBERT A.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Thermal pollution, estuarine benthic ecology, euthrophication, algal ecology.

Recent relevant publications:

Factorial enrichment experiments in a southeastern Michigan lake. Ph.D. Thesis, University of Michigan, 235 pp. 1970.

Stimulation of phytoplankton growth by mixtures of phosphate, nitrate, and organic chelators. Water Research, VO. 7:189-195. 1973. (with M. E. Bender).

Effects of marine engines on freshwater lakes. Boating Industry Associations Summer Symposium, Lake Geneva, Wisconsin, June 1972. (with M. E. Bender and J. E. Schenk).

Observations on dissolved oxygen conditions in three Virginia estuaries after Hurricare Agnes. In: The Effects of Tropical Storm Agnes on the Chesapeake Bay Estuarine System, J. Davis, ed. CRC Pub. 34. 1974.

Development and evaluation of a helicopter-borne water-quality monitoring system. Joint Conf. Sens. Environ. Pollu. 4th 1977 (Pub. 1978), pp. 493-499. 1978. (with J. W. Wallace, J. Flynn, and R.W. Thomas)

98. KAGAN. JEFFREY A.
Applied Physics Laboratory
Johns Hopkins Road
Laurel, Maryland 20810
(301) 953-7100

Areas of research interest: Air pollution modeling

Recent relevant publications:

The Impact of Combustion Products, APL Technical Digest, APL/JHU, Vol. 13, No. 3. September 1974.

Power Plant Site Evaluation Final Report: Easton Utilities Commssion Power Plant No. 2. APL/JHU Report PPSE-5-2. March 1975.

Mechanical Draft Cooling Tower Visible Plume Behavior: Measurements, Models, Predictions. Proceedings on Symposium on Cooling Tower Environment - 1974, USERDA Report CONF-740302, April 1975.

Chalk Point Cooling Tower Project, Volume 1: Salt Loading, Modeling and Aircraft Hazard Studies. APL/JHU Report PPSP-CPCTP-16. August 1977.

Modeling Future Power Plant Location Pattersn. APL/JHU for Electric Power Research Institute, Report EPRI-EA-1063. April 1979.

99. KAHNG, MYONG WON
Department of Pathology
University of Maryland, School of Medicine
10 S. Pine Street
Baltimore, Maryland 21201
(301) 528-7890

Areas of research interest: Regulation of intermediary and energy metabolism with changes of environment and nutrition in aquatic animals; effect of environmental toxins and carcinogens on mixed function oxidase system.

Recent relevant publications:

Induction and properties of aryl hydrocarbon hydroxylase in bovine pancreatic ducts. J. Natl Cancer Inst. 62:1251-1255. 1979. (with R. T. Jones and B. F. Trump).

Metabolic and ultrastructural response of rat kidney cortex to in vitro ischemia. Exp Mol Path 29:183-198. 1978. (with I. K. Berezesky and B. F. Trump).

KAHNG, MYONG WON (Continued)

Enzymic profiles of bovine pancreatic ductal and acinor tissues. Enzyme 24:107-112. 1979 (with M. C. Lakshmanan and R. T. Jones).

Studies on the pathogenesis of ischemic cell injury. VIII ATPase of rat kidney mitochondria. Lab Invest 40:686-694. 1979. (with W. J. Mergner, S. H. Change, L. Marzella, and B. F. Trump).

Chemical carcinogenesis in fish: induction of hepatic drug metabolizing enzymes and bacterial mutagenesis with polycyclic aromatic hydrocarbons in the marine environment. Environmental Research Laboratory Gulf Breeze, FA, August 14-18, 1978. (with D. E.Hinton, J. E. Klaunig, M. Lipsky, J. Jack, H. Sanefugi, R. Jones and B. F. Trump).

100. KARLANDER, EDWARD P.
Department of Botany
University of Maryland
College Park, Maryland 20742
(301) 454-3823

Areas of research interest: Algal physiological ecology: interactions of light, temperature, salinity, and nutrients(especially nitrogen sources); effects of light and UVB on higher plants (especially crops).

Recent relevant publications:

Effects of light on the low temperature autotropic metabolism of Chlorella sorokiniana. Environ. Exptl. Botany (in press). 1979. (with A. M. Spearing).

Soil algae from a Maryland Serpentine Formation. Soil Biol. Biochem. 11:205-207. 1979. (with D. E. Terlizzi).

The growth rates of Mychonastes ruminatus. Simpson and VanValkenburg under various light, temperature and salinity regimes. Br. Phycol. J. 13:291-298. 1978. (with P. D. Simpson & S. D. VanValkenburg).

The influence of light, temperature and salinity on the growth of Nunnochloris oculata droop with urea. Limnol. Oceanogr. (submitted). 1980. (with D. E. Terlizzi).

Features for classifying photosynthetic aerobic nanoplankton by numerical taxonomy. Taxon. 26:417-505. 1977. (with S. D. VanValkenburg and G. W. Patterson).

101. KATOR, HOWARD I.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Marine microbial ecology, petroleum microbiology, bacterial degradation of organic compounds in the marine environment, use of bacteria in synthetic reactions, controlled production of useful metabolites, waste removal and nutrient cycling.

Recent relevant publications:

The concentrations and distributions of paraffinic hydrocarbons in seawater and marine organisms. GURC Report, Offshore Ecology Investigation. Project No. OE73HJM. 1975. (with C. H. Oppenheimer).

Microbial response after two experimental oil spills in an Eastern coastal plain estuarine ecosystem. Pages 517-522 in Proc. API-EPA-USCG Oil Spill Conf., New Orleans. 1977. (with R. Herwig).

Bacteriology. Chapter 11 of Final Report to Bureau of Land Management. In Middle Atlantic Outer Continental Shelf environmental study, Vol. II, Chemical and Biological Benchmark Studies. VIMS. 1977.

Evaluation of Salinity and Temperature as Stress Factors Affecting the Enumeration of Fecal Coliforms by the Electrochemical Detection Method. NASA Final Contract Report, Cont. No. NASI-14884. 1978. (with M. Rhodes).

Bacteriology. Chapter 11 of Final Report to Bureau of Land Management. In Middle Atlantic Continental Shelf Environment Study, VIMS. 1978. (with D. Lister, A. Maccubbin and M. Rhodes).

102. KAUFMAN, LESLIE SAMUEL

Chesapeake Bay Institute
The Johns Hopkins University
Baltimore, Maryland 21218
(301) 338-8422

KAUFMAN, LESLIE SAMUEL (Continued)

Areas of research interest: Environmental biology.

Recent relevant publications:

Status of commercially important bivalves near the proposed Church Creek power plant site. JHU Spec Rept 75. 197. (with D. S. Becker).

The proposed expansion of Delmarva Power and Light generating station, Vienna, Maryland: Site characterization. JHU Occ. Rept 4. 1979. (with M. Van Deusen).

On the foraging strategies of carnivorous plants: I. Evidence for an adaptive response to low prey availability in the Venus' Flytrap (Dionaea muscipula). Carniv. Plant Nwlts VI:1. 1977. (with M. Schwarzbeck).

Associations of seven West Indian reef fishes with sea anemones. Bull.Mar. Sci. 26(2):225-232. 1976. (with R. Hanlon).

Feeding behavior and functional coloration of the Atlantic trumpetfish, Aulostomus maculatus. Copeia 2:377-378. 1976.

103. KEMP, W. MICHAEL
Horn Point Environmental Labs
University of Maryland
Box 775
Cambridge, Maryland 21613
(301) 228-8200

Areas of research interest: Systems ecology; ecosystem modeling; nutrient dynamics of estuaries; submerged aquatic vegetation communities; estuarine food chains; natural resource economics; microcosm research.

Recent relevant publications:

Turbulence and phytoplankton diversity: A general model of the "Paradox of plankton". Ecol. Modeling 7:201-222. 1979. (with W. Mitsch).

KEMP, W. MICHAEL (Continued)

Microcosms, macrophytes and hierarchies: Environmental research on Chesapeake Bay. In: Microcosms in Ecological Research, J. P. Giesy (ed.). ERDA Symp. Ser. (In press). 1980.

Towards canonical trophic aggregations. Amer. Naturalist 114:000-000 (in press). 1979. (with R. E. Ulanowicz).

Influence of biological and physical processes on dissolved oxygen dynamics in an estuarine system: Implications for measurements of community metabolism. Est. Coastal Mar. Sc. (In press). 1980. (with W. R. Boynton).

Benthic nutrient fluxes in the sediment trap portion of the Patuxent estuary. In: Estuarine Perspectives, Academic Press (V. Kennedy, ed.). 1980. (with W. R. Boynton and C. Osborne).

104. KENNEDY, VICTOR S.
Horn Point Environmental Laboratories
University of Maryland
P. O. Box 775
Cambridge, Maryland 21613
(301) 228-8320

Areas of research interest: Benthic ecology - clam and oyster biology, environmental alteration.

Recent relevant publications:

Predation upon Crassostrea virginica (Gmelin) larvae by two invertebrate species common to the Chesapeake Bay oyster bars. Veliger 22:78-84. 1979. (with P. D. Steinberg).

Reproduction in Mytilus edulis aoteanus and Aulacomya maoriana (Mullusca: Bivalvia) from Taylors Mistake, New Zealand. N.Z.Journal of Mar. Fresw. Res. 11(2):255-267. 1977.

Arsenic concentrations in some co-existing marine organisms from Newfoundland and Labrador. J. Fish. Res. Bd. Canada 33:1388-1393. 1976.

Mercenaria mercenaria (Mollusca:Bivalvia): Temperature-time relationships for survival of embryos and larvae. Fish. Bull. 72(4):1160-1166. 1974. (with W. H. Roosenburg, M. Castagna and J. A. Mihursky).

105. KILCH, LINDA ROBINSON
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Estuarine water quality assessment, managing and modeling; chemical oceanography; effects of heavy metals and nutrients in the estuarine and marine environment.

Recent relevant publications:

The Effect of Selected Concentrations of Selenium Dioxide on the Acute toxicity of Mercuric Chloride to the Fathead Minnow (Pimephales promelas Rafinesque), unpublished M. S. Thesis, Tennessee Technological Univ., August 1976.

Hydrography and Hydrodynamics of Virginia Estuaries, Part XV. Mathematical Model Studies of Water Quality of the Nansemond Estuary. VIMS Spc. Rept. 152. 1977. (with A. Y. Kuo).

Field and Modeling Studies of Water Quality in the Nansemond River. VIMS SRAMSOE No. 133. 1977. (with B. J. Neilson).

Determination of a Nitrogen-Phosphorus Budget for Bayou Texas, Pensacola, Florida. Florida Water Resources Research Center, Pub. 29. 1974. (with G. A.Moshiri, D. Brown, P. Conklin, D. Gilbert, M. Hughes, M. Moore, D. Ray, and L. Robinson).

106. KLAUNIG, JAMES E.
Department of Pathology
University of Maryland, School of Medicine
10 S. Pine Street
Baltimore, Maryland 21201
(301) 528-7276

Areas of research interest: Environmental and comparative pathobiology; mammalian and teleost liver cell culture; experimental and environmental carcinogenesis

Recent relevant publications:

Comparison and acute response to PCB in liver of rat and channel catfish: A biochemical and morphologic study. J. of Toxicol. & Environ. Health, 4:107-121. 1978. (with M. M. Lipsky and D. E. Hinton).

PCB-induced alteration in teleost liver: A model for environmental disease in fish. Marine Fisheries Review, 40:47-50. 1978. (with D. E. Hinton and M. M. Lipsky).

KLAUNIG, JAMES E. (Continued)

Biochemical and ultrastructural changes in teleost liver following subacute exposure to PCB. J. Environ. Path. Tox. 2(4):953-963. 1979. (with M. Lipsky, B. Trump and D. Hinton).

Chemical carcinogenesis in fish: Induction of hepatic drug metabolizing enzymes and bacterial mutagenesis with polycyclic aromatic hydrocarbons (PAH). Proceedings of the Intn'l Workshop on Polycyclic Aromatic Hydrocarbons in the Marine Environment. (In press). 1979. (with D. Hinton, M. Lipsy, R. Jack, M. Kahng, H. Sanefuji, R. Jones and B. Trump).

Carcinogen metabolism in liver MFOS of channel catfish Ictaluris punctatus resulting in macromolecular binding and bacterial mutagenesis. Amer. Soc. Testing & Materials (In press). 1979. (with D.Hinton, R. Jack, M. Lipsky and B. Trump).

107. KOHLENSTEIN, LAWRENCE C.
Applied Physics Laboratory
Johns Hopkins Road
Laurel, Maryland 20810
(301) 792-7888, X 3712

Areas of research interest: Environmental impact of energy facilities; fish population dynamics

Recent relevant publications:

Aspects of the Population Dynamics of Striped Bass (Morone saxatilis) Spawned in Maryland Tributaries of the Chesapeake Bay. Draft Ph.D. Disseration, Johns Hopkins University (also PPSE-T-14). 1979.

On the Proportion of the Chesapeake Bay Stock of Striped Bass that Migrates into the Coastal Fishery. Proceedings of session on advances in striped bass life history and poulation dynamics, 108th Annual Meeting, Amer. Fisheries Society, August 22, 1978. 1978

Prediction of Entrainment and Impingement Impact for Striped Bass Eggs and Larvae by the Proposed Vienna Unit No. 9, JHU PPSE 8-1. 1979. (with E. M. Portner).

108. KRAEUTER, JOHN N.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

KRAEUTER, JOHN N. (Continued)

Areas of research interest: Invertebrate zoology; systematics of scaphopod mollusca; marine benthic ecology; zoogeography of East Coast marine faunas.

Recent relevant publications:

Biodeposition by salt marsh invertebrates. Mar.Biol. 35(3):215-223. 1976.

Additions to the Pycnogonida of Georgia. Bonn. zool. Beitr. 27:336-346. 1976. (with F. Krapp).

Mercenaria culture using stone aggregate for predator protection. Proc.National Shellfish Assoc. 67:1-6. 1977 (with M. Castagna).

An analysis of gravel, pens, crab traps and current baffles as protection for juvenile hard clams, Mercenaria mercenaria. Proc. of the 8th Annual Meeting of the World Mariculture Society, pp. 581-592. 1977. (with M. Castagna).

Class Pycnogonida. In An Annotated Checklist of the Biota of the Coastal Zone of South Carolina. 1978. (with D. R. Calder).

109. KRANTZ, GEORGE E.
Horn Point Environmental Laboratories
University of Maryland
P. O. Box 775
Cambridge, Maryland 21613
(301) 228-8204

Areas of recent research: Fish biology, shellfish and fish culture, molluscan biology

Recent relevant publications:

An analysis of oyster hatchery production of cultched and cultchless oysters utilizing linear programming optimization techniques. Proc. Nat'l Shellfish Assn. (in press). (with F. Lipschultz).

Blue crab predation on cultchless oyster spat. Proc. Nat'l Shellfish Assn. (in press). (with J. V. Chamerlin).

An epizootic of "Dermo" disease in the Maryland portion of the Chesapeake Bay. Proc. Nat'l Shellfish Assn, Vol 67. June 1977. (with S. V. Otto).

An analysis of trends in oyster spat set in the Maryland portion of the Chesapeake Bay. Proc. Nat'l Shellfish Assn 67:53-59. 1976. (with D. Meritt).

Serological and biochemical differentiation of populations of striped bass in Chesapeake Bay. Trans.Amer.Fish.Soc. 102(1):21-32. 1973. (with T.S.Y. Koo and R. P. Morgan).

110. KUO, ALBERT YI-SHUONG
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Mathematical models, turbulent diffusion and transport processes; dynamic oceanography, nearshore circulation and estuarine hydrodynamics.

Recent relevant publications:

Water Quality Models of Back and Poquoson Rivers, Virginia. VIMS Spec. Rept. in Appl. Mar.Sc. and Ocean Eng. No. 144. 1977. (with P. V. Hyers and B. J. Neilson).

Modeling Sediment Movement in the Turbidity Maximum of an Estuary. Bulletin 111, VA Water Resources Research Center, VA Polytechnic Institute. 1978. (with M. Nichols and J. Lewis).

Mathematical Models of Water Quality in Tidal Estuaries. J. of Chinese Agricultural Engineering, Vol. 24, No. 2. 1978.

A Mathematical Model Study of Water Pollution in Irrigation-Drainage Canal. J. of Chinese Agricultural Engineering, Vol. 24, No. 4. 1978. (with Y. P. Hsu and M. J. Horng).

Manual of Water Quality Models for Virginia Estuaries. VIMS Spec. Rept. No. 214. 1979. (with P. Hyer and C.Fang).

111. LAWSON, THOMAS B.
Agricultural Engineering Department
University of Maryland
College Park, Maryland 20742
(301) 454-3901

Areas of research interest: Water resources, water quality, waste treatment hydrology.

Recent relevant publications:

Purification of Fish Culture Wastewater by Foam Fractionation. Paper presented at Winter Meeting ASAE, Chicago. 1978. (with F. W. Wheaton).

Foam Fractionation Applied to Aquacultural Systems. Paper presented to World Mariculture Society, Honolulu. 1979. (with F. W. Wheaton and K. M. Lomax).

112. LENTZ, JOHN J.
Applied Physics Laboratory
Johns Hopkins Road
Laurel, Maryland 20810
(301) 792-7800, X 3715

Areas of research interest: Cooling tower operation, groundwater and surface water hydrology, dredging

Recent relevant publications:

Mitigation of Evaporative Losses During Droughts, Water Systems '79 . Proceedings of the ASCE Water Resources Planning and Management Division Specialty Conference, Houston, February 1979. pp. 155-156.

Thermal Behavior of Natural Draft Cooling Tower. JHU/APL PPSE T-11, 1978 (PB 297-557/AS).

113. LINDER, HARRIS J.
Department of Zoology
University of Maryland
College Park, Maryland 20742
(301) 454-5450

Areas of research interest: Sex differentiation and gametogenesis in the Chesapeake Bay sea nettle, Chrysaora quinquecirrha; influence of eyestalk ablation on oocyte maturation and shell gland development in the brine shrimp Artemia

Recent relevant publications:

Anatomy and physiology of the Chesapeake Bay sea nettle (unpublished).

114. LIPSKY, MICHAEL M.
Department of Pathology
University of Maryland, School of Medicine
10 S. Pine Street
Baltimore, Maryland 21201
(301) 528-7276

Areas of research interest: Mechanisms of chemical carcinogenesis; environmental carcinogenesis, carcinogenesis in aquatic species. Interspecies comparisons of mixed function oxidase system. Methods of testing. Development of markers for premalignant tissues.

LIPSKY, MICHAEL M. (Continued)

Recent revelant publications:

Comparison of acute response to polychlorinated biphenyls in liver of rat and channel catfish: A biochemical and morphological study. J. Toxicol. Env. Health, 4:107-121. 1978. (with J. Klaunig and D. Hinton).

PCB-induced alterations in teleost liver: A model for environmental disease in fish. Marine Fisheries Review, 40:47-50. 1978. (with D. Hinton, and J. Klaunig).

Biochemical and ultrastructural changes in teleost liver following subacute exposure to PCB. J. Environ. Path. Toxicol. 2:953-963. 1979. (with J. Klaunig, B. Trump and D. Hinton).

Iron negative foci and nodules in safrole-exposed mouse liver made siderotic by iron-dextran injection. Path. Research and Practice, 164:175-185. 1979. (with D. Hinton, J. Klaunig, P. Goldblatt, and B. Trump).

Opposite effects of theenvironmental pollutant lead (Pb) in kidney and liver of rats. Bull. Environ. Contamination & Toxicol. 23:466-469. 1979. (with D. Hinton, B. Heatfield and B. Trump).

115. LOESCH, JOSEPH G.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Fisheries, biostatistics and population dynamics.

Recent relevant publications:

The effect of Tropical Storm Agnes on oysters, hard clams, soft clams, and oyster drills in Virginia. Pages 488-508 in The Effects of Tropical Storm Agnes on the Chesapeake Bay Estuarine System. CRC Pub. No. 54. 1977. (with D. Haven, W. Hargis, and J. Whitcomb).

Assessment of surf clam stocks in nearshore waters along the Delmarva Penninsula and in the Virginia fishery south of Cape Henry. Proc. Nat. Shellfish Assoc. 67:29-34. 1977 (with J. Ropes).

LOESCH, JOSEPH G. (Continued)

Useable meat yields in the Virginia surf clam fishery. Fish. Bull. 75(3): 640-642. 1977.

Status and distribution of alosine stocks in the Chesapeake Bay. Pages 27-72 in Proceedings of a Workshop on American Shad. December 1976. (with W. Kriete).

A contribution to the life history of the blueback herring, Alosa aestivalis (Mitchill). Trans. Amer. Fish. Soc. 106(6):583-589. 1977. (with W. Lund, Jr.).

116. LUCY, JON A.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: marine recreation

Recent relevant publications:

Summary of Virginia Marine Trades Seminar, April 1976. Virginia Institute of Marine Science Sea Grant Advisory No. 12, 4 p. 1976.

Dry Stack Storage -- A Promising Marina Alternative. Virginia Institute of Marine Science Sea Grant Advisory No. 13, 6 p. 1977.

Harborfest '79 Norfolk, Virginia: An analysis of patrons and their expenditures. Spec. Rep. in Applied Mar. Sci. and Ocean Eng. No. 226, Virginia Institute of Marine Science Sea Grant Program, College of William and Mary, 25 p. 1979. (with S. Baker).

The Chesapeake Bay: A boating guide to weather. VIMS Educ. Ser. No. 25, Virginia Institute of Marine Science Sea Grant Program, College of William and Mary, 20 p. 1979. (with T. Ritter and J. LaRue).

117. LUKENS, ROBERT JAMES
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Electrical engineering; computer science

Recent relevant publications:

Comparison of the Accuracies of Various Continuous-Recording Current Meters for Offshore Use. 7th Annual Proceedings of Offshore Technology Conference, Dallas, 1975. (with E. Brainard).

Verficiation of an Unsteady Analytical Hydraulic and Thermal Model of Conowingo Pond and its Use in Predicting Ambient Temperatures. 11th Annual Meeting of the IEEE Conf. on Engineering in the Ocean and the Marine Techno. Soc. pp 944-952. 1975. (with E. Brainard).

118. LYNCH, MAURICE P.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Management of marine and estuarine resources with special emphasis on management/research interactions and communications; coastal zone management, physiology of estuarine organisms.

Recent relevant publications:

Variations in serum constitutents of the blue crab, Callinectes sapidus: chloride and osmotic concentration. Comp. Biochem. Physiol. 44A:719-734. 1973. (with K. Webb and W. Van Engel).

Variations in serum constituents of the blue crab, Callinectes sapidus: Free amino acids and total ninhydrin positive substances. Comp. Biochem. Physiol. 45B:407-418. 1973. (with K. Webb).

The use of physiological indicators of stress in marine invertebrates as a tool for marine pollution monitoring. Pp. 881-890 in National Needs and Ocean Solutions. Marine Technological Society. 1974.

Local environmental management. Can it work? A case study of the Virginia wetland law. Coastal Zone Management Journal 4:127-150. 1978. (with J. Jones).

Data importance in relation to Chesapeake Bay pollution. CODATA Bulletin 29:41-49. Intn'l Council of Scientific Unions. 1978. (with L. Cronin, and M. Karweit).

119. MAC INTYRE, WILLIAM G.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Nutrients in estuaries, electrolytic solution chemistry, sediment trace analysis.

Recent relevant publications:

Effects of Tropical Storm Agnes on Nutrient Flux and Distribution in Lower Chesapeake Bay. Johns Hopkins Univ. Press. 1974. (with C. L. Smith, and C. A. Lake).

Adsorption of Phosphate and Polyphosphate by Clay Minerals and Estuarine Sediments. Bull. Water Resources Res. Center, V.P.O., No. 108. 1977. (with C. A. Lake).

Isolation and Characterization of Humic Acid from Estuarine and Marine Sediments. In preparation. 1977. (with J. G. Windsor).

Hydrocarbon distribution and concentration. Section I, Chapter 9, in Middle Atlantic outer continental shelf environmental studies, Vol. IIB, Chemical and Biological Benchmark Studies. VIMS SRAMSOE No. 178. 1977. (with C. L. Smith and C. W. Su).

Hydrocarbon distribution and concentration. Section I, Chapter 14 in Middle Atlantic outer continential shelf environmental studies, Vol. IIC , Chemical and Biological Benchmark Studies. VIMS SRAMSOE No. 202. 1979. (with C. L. Smith and C. W. Su).

120. MARBURY, DEAN
Horn Point Environmental Laboratories, UMCEES
P.O. Box 775
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(301) 228-8200

Areas of research interest: estuarine nutrient cycling

121. MARGULIES, TIMOTHY S.
Applied Physics Laboratory
Johns Hopkins Road
Laurel, Maryland 20810
(301) 792-7800

Areas of research interest: Risk assessment,facility siting, nuclear safety.

Recent relevant publications:

Perryman Site Population Distribution. JHU/APL Report PPSE-2-3, Nov. 1977.

Calculation of Potential Radiological Effects from an Accidental Release of theThree Mile Island Nuclear Generating Station. JHU/APL Report CPE-7902, April 3, 1977.

Evaluation and Comparison of High Population Density Sites. Trans. Am. Nuc. Soc. November 1979.

Cove Point Liquefied Natural Gas Terminal Operations, A Preliminary Review of the Risk, JHU/APL Report, PPSE-T-13, February 1979 (Draft).

Multiobjective Regional Energy Location Model: Cost Versus Population Proximity Tradeoffs, Trans. Am. Nuc. Soc., November 1979.

122. MARKS, COLIN H.
Mechanical Engineering Department
University of Maryland
College Park, Maryland 20742
(301) 454-2408

Areas of research interest: Fluid mechanics - vehicle drag, bubble convection, mechanical equipment design

Recent revelant publications:

Feasibility of Active Boundary-Layer Control Methods for Reducing Aerodynamic Drag on Tractor Trailer Trucks. Journal of Industrial Engineering, Vol. 2, No. 6. 1979. (with F. T. Buckley, Jr.)

123. MARTIN, F. DOUGLAS
University of Maryland
Center for Environmental & Estuarine Studies
Chesapeake Biological Laboratory
Solomons, Maryland 20688
(301) 326-4281

Areas of research interest: Ichthyology, systematics and ecology of early developmental stages of fishes.

Recent relevant publications:

Thermal studies on tropical marine ecosystems in Puerto Rico. Proceed. Int'l AEC, 1974: IAEC-SM-187/14; 9 p. (with S. Kolehmainen and P. B. Schroder

Development of fishes of the Mid-Atlantic Bight: An atlas to egg, larval and juvenile Stages, VOl VI. Stromateidae through Ogcocephalidae FWS/OBS-78/12. Office of Biological Services, US Fish & Wildlife Service. 416 pp. (with G. E. Drewry).

Development of fishes of the Mid-Atlantic Bight: An atlas to egg, larval and juvenile stages, Vol I. Acipenseridae through Ictaluridae. FWS/OBS-78/12. Office of Biological Services, U.S. Fish and Wildlife Service. 366 pp. (with P. W. Jones and J. D. Hardy, Jr.)

An annotated key to the teleost fishes of Puerto Rico. Accepted for publication by Bull. Fla, State Museum. 1978. (with J. W. Patus).

Histologic and morphometric criteria for assessing starvation in larval striped bass, Morone saxatilis. In: Proceed. of 4th Annual Larval Fish Workshop(L. Fuiman,ed.). (In press). (with R. Malloy).

124. MC CUEN, RICHARD H.
Department of Civil Engineering
University of Maryland
College Park, Maryland 20742
(301) 454-3725

Areas of research interest: Hydrologic modeling, urban hydrology, wildlife habitat evaluation, remote sensing, stormwater management, engineering ethics, statistical methods in hydrology, dam safety, urban water use, water quality, flood frequency analysis.

Recent relevant publications:

Water Quality Projections: A Pre-improvement Case Study. Water Resources Bulletin. 1979. (with D. E. Cook and R. L. Powell).

Stormwater Management Policy and Design. Journal of Civil Engineering Design, Vol 1(1). 1979.

A Methodology for Assessing Wildlife Habitat. Journal for Ecological Modeling, Vol 2. 1976. (with G. Whitaker).

Channel Modification and Macroinvertebrate Community Diversity in Small Streams, Water Resources Bulletin. 1979. (with G. Whitaker and J. Brush).

Water Quality Trap Efficiency of Stormwater Management Basins. Water Resources Bulletin. 1979.

125. MC NICHOL, LORE A.
Microbiology Department
University of Maryland
College Park, Maryland 20742
(301) 454-6699

Areas of research interest: Plasmid incidence and genetic exchange in environmental bacteria.

Recent relevant publications:

Isolation of drug-resistant Aeronomas hydrophila from the natural environment. Antimicrob.Agts. Chemother, in the press. 1979. (with J. B. Kaper, H. A. Lockman, E. F. Remmers, W. M. Spira, M. J. Voll and R. R. Colwell).

R-factor carriage in a Group F vibrio isolated from Bangladesh waters. Antimicrob. Agts. Chemother., in the press. 1979. (with J. B. Kaper, H. A. Lockman, E. F. Remmers, W. M.Spira, M. J. Voll and R. R. Colwell).

MC NICHOL, LORE A.(Continued)

Plasmids in environmental isolates of Aeromonas hydrophila. Can J. Microbiol., in the press. 1979. (with T. Barkay and R. R. Colwell).

Isolation of O1 and non-O1 Vibrio cholerae from estuaries and brackish water environments. 15th Jt. Conf. on Cholera, US-Japan Coop Med. Sci. Prog., in the press. 1979. (with R. R. Colwell, R. Seidler, J. Kaper, M. J. Voll, S. Garges, H. Lockman, D. Maneval, E. Remmers, S. W. Joseph, M. Bradford, N. Roberts, I. Huq and A. Huq.)

Kanagawa negative mutants of Vibrio parahemolyticus associated with amino acid auxotrophy. Inf. Imm., in the press. 1979. (with D. Burstyn and M. J. Voll).

126. MEANS, JAY C.
University of Maryland
Center of Environmental and Estuarine Studies
Chesapeake Biological Laboratory
Solomons, Maryland 20688
(301) 326-4281

Areas of research interest: Trace organic pollutants in environment; genetic toxicology.

Recent relevant publications:

Recent advances in the instrumental analysis of lipids. Rev. Fr. Crops Gras 24:73-84. 1977. (with E. G. Perkins and M. F. Picciano).

Sorption properties of energy-related pollutants and sediments.In: Polynuclear aromatic hydrocarbons(P.W. Jones and P. Leber, eds.), pp. 327-340. Ann Arbor Sci., Ann Arbor. 1979. (with J. J. Hassett, S. Wood and W. Banwart).

Sorption of acetophenone by sediment and soils. Soil Sci. 128:297-312. 1979. (with A. Khan, J. J. Hassett, W. L. Banwart and S. G. Wood).

Sorption of benzidine by sediment and soil. Soil Sci(In press). (with D. Zierath, J. J. Hassett, W. L. Banwart and S. G. Wood).

Sorption properties of polynuclear aromatic hydrocarbons and sediments: Heterocyclic and substituted compounds. In: Polynuclear aromatic hydrocarbons: Chemistry, Biology, Carcinogenesis and Mutagenesis (A. Borseth and P. W. Jones, eds.). (In press). (with J. J. Hassett, S. G. Wood, W. L. Banwart, S. Ali and A. Kahn).

127. MERRINER, JOHN VENNOR
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Ecology and aquaculture of estuarine and marine fishes; distribution and ecology of ichthyoplankton; response of fishes to pollutant stress; power industry impact upon ichthyoplankton - sampling gear efficiency and strategies.

Recent relevant publications:

The occurrence of ladyfish, Elops saurus, larvae in low salinity waters and another record for Chesapeake Bay. Estuaries 1:205-206. 1978. (with J. J. Govoni).

History and Management of the spotted Sea Trout fishery. In: Sciaenid Colloquim AS/GSMFC Proceedings of meeting, Tampa (in press). 1978.

Depuration of Kepone by Atlantic Croaker in a laboratory study. Proceeding SE Assn. Game and Fish Comm. (in press). 1978. (with R. T. Doyle and M. E. Bender).

Deterioration of Floy FD-67 internal anchor tags. Proceedings SE Assn. Game and Fish Comm. (in press). 1978. (with M. Y. Hedgepeth and W. H. Kriete, Jr.).

Movement of 1970 yearclass striped bass between Virginia, New York and New England. Proceedings SE Assn. Game and Fish Comm. (in press). 1978. (with W. H. Kriete, Jr. and H. M. Austin).

128. MEYER, JAMES H.
Johns Hopkins University
Applied Physics Lab
Johns Hopkins Road
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(301) 953-7100, X 3716

Areas of research interest: Atmospheric dispersion of gases and particulates, meteorological instrumentation, meso and microscale meteorological effects, and climatology.

MEYER, JAMES H. (Continued)

Recent relevant publications:

Fluorescent Dye, A Novel Technique to Trace Cooling Tower Drive. Proc. 4th Jt. Conf. on Sensing of Environmental Pollutants, November 1977. pp. 618-623. (with W. D. Stanbro).

Separation of Chalk Point Drift Sources Using a Fluorescent Dye. Proc. Cooling Tower Environment, 1978, a Symposium on Environmental Effects of Cooling Tower Emissions, University of Maryland, pp. III-83-104. (with W. D. Stanbro).

Mechanical Draft Cooling Tower Visible Plume Behavior: Measurements, Models, Predictions. Cooling Tower Environment - 1974. Proceed. of a Symposium, ERDA Symposium Series, NTIS CONF-740302, 307-352. 1975.

Cooling Tower Drift Dye Tracer Experiment, June 16 and 17, 1977. JHU/APL PPSP-CPCTP-16, Vol.2, August 1977. (with W. D. Stanbro).

129. MIHURSKY, JOSEPH A.
University of Maryland
Center for Environmental and Estuarine Studies
Chesapeake Biological Laboratory
Solomons, Maryland 20688
(301) 326-4281

Areas of research interest: Pollution ecology; population and community dynamics of coastal systems; temperature effects on estuarine/marine organisms; regional planning; regional energetic analysis.

Recent relevant publications:

An analysis of 1974 striped bass spawning success in the Potomac Estuary. In: Estuarine Processes (M. Wiley, ed.), Vol. 1, Academic Press, New York, pp 151-165. 1976. (with T. Polgar, R. E. Ulanowicz, R. P. Morgan and J. S. Wilson).

Thermal discharges and estuarine systems. In: Proceedings, USEPA Conf. "Estuarine Pollution Control and Assessment", Washington, D.C. 1977. pp. 341-357.

Identification and description of macrofaunal benthic communities in the Calvert Cliffs regions of the Chesapeake Bay. Ches. Sc. 18:360-369. 1977. (with N. K. Mountford, and A. F. Holland).

Regional energetic coupling of man and his environment - Data requirements. In: Application of remote sensing to the Chesapeake Bay Region, Vol. II (W. T. Chen et all, eds.). NASA Conf. Publ. 6, pp 157-75. 1978. (with W. R. Boynton, W. M. Kemp, M. Homer and G. Unger).

MIHURSKY, JOSEPH A. (Continued)

Major features of ichthyoplankton populations in the upper Potomac Estuary, 1974-76. In: Early life history of fish synposium, Vol II (Sherman & Lasker, eds.), (In Press). (with E. M. Setzler, K. V. Wood, W. R. Boynton, T. T. Polgar and G. E. Drewry).

130. MILLER, ROBERT E.
Horn Point Environmental Laboratories
P. O. Box 775
Cambridge, Maryland 21613
(301) 228-8200

Areas of research interest: Blue crab (Callinectes sapidus) population dynamics, ecology, larval development and distribution.

Recent relevant publications:

Comparison of sampling devices for juveniles of the blue crab, Callinectes sapidus Rathbun. Fish. Bull. (in press).

Composition and seasonal abundance of the blue crab, Callinectes sapidus Rathbun, in the Chesapeake and Delaware canal and adjacent waters.

Modified commercial crab and oyster dredges as sampling devices for the blue crab Callinectes sapidus Rathbun. 1975. Ches. Sci. 16(1) 137-139.

Induced winter spawning and culture of larvae of the blue crab Callinectes sapidus Rathbun. Aquaculture 8:103-113. 1976.

131. MOON, MILTON L
Applied Physics Laboratory
Johns Hopkins Road
Laurel, Maryland 20810
(301) 792-7800, X 3173

Areas of research interest: Environment and energy

Recent relevant publications:

Modeling Analysis of the Chalk Point Cooling Tower Dye Tracer Experiment. JHU/APL Cooling Tower Symposium, May 2-4, 1978, p III-119. (with E. A. Davis).

Overview of the Chalk Point Cooling Tower Project, 1972-1979. JHU/APL CPCTP-27, March 1979.

The Chalk Point Cooling Tower Program. ANS Proceedings, December 1976, p. 176.

132. MORGAN, R. P.,II
Appalachian Environmental Laboratory
Center for Environmental and Estuarine Studies
University of Maryland
Frostburg State College Campus - Gunter Hall
Frostburg, Maryland 21532
(301) 689-3115

Areas of research interest: Biochemical systematics; pollution ecoloy; physiological ecology.

Recent relevant publications:

Genetic variation in the soft-shelled clam (Mya arenaria). Estuaries 1(4):255-258. 1978. (with S. B. Block, N. Ulanowicz and C. Buys).

Biochemical changes during larval development of the Xanthid crab, Rhithropanopcus harrissi. III. Isozyme changes during ontogeny. Mar. Biol. 43(3):223-226. 1978. (with E. Kramarsky and S. Sulkin).

The absence of carbrohyrates specific hepatic receptors for serum glycoproteins in fish. In Carbohydrate-Protein Interaction. ACS Symposium Series 88, Am. Chem. Soc. Washington, pp. 181-185. 1979. (with G. Ashwell).

Polychlorinated biphenyls in Baltimore Harbor sediments. Bull. Envir. Contam. Toxicol. 22:(405):413:419. 1979. (with S. E. Sommer).

Biochemical identification of mallard-black duck hybrids through a breeding program and in nature. Trans. NE Sect. Wildlife Soc. 35:225-236. 1978. (with D. W. Meritt, S. B. Block, M. A. Cole, S. T. Sulkin and F. B. Lee).

133. MUNDAY, JOHN CLINGMAN, JR.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Remote sensing of environment, water quality, coastal circulation, oil pollution, algal photosynthesis, resource monitoring.

Recent relevant publications:

Membrane potentials in Bryopsis plumosa. Botanica Marina, 15:61-63. 1971.

Chromaticity changes from isoluminous techniques used to enhance multi-spectral remote sensing data. Remote Sensing of Environment, 4:221-236. 1975. (with T. T. Alfoldi).

MUNDAY, JOHN CLINGMAN, JR. (Continued)

Water quality analysis by digital chromaticity mapping of Landsat data. Canadian Journal of Remote Sensing 4(2):108-126. 1978. (with T. T. Alfoldi).

Outfall siting with dye-buoy remote sensing of coastal circulation. Photogram. Eng. and Remote Sensing, 44(1):87-96. 1978. (with C. S. Welch and H. H. Gordon).

Landsat test of diffuse reflectance models for aquatic suspended solids measurement. Remote Sensing of Environment, 20 pp., in press. 1979. (with T. T. Alfoldi).

134. MUSICK, JOHN A.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Ichthyology; fisheries science.

Recent relevant publications:

Submitted for Publ. Seasonality and the Distribution, Availability, and Composition of Fish Assemblages in Chesapeake Bight. Fish. Bull. (with J. A. Colcocoresses and E. J. Foell).

Fishes. In Rare and Endangered Biota of Virginia, Linzey, ed. VA Polytechnic Inst. and St. U., Blacksburg. (In press). (with R. E. Jenkins).

The role of deep-sea organisms in monitoring environmental pollutants. Int'l Workshop on monitoring environmental materials and specimen banking, Berlin. (In press).

Sea Turtles. In Rare and Endangered Biota of Virginia, Linzey, ed. VA. Polytechnic Inst. and St. U., Blacksburg. (In Press).

Demersal fishes of an abyssal radioactive dump site. Final contract report submitted to EPA. 30 pp. 1979. (with K. Sulak).

135. NEILSON, BRUCE JOHN
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 624-2111

Areas of research interest: Descriptive analysis of estuarine circulation; water quality management of estuaries; modelling of physical and biological processes; engineering design for mariculture systems.

Recent relevant publications:

Recreation Dynamics of Reservoir Destratification. Journal Amer. Water Works Assn., Vol. 66, No. 10, pp. 617-620. October 1974.

A Mathematical Approach to Depuration. Proceedings of Nat'l Shellfisheries Assn. (In Press).

Exploiting Natural Oyster Populations Through Waste Heat Utilization. Conf. on Waste Heat Management and Utilitization, May 9-11, 1976.

A Layman's Guide to Models of the Tidal Waters of Virginia. VIMS Spec. Rep. No. 150. March 1977.

Bacterial Depuration by the American Oyster (Crassostrea virginica) under Controlled Conditions. Vol. II, Practical Considerations and Plant Design. VIMS Spec. Sc. Report #88. May 1978. (with D. S. Haven, F. O. Perkins, R. Morales-Alamo and M. W. Rhodes).

136. NEWELL, ROGER I.E.
Horn Point Environmental Laboratories
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Cambridge, Maryland 21613
(301) 228-8200

Areas of research interest: adaptive ecophysiology of marine invertebrates, especially bivalve molluscs

Recent relevant publications:

Physiological measurements on estuarine bivalve molluscs in the field. In: Biology of benthic organisms, proceedings of the 11th European Symposium of Marine Biology (B.K. Keegan, P.O'Ceidigh and P.J.S. Boaden, eds.), pp. 57-68. Pergamon Press. 1977. (with B.L. Bayne and J. Widdows)

Seasonal changes in the physiology, reproductive condition and carbohydrate content of the cockle Cardium (= Cerastoderma) edule L. Marine Biology. 1979. (in press) (with B.L. Bayne)

NEWELL, ROGER I.E. (continued)

Some effects of temperatures on the physiology of the cockle Cardium (= Cerastoderma) edule L. (Bivalvia, Cardiidae). J. Mar. Biol. Ass., U.K. (submitted).

The maintenance of an aminopeptidase allele frequency cline by natural selection. Submitted to the Proceedings of the American National Academy of Science. (with R.K. Koehn and F. Immermann)

137. NICHOLS, MAYNARD

Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Geological oceanography

Recent relevant publications:

Response and Recovery of an Estuary from River Flooding. Journ. Sed. Petrology 16, p 1171-1181. 1977.

Modeling of Sediment Movement in the Turbidity Maximum. Bull 111, VA. Water Resources Research Center, 76 pp. 1977. (with A. Kuo).

Fluid Mud Dredged Material: Its Physical Nature and Dispersal. WES Tech. Rept. D-78-40. 1978. (with R. Faas and G. Thompson).

The Problem of Misplace Sediment. In: Ocean Dumping and Marine Pollution, Palmer and Gross, ed. Dowden, Hutchinson and Ross, pp. 147-161. 1978.

Sedimentary processes in Coastal Lagoons. UNESCO Papers in Marine Science, forthcoming. 1979. (with G. Allen).

138. NORTON, VIRGIL J.
Department of Agriculture and Resource Economics
University of Maryland
College Park, Maryland 20742
(301) 454-3802

Areas of research interest: Environmental and commercial fisheries; coastal zone management.

Recent revelant publications:

The Role of Market Value Models in Evaluating Commercial Fishery Resources. Am. Journal of Agricultural Economics. 1978. (with C. C. Harris, Jr.)

Distributional Implications of Extended Fisheries Jurisdiction: Some Policy and Research Issues. Am. Journal of Agri. Economics, Vol. 59, No. 5, December 1977. (with D. L. Hueth).

The Management of Foreign Fishing. Economic Impacts of Extended Fisheries Jurisdiction, Ann Arbor Publishers. 1977. (with L. Vidaeus).

Economic Evaluation of Marine Recreation Fishing: A Review. Marine Recreational Fisheries. 1976. (with K. McConnell).

Scientific and Economic Data Needs for Extended Fisheries Jurisdiction. Transactions of the N. Amer. Wildlife and Natural Resources Conf. 1975.

139. OATES, WALLACE E.
Department of Economics
University of Maryland
College Park, Maryland 20742
(301) 454-6306

Areas of research interest: Environmental policy; state and local government finance.

Recent relevant publications:

The Theory of Environmental Policy. Prentice-Hall. 1975. (with W. Baunial).

Economics, Environmental Policy and the Quality of Life. Prentice-Hall. 1979. (with W. Baunial).

Fiscal Federalism. Harcourt Brace Jovanovich. 1972.

140. OLNEY, JOHN E.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Taxonomy and ecology of marine zooplankton; taxonomy and early life history of marine fishes; ecology of estuarine zooplankton communities.

Recent relevant publications:

Description and occurrence of vexillifer larvae of Echiodon (Pisces, Carapidae) in the western North Atlantic and notes on other carapid vexillifers. Bull. Mar. Sc. 29(3):3650379. 1979. (with D. F. Markle).

Trachipteroid eggs in the western North Atlantic. Copeia 1980 (1). (with A.Naplin).

A description of the vexillifer larvae of Pyramodon ventralis and Synderidia canina (Pisces, Carapidae) with comments on classification. Pacific Science. In press. (with D. F. Markle).

Dragonet larvae (Pisces: Callionymidae) in plankton collections on the continental shelf and slope of the eastern United States. 57th Annual Meeting of A.S.I.H., Gainesville, June 1977. (with G. R. Sedberry).

Seasonal composition distribution and diel variation in ichthyoneuston collections from the Middle Atlantic Bight off New Jersey. In prep. (with G. C. Grant).

141. ORTH, ROBERT J.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Biology of seagrasses; wetlands ecology; marine and estuarine ecology.

Recent relevant publications:

Destruction of eelgrass, Zostera marina, by the cownose ray, Rhinoptera bonasus in the Chesapeake Bay, Virginia. Chesapeake Sc. 61:205-208. 1975.

The demise and recovery of eelgrass, Zostera marina, in the Chesapeake Bay, Virginia. Aquatic Botany 2:141-159. 1976.

The effect of Hurricane Agnes on the benthic fauna of eelgrass, Zostera marina, in the lower Chesapeake Bay. In The effects of Tropical Storm Agnes on the Chesapeake Bay estuarine system. pp 566-583. 1977.

ORTH, ROBERT J. (Continued)

The importance of sediment stability in seagrass communities. In Ecology of Marine Benthos (B. C. Coull, ed.). U. of South Carolina Press, pp. 281-2800. 1977.

Effect of nutrient enrichment on the growth of eelgrass, Zostera marina, in the Chesapeake Bay, Virginia. Mar. Biol. 44:187-194. 1977.

142. OTTO, ROBERT G.
Johns Hopkins University
Chesapeake Bay Institute
Baltimore, Maryland 21218
(301) 338-8260

Areas of research interest: Distributional ecology of aquatic organisms (fish); physiological ecology of fishes.

Recent relevant publications:

A Biochemical Method of Distinction of Striped Bass and White Larvae. Copeia. 2:340-343. 1978.

Swimming performance of juvenile menhaden (Brevoortia tyrannus). Trans. Am. Fish. Soc. 197:793-798. 1978. (with S. I. Hartwell).

Short Term Variability in Surface Catches of Ichthyoplankton in the Upper Chesapeake Bay. Estua. and Coastal Mar. Sc., Vol. 8:511-522. 1979. (with M. H. Conte and P. E. Miller).

Apparent Genetic Homogenity of Spawning Striped Bass (Morone saxatilis, Walbaum) in the Upper Chesapeake Bay. Tans.Am.Fish. Soc. In press. (with B. D. Sidell, D. A. Powers, M. Karweit and J. Smith).

Preliminary Studies of Responses of Fish to Complex Pharmaceutical and Petrochemical Wastes. In 1st Intn'l Symposium on Ocean Dumping. U. of Rhode Island. In press. (with S. I. Hartwell).

143. PATTERSON, GLENN W.
Department of Botany
University of Maryland
College Park, Maryland 20742
(301) 454-3812

Areas of research interest: Physiology of algae; nutritional aspects of lipids in marine organisms

PATTERSON, GLENN W. (Continued)

Recent relevant publications:

Sterols of scallop. Part I. Application of hydrophobic Sephadex derivatives to the resolution of a complex mixture of marine sterols. J. Chromatog. 115:153-159. 1975. (With M. W. Khalil and D. R. Idler).

Identification and phylogenetic implications of fatty acids and sterols in three genera of aquatic Phycomycetes. Am. J. Bot. 64:246-252. 1977. (with J. J. Motta and M. A. Southall).

A numerical taxonomy for classifying photosynthetic nannoplankton. Taxon. 26:497-505. 1977. (with S. D. Van Valkenburg and E. P. Karlander).

Marine Algae . In Encyclopedia of Marine Resources, pp 16-19. Van Nostrand-Reinhold Publishing Company. 1969.

Survey of chemical components and energy considerations . In The Marine Plant Biomass of the Pacific Northwest Coast, R. W. Krauss. Oregon State University Press. 1978.

144. PEMBERTON, DIXIE ANN
University of Maryland
Center for Environmental & Estuarine Studies
P. O. Box 775
Cambridge, Maryland 21613
(301) 228-8204

Areas of research interest: Transfer of environmental information and technology from scientists to appropriate user groups, i.e. citizen groups. environmental education and outreach.

Recent relevant publications:

Applications of Remote Sensing to the Chesapeake Bay Region and A Multidirectional Communications Model:. Proceedings, Vol. II. (also editor). 1978. Vol. I, Executive Summary (co-wrote; edited). NASA.

Ideas for a Citizens' Manual, and Final Project Report , two booklets printed for project: Educational Assistance to Local Planning Boards in the Coastal Zones of Maryland, Title I HEW funded. Printed and distributed through ERIC:1978.

User Needs Assessment (Vol. I), Communicating Needs through Planning and Budgeting Cycles(Vol.II), Research Management (Vol.III); Evaluation (Vol V.) Project title: Management Procedures for Transferring Ecological Information. US Fish and Wildlife Service. 1978-79.

Oakes College Conf. on Technology Innovation Report, funded by NSF. 1978.

145. PENHALE, POLLY A.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Primary productivity and nutrient cycling in marine systems.

Recent relevant publications:

Macrophyte-epiphyte biomass and productivity in an eelgrass (Zostera marina L.) community. J. Exp. Mar. Biol. Eco. 26:211-224. 1977.

Excretion of dissolved organic carbon by eelgrass (Zostera marina) and its epiphytes. Limnol. Oceangr. 22:400-407. 1977. (with W. Smith).

Relationship between productivity and N_2 (D_2H_2) fixation in a Thallasia testudinum community. Limnol. Oceanogr. 24:117-125. 1979. (with D. G. Capone, R. S. Oremland and B. F. Taylor).

Transport of carbon and excretion of dissolved organic carbon by leaves and roots/rhizomes in seagrasses and their epiphytes. Aquatic Bot. 6:149-158. 1979. (with R. G. Wetzel).

Uptake and transfer of carbon and phosphorus by eelgrass (Zostera marina L.) and its epiphytes. J.Exp. Mar. Biol. Ecol. In Pess.(With G. T. Thayer).

146. PERKINS, FRANK O.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Diseases of commercially significant marine organisms; identification and role of ultraplankton in Chesapeake Bay; cell biology of fungi and protozoa.

Recent relevant publications:

Dermocystidium marinum infection in oysters. Mar.Fish. Rev. 38:19-21. 1976.

A scanning electron microscope study of Urosporidium spisuli (Haplosporea) spores. Trans.Amer. Micros. Soc. 96:376-382. 1977. (with P. A. Madden and T. K. Sawyer).

Coliform depuration of Chesapeake Bay oysters. 10th Nat'l Shellfish Sanitation Workshop Proceedings (in press). 1978. (with D. Haven, R. Morales-Alamo and M. W. Rhodes).

PERKINS, FRANK O. (Continued)

Hematopoietic neoplasm in three Sydney Rock oysters. (Crassostrea commercialis, Ireland and Roughley) from New South Wales and Queensland. J. Nat. Cancer Inst. (In press). 1978. (with P. H. Wolf).

Cell structure of shellfish pathogens and hyperparasites in the genera Minchinia, Urosporodium, Haplosporidium, and Marteilia-taxonomic implications. In: Haplosporidan and Haplosporidan-like diseases of shellfish (F. O. Perkins, ed.). Mar. Fish. Rev. 41:25-37. 1979.

147. PFITZENMEYER, HAYES TODD, JR.
University of Maryland
Chesapeake Biological Laboratory
Solomons, Maryland 20688
(301) 326-4281

Areas of research interest: Molluscan biology; benthic ecology.

Recent relevant publications:

Summary of the biology of the bloodworm, Glycera dibranchiata. In: Water Quality Criteria and the Biota of the Chesapeake Bay (M. L. Wass). US Army Corps of Engineers, Baltimore, MD, pp 32-35. 1975.

Summary of the biology of the coot clam, Mulinia lateralis. In: Water Quality Criteria and Biolta of the Chesapeake Bay (M. L. Wass), pp. 36-38, US Army Corps of Engineers, Baltimore, MD. 1975.

Summary of the biology of the brackish water clam, Rangia cuneata. In: Water Quality Criteria and the Biota of the Chesapeake Bay (M. L. Wass), pp. 39-44, US Army Corps of Engineers, Baltimore, Maryland. 1975.

Applicability of the Chesapeake Bay hydraulic model for biological problems. In: Water Quality Criteria and the Biota of the Chesapeake Bay(M. L. Wass), pp. 1-10, US Army Corps of Engineers, Baltimore, Maryland. 1975.

Some effects of salinity on the macroinvertebrates of the lower Potomac River. In: The Potomac Estuary - biological resources - trends and options(W.T. Mason and K.C. Flynn, eds.), pp 75-80, Interstate Comm. of Potomac River Basin Tech. Pub No. 76-2. 1976.

148. PIERCE, JACK W.
NHB, Department of Sedimentology
Smithsonian Institution
Washington, DC 20560
(202) 381-5862

Areas of research interest: esuarine and marine sediments; particulate materials suspended in estuarine and marine waters

Recent relevant publications:

Suspended sediment transport at the shelf break and over the outer margin. In Stanley and Swift, eds. Marine Sediment Transport and Environmental Management. John Wiley and Sons Publisher. pp.437-458. 1976.

Deposition in the upper Patuxent estuary. Estuarine and Coastal Science. Vol. 4, pp. 267-280. (with W.P. Roberts) 1976.

Geochemical exploration using marine mineral suspensates and modern geology. Vol. 6. pp. 221-227. (with F.R. Siegel) 1978.

Herbicides and submerged plants in Chesapeake Bay. Coastal Zone /78. pp. 858-877. (with D.W.Correll and T. Wu) 1978.

Suspended particulate material on the southern Argentine shelf. Marine Geology. Vol. 29. pp. 73-91. (with F.R. Siegel) 1979.

149. PIERCE, SIDNEY K.
Department of Zoology
University of Maryland
College Park, Maryland 20742
(301) 454-5197

Areas of research interest: Physiological and biochemical interactions between marine invertebrates and their environment.

Recent relevant publications:

Cellular volume regulation in salinity stressed molluscs: The water balance of Noetic ponderosa (Arcidae) red blood cells. J. Comp. Physiol. (submitted). 1979. (with L. M. Amende).

Structural changes of Noetia ponderosa red blood cell membranes during cell volume regulation: A freeze fracture study. J. Comp. Physiol. (submitted). 1979. (with L. M. Amende).

Water balance of Rangia cuneata during adaptation to salinity change. Mar. Biol. 1979. (Submitted). (with J. Otto).

A critical level of blood Ca^{2+} is required by bivalves for amino acid regulation in hyperosmotic salinities. Mar. Biol. (Submitted). 1979. (with J. Otto).

PIERCE, SIDNEY K. (continued)

The process of cell volume regulation in salinity stressed coelomocytes of the blood worm Glycera dibranchiata. Biol. Bull. 1979. (Submitted). (with M. K. Warren and C. J. Costa).

150. PLEASANTS, JOHN B.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Coastal zone management; research administration; information management; outer continental shelf development.

Recent relevant publications:

Flow Fluctuations of the Major Tributaries of Chesapeake Bay Resulting From Tropical Storm Agnes. 1974.

Virginia and the Outer Continental Shelf - Problems, Possibilities, and Posture. Multi-Agency report to Gov. of VA. 1974.

The Tidal James - A Review. VIMS Spec. Report. No. 18. 1973.

Special Purpose Areas in Virginia's Coastal Zone. VIMS Spec. Sc. Report. 61. 1972.

The Marine Environment and Resources Research and Management System (MERRMS). VIMS Contri. No. 437. 1972.

151. POMPONI-TAYLOR, SHIRLEY
Horn Point Environmental Laboratories
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P.O. Box 775
Cambridge, Maryland 21613
(301) 228-8200

Areas of research interest: sponge physiology and biochemistry; biofouling and bioerosion of limestone substrates (including oyster shells) by boring sponges.

Recent relevant publications:

Ultrastructure and cytochemistry of the etching area of boring sponges. Colloques Internationaux du C.N.R.S. No. 291. Biologie des Spongiaires (Levi & Boury-Esnault, eds.), Paris. pp. 317-323. 1978.

Ultrastructure of cells associated with excavation of calcium carbonate substrates by boring sponges. J. Mar. Biol.U.K. 59(3):777-784. 1979.

Cytochemical studies of acid phosphatase in etching cells of boring sponges. J. Mar. Biol. Ass. U.K. 59(3):785-789. 1979.

Cytological mechanisms of calcium carbonate excavation by boring sponges. Int. Rev. Cytol. 65:301-319. 1980.

152. PORTNER, EDWARD M.
Applied Physics Laboratory
Johns Hopkins Road
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(301) 953-7100, X3711

Areas of research interest: Power plant site evaluation; entrainment/impingement impacts.

Recent relevant publications:

Prediction of Entrainment/Impingement Impact for Striped Bass Eggs and Larvae by the Proposed Vienna Unit No. 9. JUH PPSE 8-1. 1979. (with L. C. Kohlenstein).

Tests of a High Volume Pump for Ichthyoplankton in the Chesapeake and Delaware Canal. JHU PPSE T-3. 1977. (with C. A. Rohde).

153. POWER, GARRETT
University of Maryland
School of Law
500 West Baltimore Street
Baltimore, Maryland 21201
(301) 528-7661

Areas of research interest: Environmental law and resource management.

Recent relevant publications:

Chesapeake Bay Oysters: Legal Theses on Exotic Species. Proceedings of Workshop on Introduction of Exotic Species at Woods Hole Oceanographic Institution. 1978. (with T. Lewis).

The Fox in the Chicken Coop: The Regulatory Program of the U.S.Army Corps of Engineers. Virginia Law Review. 1977.

Watergate Village: A Case Study of a Permit Application for a Marina submitted to the U.S.Army Corps of Engineers. Coastal Zone Management Journal, 103-124. 1975.

The Federal Role in Coastal Development. Fed. Environmental Law. 1974.

154. POWERS, DENNIS A.
Department of Biology
The Johns Hopkins University
34th & Charles Street
Baltimore, Maryland 21218
(301) 338-7312

Areas of research interest: Physiological ecology; biochemical genetics; evolutionary biology of fishes.

Recent relevant publications:

The effects of temperature and pH on the binding of ATP to carp dioxy hemoglobin. Journ. of Biol.Chem. Vol 225: 445-453. 1980. (with G. S. Greaney, N. K. Hobish).

The covalent structure of the subunits of bacterial luceferies: amino terminal sequence demonstrates subunit homology. Proceed. of Nat'l Acd. of Sc. 76:4887-4889. 1979. (with T. O. Baldwin & M. M. Ziegler).

Genetic variation and relative catalytic efficiencies: LEH-B allozymes of Fundulus heteroclitus. Proceed. of Nat'l Acd. of Sc. 76:2354-2358. 1979. (with A. R. Place).

A comparative study of oxygen equilibria of blood from 40 genera of Amazonian fishes. Comp. Biochem & Physiology. 62A(1):67-86. 1979. (with H. V. Fyhn, U.E.H. Fyhn, J. P. Martin, R. L. Gerlick and S. C. Wood).

The effect of temperature on the oxygen equilibria of fish hemoglobins in relationship to environmental thermal variability. Comp. Biochem. & Physiology. 62A(1):87-94. 1979. (with J. P. Martin, R. L. Gerlick, H. V. Fyhn and U. E. H. Fyhn).

155. PURNELL, DALLAS M.
Department of Pathology
University of Maryland School of Medicine
Baltimore, Maryland 21201
(301) 528-7900

Areas of research interest: neoplasis/carcinogenesis; mycopathology.

Recent relevant publications:

Relationship of Terminal Duct Hyperplasia to Mammary Carcinoma in 7/12 Dimethylbenz(a) anthracene treated LEW/Mai Rats. Amer J. Pathology. (In press).

Virulence Genetics of Aspergillus nidulans: A Review. Mycopathologia 65:177-182. 1978.

Enhancement of Tissue Invasion in Murine Aspergillosis by Systemic Administration of Suspensions of Killed Corynebacterium parvum. Amer. J. Pathology 83:547-556. 1976.

The Histopathologic Response of Mice to Aspergillus nidulans: Comparison between Genetically Defined Haploid and Diploid Strains of Different Virulence. Sabouraudia 12:95-104. 1974.

The Effects of Specific Auxotrophic Mutations on the Virulence of Aspergillus nidulans for Mice. Mycopath. Mycol. Appl. 50:195-203. 1973.

156. PYRCH, DEBRA A.
Applied Physics Laboratory
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Areas of research interest: Computer model

157. RAGAN, ROBERT M.
Department of Civil Engineering
University of Maryland
College Park, Maryland 20740
(301) 454-6617

Areas of research interest: Hydrologic aspects of water resources; applications of remote sensing technology to water resources planning and management.

Recent relevant publications:

Value of Landsat in Urban Water Resources Planning. Journal of Water Resources Planning Div., ASCE, May, 1977. (with T. J. Jackson).

RAGAN, ROBERT M. (Continued)

The Definition of Hydrologic Model Parameters Using Remote Sensing Techniques. Proceed. of 12th Int'l Symposium on Remote Sensing of Environment, Manila. 1978. (with V. V. Salomonson).

Characterization of Urban Runoff. Water Resources Research, AGU, Vol. 14, No. 2, April, 1978. (with W. Whipple, B. B. Berger, C. D. Gates and C. W. Randall).

Use of Landsat Satellite Remote Sensing for Regional Environmental Planning and Management. Proceed. XV Convention, Pan-Amer. Fed of Engr. Soc., Santiag. 1978. (with R. H. Rogers).

Computer Aided Watershed Analyses Using Remote Sensing Based Regional Information Systems. Proceed. XXII Cospar Plenary Meeting, India. 1979. (with J. D. Fellows).

158. RAWLS, CHARLES KELSO
Chesapeake Biological Laboratory
Solomons, Maryland 20688
(301) 326-4281

Areas of research interest: Public information and education;wetlands ecology; wetlands vegetation; waterfowl food habits studies.

Recent relevant publications:

Mechanical control of eurasian watermilfoil in Maryland with and without 2,4-D application. Ches. Sc. 16:266-281. 1976.

Field studies of shell regrowth as a bioindicator of eastern oyster (Crassostrea virginicia Gmelin) response to 2,4-D BEE. Ches. Sc. 18:266-271. 1977.

Food habits of waterfowl in the upper Chesapeake Bay, Maryland. (To be released as pub. in Wildlife Ecology No. 2, Md Dept of Natural Resources, Wildlife Admins). 1978.

159. REAKA, M. L.
Department of Zoology
University of Maryland
College Park, Maryland 20742
(301) 454-5362

Areas of research interest: Patterns of growth, reproduction and life histories of marine and estuarine Crustacea.

Recent relevant publications:

The evolutionary ecology of life history patterns in stomatopod Crustacea. Reproductive Ecology of Marine Invertebrates(S. Stancyk, ed.). pp. 235-260. 1979.

Patterns of molting frequencies in coral-dwelling stomatopod Crustacea. Biol. Bull. 156:328-342. 1979.

The effects of an ectoparasitic gastropod, Caledoniella montrouzieri, upon molting and reproduction of a stomatopod crustacean, Gonodactylus viridis. The Veliger 12:251-254. 1978.

Lunar and tidal periodicity of molting and reproduction in stomatopod Crustacea: A selfish herd hypothesis. Biol. Bull. 150:468-490. 1976.

Molting in stomatopod Crustacea: stages of the molt cycle, setagenesis, and morphology. J. Morphol. 146-55-80. 1975.

160. REBACH, STEVE
Department of Natural Sciences
University of Maryland, Eastern Shore
Princess Anne, Maryland 21853
(301) 651-2200, X 322

Areas of research interest: Marine behavior and ecology; biological rhythms, orientation and migration in the marine environment.

Recent relevant publications:

Behavior of Marine Decaped Crustacea. Garland Press. 1980.(with D. Dunham).

Multiple Cue Utilization in Short Range Migrations of Crustacea (in press).

A Pelletized Diet for Captive Benthic Crustacea (in press).

The Role of Celestial Cues in Short Range Migrations of the Hermit Crab, Pagurus Longicarpus. Animal Behavior 26:835-842. 1978.

Simultaneous Activity Recording of Multiple Isolated Marine Organisms in an Artifical Salt Water Recirulating System. J. Fish Res. Bd. Canada. 34(9):1426-1430. 1977.

161. REILLY, J. PATRICK
Applied Physics Laboratory
Johns Hopkins Road
Laurel, Maryland 20810
(301) 953-7100, X 3714

Areas of research interest: VLF electric and magnetic field effects on people.

Recent relevant publications:

An Approach to the Realistic-Case Analysis of Electric Field Induction from AC Transmission Lines. 3rd Annual Symposium on High Voltage Engr, Milan. 1979.

Electric Filed Induction on Long Object - A Methodology for Transmission Line Impact Studies. Paper F 79 192-6, IEEE Winter Power Eng. Meeting. 1979.

Electric and Magnetic Field Effects from 500 kV Transmission Lines. JHU/APL Rep. PPSE-62A. 1979.

Electric and Magnetic Field Coupling from High Voltage AC Power Transmission Lines - Classification of Short-Term Effects on People. IEEE Trans. on Power Apparatus and Systems, PAS-97(6), p. 2243-2252. 1978.

Power Plant Noise Models for Community Impact Studies. Proc. of Tech. Prog., NOISEXPO 75, Atlanta. 1975.

162. REVELLE, CHARLES
Johns Hopkins University
Baltimore, Maryland
(301) 338-7095

Areas of research interest:Water resources systems analysis; facility siting; location systems analysis.

Recent relevant publications:

Facility Location Analysis: A Review of the Context-Free and EMS Models. Health Services Research, Summer 1977. (with Bigman, Schilling, Cohon and Church).

The TEAM/FLEET Models for Simultaneous Facility and Equipment Siting. Transportation Science.(in press). (with Schilling, Elzinga, Cohon and Church).

REVELLE, CHARLES (Continued)

Gains from Joint Operation of Multiple Reservoir Systems. Water Resources Research, 1977. (with Hirsch and Cohon).

Equity Surrogates for Exploring Water Quality Management Alternatives. Water Resources Research. 1976. (with Brill and Liebman).

Designing Regional Waste-Water Treatment Systems. Water Resources Research. 1976. (with Whitlatch).

163. ROBERSON, BOB S.
Microbiology Department
University of Maryland
College Park, Maryland 20742
(301) 454-5390

Areas of research interest: Immunology; mechanisms of cellulose and humoral immunity; immune response of fish.

Recent relevant publications:

Cell-mediated immune response to products of Actinomyces viscosis cultures. Infec. Immun. 14:372-375. 1976. (with D. W. Turner and R. W. Longton).

Phytohemagglutinin stimulation of enhanced IgG production in mice inoculated with type III pneumococcal polysaccharide. Infect.Immun. 22:901-907. 1978. (with S. S. Vogel).

Cellular immune response in rainbow trout Salmo gairdneri Richardon to Yersinia ruckeri O-antigen monitored by the passive haemolytic plaque assay. J. Fish. Dis. 2:169-178. 1979. (with D. P. Anderson and O. W. Dixon.

Plaque-forming cells and humoral antibody in rainbow trout (Salmo gairdneri) induced by immersion in a Yersinia ruckeri O-antigen preparation. J. Fish Res. Board Can. 36:636-639. 1979. (with D. P. Anderson and O. W. Dixon).

Induction of antibody-producing cells in rainbow trout, Salmo gairdneri Richardson, by flush exposure. J. Fish Biol. (In press). (with D. P. Anderson and O. W. Dixon).

164. ROBERTS, MORRIS H., JR.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Physiological ecology of marine and fresh water decapod crustaceans; pollution effects on vertebrates and invertebrates in all life stages.

Recent relevant publications:

Acute toxicity of bromochlorinated seawater to selected estuarine species with a comparison to chlorinated seawater toxicity. Mar. Environ. Res. 1:19-30. 1978. (with R. A. Gleeson).

Effects of chlorinated seawater on decapod crustaceans and Mulinia larvae. EPA-600/3-79-031. 1979. (with C. E. Laird and J. E. Illowsky).

Survival of juvenile spot (Leiostomus xanthurus) exposed to bromochlorinated and chlorinated sewage in estuarine waters. Mar. Env. Res. (In press). 1979.

Detoxification of chlorinated sewage effluent by dechlorination in estuarine water. (Submitted to Estuaries). 1979.

Egg extrusion as a Kepone-clearance route in the blue crab, Callinectes sapidus.(Submitted to Estuaries). 1979. (with A. T. Leggett, Jr.).

165. ROLLER, WILLIAM F.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: statistical analysis, time series analysis, regression analysis and non-parametric statistics

Recent relevant publications:

On weak covergence of probability measures on spaces of continuous functions. Bulletin of the Institute of Mathematics Academia Sinica 4:159-163. 1976. (with W.J. Padgett).

Some non-parametric tests for the constancy of regression coefficients over time. Dissertation, Virginia Polytechnic Institute and State University. 1977.

A non-parametric test for shift of an unknown location parameter over time. (In preparation). (with W.R. Pirie).

The exact calculation of non-central F probabilities. (In preparation).

166. ROTHSCHILD, BRIAN J.
University of Maryland
Center for Environmental and
Estuarine Studies
Chesapeake Biological Laboratory
Solomons, Maryland 20688
(301) 326-4281
(after 1 July 1980)

Areas of research interest: international fisheries, population dynamics, fisheries management

Recent relevant publications:

Fishing effort. In: J. Gulland (ed.) Fish population dynamics. John Wiley, London. pp. 96-115. 1977.

Fishery management plans. In: K.M. Jurgensen and A.P. Covington (eds.) Extended fishery jurisdication: problems and progress, 1977. Proceedings of the North Carolina Governor's Conference on Fishery Management under Extended Jurisdiction, Raleigh. pp. 45-68. 1977.

Population dynamics of tunas. In: J. Gulland (ed.) Fish population dynamics. John Wiley, London. pp. 309-334. 1977. (with A. Suda)

Management of marine recreational fishing. In: H. Clepper (ed.) Marine Recreational Fisheries 2: Proceedings of the Second Annual Marine Recreational Fisheries Symposium. 220 pp. 1977. (with J.M. Gates and A.M. Carlson)

The symposium summarized. In: R.H. Stroud and H. Clepper (eds.) Predetor-prey systems in fisheries management. Sport Fishery Institute, Washington, D.C. pp. 487-501. 1979.

167. RUDDELL, CRAIG L.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

RUDDELL, CRAIG L. (Continued)

Areas of research interest: Pathobiology, histochemistry, electron microscopy and marine biology.

Recent relevant publications:

Histopathology. Chap. 10 of Final Report to Bureau of Land Mgmt. VIMS, Vol. II. 1977.

Three new crustacean hosts for the parasitic dinoflagellate Hematodinium perezi (Dinoflagellata: Syndinidae). J. Parasitol. 64:158-160. 1978. (with S. A. MacLean).

The effect of selected basic dyes on the blood cells, in particular the basophils, of the Pacific oyster, Crassostrea gigas. J. Invert. Pathology 31:313-325. 1978. (With T. Dunlap, R. K. Okazaki and R. Munn).

Histological atlas of 12 benthic invertebrates from the Middle Atlantic Outer continental shelf. Chap. 12 of VIMS Final Report. 1978.

Apparent absence of Sarcocystis and low prevalence of Trichinella in artifically digested diaphram muscle removed during post-mortem examination at a Sacramento (California) medical center. Am. J. Trop. Med Hyg. 27:837-839. 1978. (with J. H. Theis, R. M. Ikeda and S. Tay).

168. RUSSEK, ESTELLE
Department of Dairy Science
University of Maryland
College Park, Maryland 20742
(301) 454-3931

Areas of research interest: Biostatistics; multivariate statistics.

169. RUZECKI, EVON P.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

RUZECKI, EVON P. (Continued)

Areas of research interest: Physical oceanography;meteorology; relationship between physics and biology of ocean systems; circulation of estuarine and coastal waters; interaction between continental shelf, slope and Gulf Stream waters.

Recent relevant publications:

The Effects of the Agnes Flood on the Salinity Structure of the Lower Chesapeake Bay and Contiguous Waters. In: The Effects of Tropical Storm Agnes on the Chesapeake Bay Estuarine System. Johns Hopkins Press. 1977. (with A.Y. Kuo and C. S. Fang).

The Effects of Tropical Storm Agnes on the Chesapeake Bay Estuarine System. Hydrological Effects, ed. Johns Hopkins U. Press. 1977.

Physical Oceanography and Climatology. Chap. 3 in Middle Atlantic Outer Continental Shelf Environmental Studies, Vol. II. VIMS. 1977. (with C. S. Welch and D. L. Baker).

Physical Oceanography and Climatology. Chap. 3 in Middle Atlantic Outer Continental Shelf Environmental Studies, Vol. II. VIMS. (In press). (with C. S. Welch).

On the Water Masses of Norfolk Canyon. Ph.D. Dissertation. U. of VA. 1979.

170. SACK, R. BRADLEY, M.D.
Division of Infectious Disease
Baltimore City Hospitals
4940 Eastern Avenue
Baltimore, Maryland 21224
(301) 396-8923

Areas of research interest: Cholera-like organisms in the ecology of the Chesapeake Bay.

Recent relevant publications:

The current status of oral therapy in the treatment of acute diarrheal illness. Am. J. Clin. Nutr. 31:2251-2257. 1978. (with N.F. Pierce and N. Hirschhorn)

The epidemiology of diarrhea due to enterotoxigenic Escherichia coli. J. Inf. Dis. 137:639-640. 1978.

SACK, R. BRADLEY, M.D. (continued)

Relationship between enterotoxin production and serotype in enterotoxigenic Escherichia coli. Inf. Imm. 23:325-329. 1979. (with M.H. Merson, F. Orskov, I. Orskov, I. Huq and F. T. Koster)

Use of colony pools for diagnosis of enterotoxigenic Escherichia coli diarrhea. Am. J. Clin. Microbiol. 9:493-497. 1979. (with M.H. Merson, A.K.M. Kibriva Golam, A. Al-Mahmood, Q.S. Adamed, I. Huq)

Prophylactic doxycycline for travelers' diarrhea: results of a prospective double-blind study of Peace Corps Volunteers in Morocco. Gastroenterology 76:1368-1373. 1979. (with J.L. Froehlich, A.W. Zulich, D. Sidi Hidi, A.Z. Kapikian, F. Orskov, I. Orskov and H.B. Greenberg)

171. SANDERS, JAMES G.
University of Maryland
Center for Enviornmental and
Estuarine Studies
Chesapeake Biological Laboratory
Solomons, Maryland 20688
(301) 326-4281
(above effective as of 15 July 1980)

Areas of research interest: phytoplankton, productivity, marine chemistry, arsenic cycling

Recent relevant publications:

The concentration and speciation of arsenic in marine macro-algae. Estuarine Coastal Mar. Sci. 9:95-99. 1979.

Effects of arsenic speciation and phosphate concentration on arsenic inhibition of Skeletonema costatum (Bacillariophyceae). J. Phycol. 5:424-428. 1979.

The uptake and reduction of arsenic species by marine algae. Estuarine Coastal Mar. Sci. (In press) (with H.L. Windom.

Arsenic cycling in marine systems. Mar. Environ. Res. (In press).

The impact of chlorine on the species composition of marine phytoplankton. In: R.L. Jolley (ed.) Water chlorination: Environmental impact and health effects, Vol. 3. Ann Arbor Sci., Ann Arbor, MI (In press). (with J.H. Ryther).

172. SAYRE, CLIFFORD L., JR.
Department of Mechanical Engineering
University of Maryland
College Park, Maryland 20742
(301) 454-2409

Areas of research interest: Fluid flow - pressure distributions on objects; mechanical equipment design; marine propulsion, stability and control of vessels.

173. SETZLER-HAMILTON, EILEEN MARINE
Chesapeake Biological Laboratory
Solomons, Maryland 20688
(301) 326-4281

Areas of research interest: Fish ecology; establishment of feeding in larval fishes; fish prey interactions; utilization of estuarine areas as spawning and nursery grounds; striped bass ecology.

Recent relevant publications:

A linear systems analysis of the calcium cycle in a forested watershiped ecosystem. Progress in theoretical biology, Vol 2. pp 262-345. 1974. (with J. Waide, J. Krebs and S. Clarkson).

The seasonal cycle of scyphozoa and cubozoa in Georgia estuaries. Bull. Mar. Sci. 25:66-74. 1975. (with J. N. Kraeuter).

Synposis of biological data on striped bass, Morone saxatilis (Walbaum). NOAA Tech. Rep. NMFS Cir. Dept of Commerce (In press). (with W. R. Boynton, K. V. Wood, H. H. Zion, L. Lubbers, N. K. Mountford, P. Frere, L. Tucker, and J. A. Mihursky).

Spatial and temporal distribution patterns of striped bass ichthyoplankton and juveniles in the Potomac Estuary. In: Advances in Striped Bass Life History and Population Dynamics: Proc. of a Symp. held at the Am. Fish. Soc. Annu. Mtg., Univ. Rhode Island, R.I. To be published by Texas Instruments. (In press).

Major features of ichthyoplankton populations in the upper Potomac Estuary: 1974-1976. Proceed. 2nd Int'l ICES Symp. Woods Hole, 1979. (with J. A. Mirhursky, K. V. Wood, W. R. Boynton, T. T. Polgar and G. E. Drewry).

174. SHAW, GINNY H.
Virginia Institute of Marine Science
Gloucester Point, VA 23062
(804) 642-2111

Areas of research interest: Computer science

Recent relevant publications:

Problems of data management in a base line study of the Outer Continental Shelf. 8th Annual Offshore Tech. Conf. Proceed., pp 749-752. 1976. (with G. L. Engel).

175. SHIARIS, MICHAEL PETER
Chesapeake Biological Laboratory
Solomons, Maryland 20688
(301) 326-4281

Areas of research interest: Microbial physiology and ecology; biodegradation of recalcitrant environmental compounds.

Recent relevant publications:

Comparative effects of Aroclor 1254 (PCB) and phenanthrene on glucose uptake by freshwater microbial populations. Appl. Environ. Microbiol 37:878-885. 1979. (with G. S. Sayler, L. C. Lund, T. W. Sherrill and R. E. Perkins).

A Tenax-GC extraction technique for residual PCB and PAH analysis in biodegradation assays. Appl. Environ. Micrbiol. (in press). 1979. (with T. W. Sherrill and G. S. Sayler).

176. SHOU, PHILIP M.
Virginia Institute of Marine Science
Gloucester Point, VA 23062
(804) 642-2111)

Areas of research interest: amino acid geochemistry, amino acid geochronology and geothermometry, marine and estuarine pollution

Recent relevant publications:

Effects of various environmental parameters on amino acid racemization rates in fossil bone. Presented at Carnegie Institution of Washington Conference: Advances in Biogeochemistry of Amino Acids, Warrenton, Virginia. October 29 - November 1, 1978. (with P.M. Masters).

Possible geochronological and geothermometric applications of coupling two chemical reactions: racemization and decomposition of amino acids. Presented at Annual Meeting: San Diego, California (Geological Society of America). 1979. (with J.L. Bada).

Kinetics and mechanisms of several amino acid diagenetic reactions in aqueous solutions and in fossils. Presented at Symposium on Dissertations on Chemical Oceanography: Miami, Florida. October 8-12, 1979.

The pK's of amino acids at elevated temperatures estimated from racemization data. Naturwissenschaften 67:37. 1980. (with J.L. Bada).

Kinetics and mechanisms of amino acid racemization in aqueous solutions and in bones. In: Biogeochemistry of Amino Acids, John Wiley and Sons, Inc., New York, New York. (In press). (with J.L. Bada).

177. SILBERHORN, GENE MICHAEL
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Systematic botany and marsh ecology; inventory and evaluation of tidal wetlands; floristics and distribution of vegetation of Coastal Ecosystem of Middle Atlantic States.

Recent relevant publications:

Botanical Studies. In Habitat development field investigations. Tech Rep. D-77-23 Waterways Experiment Station, Vicksburg, Miss. 1978. (with D. Doumlele).

A survey of the vegetational and elevational relationships within the coastal marsh transition zones in the Central Atlantic coastal region. VIMS. (In press). 1978. (with J. D. Boon and D. Ware) .

The wetlands of the North Atlantic states. US Army Corps of Engineers, Water Experiment Station, Vicksburg,Miss. (In press). 1979.

The wetlands of the South Atlantic states. US Army Corps of Engineers, Waterways Epxierment Station, Vicksburg, Miss. (In press). 1979.

Plants of the central Atlantic coast: A field guide. Johns Hopkins U. Press. (In prep.). 1979.

178. SIMPSON, THOMAS W., M.D.
Department of Pathobiology
JHU School of Hygiene and Public Health
615 North Wolfe Street
Baltimore, MD 21205
(301) 955-8675

Areas of research interest: Human disease in relation to the Chesapeake Bay

Recent relevant publications:

A malaria reconnaissance in the Dominican Republic. J. Nat'l. Malaria Soc. 10:44. 1951. (with T.T. Mackie and R.L. Tuttle)

SIMPSON, THOMAS W., M.D. (Continued)

Status of migratory hawks in the Carolinas. The Chat 18:15. 1954.

Eosinophilic meningitis in Okinawa: Three suspected cases of angiostrongyliasis in man. Am. J. Trop. Med. Hyg. 19:77. 1970. (with T. Yonamine, E. Henzan, T. Nishihira and S.S. Chinen)

Oral fluid therapy of cholera among Bangladesh refugees. Johns Hopkins Med. J. 132:197. 1973. (with D. Mahalanabis, A.B. Choudhuri, N.G. Bagchi and A.K. Bhattacharya)

Serum opsonic activity in rodent malaria: Functional and immunochemical characteristics in vitro. J. Immunol, December issue. 1979. (with K.W. Hunter and J.A. Winkelstein)

Chapters in Books:

Infectious Diseases: Geographic Considerations. In Harvey AM et al. pp. 1299-1315. (eds): The Principles and Practice of Medicine, 19th edition. New York: Appleton-Century-Crofts. 1976. (with W.B. Greenough, III.)

179. SINGH, GURBAX

Department of Natural Sciences
University of Maryland, Eastern Shore
Princess Anne, Maryland 21853
(301) 651-2200, X. 324

Areas of research interest: Applications of opto-electronics (including lasers) in solving problems relating to "health" of Chesapeake Bay.

Recent relevant publications:

Laser Modernizes Oyster Shucking. Jounr. of Food Technology, Vol. 26, No. 12, p. 60. 1972.

Subpicosecond Laser Spectroscopy and its Applications to Biological Molecules. Proceedings of NSF "Laser and Their Applications". 1979.

180. SJOBLAD, ROY D.
Department of Microbiology
University of Maryland
College Park, Maryland 20742
(301) 454-6698

Areas of research interest: Transformation of pesticides by microorganisms; chemoreception and motility in microorganisms.

Recent relevant publications:

Polymerization of 1-naphthol and related phenolic compounds by an extracellular fungal enzyme. Pest.Biochem.Physiol. 6:457-463. 1976. (With R. D. Minard and J. M. Bollag).

Oxidative coupling of aromatic pesticide intermediates by a fungal phenol oxidase. Appl.Environ.Microbiol. 33:906-910. 1977. (With J. M. Bollage).

Polymerization of phenolic intermediates of pesticides by a fungal enzyme. Experientia, 33:1564-1566. 1977. (with J. M. Bollag and R. D. Minard).

Chemoreception in the green alga Dunaliella tertiolecta. Current Microbiol. 1:305-307. 1978. (with I. Chet and R. Mitchell).

Oxidative coupling reactions by soil microorganisms. Vol 5., Soil Biochemisty, (A. D. McLaren and E. A. Paul, eds.). (Accepted for pub.). (with J.Bollag).

181. SLADEN, WILLIAM J. L.
Department of Pathobiology
Johns Hopkins University
615 North Wolfe Street
Baltimore, Maryland 21205
(301) 955-3597

Areas of research interest: Waterfowl adaptation; circumpolar or continental color marking programs; water quality as affected by waterfowl; pathology of waterfowl; mobilization of private citizens for involvement in conservation.

Recent relevant publications:

International colour marking codes for swan and goose studies. Proceed. of Int'l Conf. on Conservation of Wetlands and Waterfowl, FRG. 1974.

A Mallophage, Trinoton asnerinum, as a cyclodevelopmental vector for a heartworm parasite of waterfowl. Science, Vol. 194:739-741. 1976. (with W. S. Seegar, E.L. Schiller, and M. Trpis).

Some results from circumpolar marking programs on northern swans and geese. Proceed. XIII Int'l Cong. of Game Biologists, Atlanta. 1977. (with A. A. Kistchinski).

SLADEN, WILLIAM J. L. (Continued)

Canvasback sex ratios on Rhode and West Rivers, Chesapeake Bay, 1972-78. J. Wildl.Mgmt, 43(3):811-813. 1979. (with C. H. Welling).

Microbial impact of Canada Geese (Branta canadensis) and Whistling Swans (Cygnus columbianus columbianus) on aquatic ecosystems. J.Applied & Environmental Microbiology, 37:14-20. (with D. Hussting, J. M. Damare, R. J. Limptert, R. M. Weiner and R. R. Colwell).

182. SMALL, EUGENE B.
Department of Zoology
University of Maryland
College Park, Maryland 20742
(301) 454-3201

Areas of research interest: 1. Ciliated protozoan biology; systematics, phylogeny, and synecology, comparative morphogenesis. 2. Ciliated protozoa residing in and upon invertebrate hosts particularly shell-fish.

Recent relevant publications:

Cortical differentiation in Pleurocoptes furgasoni n. sp. thigmotactic Pleuronematine scuticociliate Epizoic on the Bat Starfish. Trans.Amer. Microsc. Soc. 97(4):540-548. 1978. (with G. A. Antipa).

Structure and function of the oral cavity and its organelles in the hymenostome ciliate Glaucoma. Trans.Amer.Microsc.Soc. 98(4):in press. (with T. Fenchel).

The Phylum Ciliophora. Chap. in The Illustrated Guide to the Study of the Protozoa (J. J. Lee, ed.). Soc. of Protozoologists.(In prep.).

Studies of estuarine ciliate protozoa as a function of environmental change in the Rhode River. CRC Annual Report, pp. 318-330. 1972.

A study of feeding responses to bacterial prey by estuarine ciliates. Trans.Amer.Microsc.Soc. 95(3):514-520. 1975. (with S. Berk and R. Colwell).

183. SMITH, CRAIG L.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

SMITH, CRAIG L. (Continued)

Areas of research interest: Organic geochemistry; chemistry of oil pollution; diagenesis of organic compounds in sediments; heterocyclic chemistry; carbanion chemistry.

Recent relevant publications:

Determination of Leeway of Oil Slicks. Rep. No. DB-D-60-75, US Coast Guard. 1974.

Effects of Tropical Storm Agnes on Nutrient Flux and Distribution in LowerChesapeake Bay. In: The effects of tropical storm Agnes on the Chesapeake Bay Estuarine System, CRC No. 54, p. 299. 1976. (with MacIntrye, Lake and Windsor).

Determination of the Leeway of Oil Slicks. In: The fate and effects of petroleum of marine organisms and ecosystems(D. A. Wolfe, ed.). Pergammon Press, p. 351. 1977.

Hydrocarbon distribution and concentration. Sec. I, Chap. 9 in Middle Atlantic outer continental shelf environmental studies, Vol IIB, Chemical and Biological Benchmark Studies. VIMS SRAMSOE No. 178. 1977. (with W. G. MacIntyre and C. W. Su).

Hydrocarbon distribution and concentration. Sec. I, Chap 14 in Middle Atlantic outer continental shelf environmental studies, Vol. IIC, Chemical and Biological Benchmark Studies. VIMS SRAMSOE No. 202. 1978. (with W. G. MacIntyre).

184. SMUCKER, RICHARD A.
Chesapeake Biological Laboratory
Solomons, Maryland 20688
(301) 326-4281

Areas of research interest: Water microbiology; microbial cytology; filamentous bacterial (Actinomycete) differentiation; chitin ecology.

Recent relevant publications:

Characteristics of Streptomyces coclicolor A3(2) aerial spore rodlet mosaic. Can. J. Microbiol. 24:397-408. 1978. (with R. M. Pfister).

SMUCKER, RICHARD A. (Continued)

Improved methods for isolating subcellular components. In: Proc. 27th Ann. Mtg. Electron Microc. Soc. Am., San Antonio, Aug 1979, pp 362-363. (with R. M. Pfister).

Physiological and cytological responses to hydrocarbons by the hydrocarbon-using fungus Cladosporium resinae. Bot. Mar (In press). (with J. J. Cooney and C. Spiron).

185. SOMMER, SHELDON E.
Department of Geology
University of Maryland
College Park, Maryland 20742
(301) 454-4610

Areas of research interest: Geochemistry of marine/estuarine sediments; water/metal/sediment/suspended solid interactions.

Recent relevant publications:

Microscale chemical effects of low temperature weathering of deep sea drilling project basaltic glasses. J. Geophysical Res. (In Press). 1980.

Polychlorinated Biphenyls in Baltimore Harbor sediments. Bull. Env. Contamin. & Toxicology, 22:413-419. 1979.

Kinetics and Mechanism of Sedimentary Iron Sulfide Formation. Geochem. et Cosmochim Acta (in Press). 1979.

Evaluation of the problem posed by in place pollutants in Baltimore Harbor. EPA Pub. 440/5-77-0158, Vol I and II (Geochemical portion). 1977.

Geochemistry of the major rivers of the Chesapeake Bay System, including Baltimore Harbor (Submitted for publication). 1980.

186. STANBRO, WILLIAM D.
Applied Physics Laboratory
Johns Hopkins Road
Laurel, Maryland 20810
(301) 953-7100, X 3709

Areas of research interest: Environmental chemistry; singlet oxygen chemistry.

Recent relevant publications:

The Chemistry of Amino Acids and Peptides in Power Plant Cooling Towers. Ches. Science 18:126. 1977.

Fluorescent Dye, A Novel Technique to Trace Cooling Tower Drift. Proceed. of 4th Conf. on Sensing the Environment, Am. Chem.Soc. 1978. (with J.Meyer).

Separation of Chalk Point Drift Sources Using a Fluorescent Dye. Proceed. Cooling Tower Environment, U. of Maryland. 1978. (with J. Meyer).

Kinetics and Mechanism of the Dec omposition of N-Chloroalanine in Aqueous Solution. Environmental Science & Technology, 13:446. 1979 (with W.Smith).

Stability of Rhodamine WT in Saline Waters. Water Resources Research. (In press). (with D. A. Pyrch).

187. STERNBERG, YARON M.
Department of Civil Engineering
University of Maryland
College Park, Maryland 20742
(301) 454-2213

Areas of research interest: Ground water hydrology.

Recent relevant publications:

An assessment of potential ground water pollution associated with land application of domestic effluent in drinking water quality enhancement through source protection. Anne Arbor Science (R. B. Pojasek,ed.), pp. 235-255. 1972.

Report on the operation of the Tidal Basin and Associated Structures, Washington, D.C. Final Report submitted to Department of Army, Baltimore Corps of Engineer. March 1979.

188. STEVENSON, J. COURT
Horn Point Environmental Laboratories
Cambridge, Maryland 21613
(301) 228-8200

Areas of research interest: Submerged aquatic vegetation; nutrient flows in estuaries; effects of herbicides.

Recent relevant publications:

Dosewavelength effects of enhanced ultraviolet radiation on chlorophyll concentrations of Spartina patens in a brackish marsh. (Abstract). Bull. of Ecol. Soc. of America 57:40. 1976. (with G. B. Shea).

Nutrient exchanges between Brackish Water Marshes and the Estuary. In: Estuarine Processes, (M. Wiley, ed.), Vol II. Academic Press, New York. 1977. (with D. Heinle, D. Flemer, R. Small, R. Rowland and J. Ustach).

Non point pollution source studies on the Chesapeake Bay. V The Eastern Shore watersheds at Horn Point. CRC Spec. Pub #58. 190 pp. 1977. (with K. Lomax).

Summary of available information on Chesapeake Bay submerged vegetation. Final draft rept. submitted to US Fish and Wildlife Service (Grant No. FWS-14-16-0008-1255). 414 pp. 1977. (with N. Confer).

189. STINE, CHARLES J.
Department of Pathobiology
The Johns Hopkins University
School of Hygiene and Public Health
615 North Wolfe Street
Baltimore, Maryland 21205
(301) 254-8088

Areas of research interest: Eutrophic loading and water quality (bacteriological) of Chesapeake Bay tributaries; behavior of Limulus polyphemus.

190. STRAND, IVAR
Department of Agricultural and Resource Economics
University of Maryland
College Park, Maryland 20742
(301) 454-3805

STRAND, IVAR (Continued)

Areas of research interest: Marine recreational and commercial fisheries; coastal zone management

Recent relevant publications:

The Fisheries Management and Conservation Act of 1976: Economic Issues Associated with Foreign Allocation and Fees. Journ. of Mar.Affairs 5(2/3):135-151. 1978. (with N. Gaither).

Meeting Demands for New Degree Programs and Course Offerings . Journ of N.E. Agri. Eco. Counc, 7(2):21-24. 1979. (with F. Bender).

Measurement of Economic Benefits of Public Goods. Am. Journ. of Agri. Eco. 60(2):313-317. 1979. (with I. Hardie).

An Analysis of Surf Clam Production using an Exhaustible Resource Model. Journ. of N.E. Agri. Eco. Counc, 7(2):99-103. 1979.

The Mobility of Oystermen and its Impact on the Management of the Maryland and Chesapeake Oyster Industry. Maryland Law Review 38(1)1-36. 1978. (with T. Lewis).

191. SU, CHIH-WU
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Base line study of hydrocarbons in environment; steroids from starfish; organic compounds in disinfected wastewater.

Recent relevant publications:

Relative Catalytic Abilities of Nitrogen and Dipolar Oxygen Bases in Chlorobenzene. Chem. Comm. 363. 1970. (with P. W. Arana and J. W. Watson).

Aminolysis Reaction LL. Catalysis of Ester Aminolysis in Chlorobenzene Correlation with Hydrogen-Bonding Ability of Catalysts. J. Am. Chem. Soc., 96:1854. 1974. (with J. W. Watson).

Chloroflourocarbons in the Atmosphere. Nature, 245:27. 1972. (with E. D. Goldberg).

SU, CHIH-WU (Continued)

Low Molecular Weight Halocarbons. In Strategies for Monitoring Marine Pollutants (E. D. Goldberg, ed.). Interscience, N.Y. 1976.

Environmental Concentrations and Fluxes of some Halocarbons. In Marine Pollutant Transfer (H.L. Windon and R. A. Duce, eds.), Lexington Books, Mass. 1976. (with E. D. Goldberg).

192. SULAK, KENNETH J.
Virginia Institute of Marine Sciences
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Zoogeography; systematics; ecology; functional morphology of fishes; Paleoecology of Cenzoic fishes and invertebrates.

Recent relevant publications:

Correct usage of Synodontidae for the lizard-fish family and suggested replacement name Mochokidae for the African upsidedown catfishes. (Submitted). 1978.

The systematics of biology of the genus Bathysaurus. (In prep.) (with C. A. Wenner and G. R. Sedbery).

Invasion of the Atlantic by Peprilus burti (Pisces Stromatcidae), and possible implications. Copeia (in press). (with P. W. Perschbacher and F. J. Schwartz).

Notacanthidae, Halosauridae, Aulopidae, Synodontidae, Chlorophthalmidae. In Fishes of the Northeastern Atlantic and Mediterranean, UNESCO (In prep.)

Notacanthidae, Halosauridae, Aulopidae, Synodontidae, Chlorophthalmidae. In CLOFETA, UNESCO (In prep).

193. SULKIN, STEPHEN D.
University of Maryland
Horn Point Environmental Laboratories
Cambridge, Maryland 21613
(301) 228-8200

Areas of research interest: Crustacean larval behavior; biochemistry of larvae.

SULKIN, STEPHEN D. (Continued)

Recent relevant publications:

The significance of diet on the growth and development of larvae of the blue crab, Callinectes sapidus Rathbun, under laboratory conditions. J. Exp. Mar. Biol. Ecol, Vol 20:119-135. 1975.

Induced winter spawning and culture of larvae of the blue crab, Callinectes sapidus. Aquaculture 8:103-114. 1976. (with E. S. Branscomb and R. E. Miller).

A comparison of two diets in the laboratory culture of the zoeal stages of the brachyuran crabs Rhithropaneopeus harrisii and Neopanope sp. Helgolander wiss. Meeresunters. 28:183-190. 1976. (with K. Norman).

The ontogency of barokinesis during the zoeal development of the Zanthid crab, Rhithropanopeus harrisii (Gould). Mar. Behav. Physio. 4:275-282. 1977. (with E. Bentley).

Biochemical changes during larval development of the Xanthid crab, Rhithropaneopeus harrisii III. Isozyme changes during ontogeny. Mar. Bio. (In press). (with R. P. Morgan, and E. Kramarsky).

194. TAFT, JAY L.

Chesapeake Bay Institute
Macaulay Hall
The Johns Hopkins University
Baltimore, Maryland 21218
(301) 338-8232

Areas of research interest: Plankton biology.

Recent relevant publications:

Seasonal oxygen depletion in Chesapeake Bay. Estuaries. (In Press). 1978. (with R. Loftus and E. O. Hartwig).

Box model analysis of Chesapeake Bay ammonium and nitrate fluxes. In Estuarine Interactions(M. Wiley, ed.), pp. 115-130. Academic Press, N.Y. 1978. (with A. J. Elliott and W. R. Taylor).

TAFT, JAY L. (Continued)

1977 Nitrogen nutrition of the plankton in Chesapeake Bay. 1. Nutrient availability and phytoplankton preferences. Limno. and Ocean. 22:996-1011. 1977. (with J. J. McCarthy and W.R. Taylor).

Phosphate uptake from phosphomonoesters by phytoplankton in the Chesapeake Bay. Limno. and Ocean. 22:1012-1021. 1977. (with M. E. Loftus and W. R. Taylor).

Phosphorus dynamics in some coastal plain estuaries. In Estuarine Processes, Vol. 1(M. Wiley, ed.) pp. 79-89. Academic Press, N.Y. 1976. (With W. R. Taylor).

195. TAYLOR, ROBERT J.
Applied Physics Laboratory
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Areas of research interest: Energy use and recovery; hydroelectric power; wastewater treatment; electromagnetic problems.

Recent relevant publications:

An energy use and recovery survey of wastewater treatment plants. Conf. Energy Optimization of Water and Wastewater Mgmt for Municipal and Industrial Applications. 1979.

Problems of Hydroelectric Development at Existing Dams: An Analysis of Institutional, Economic and Environmental Restraints in Pennsylvania, New Jersey and Maryland. JHU/APL CPE 7901, 1979.

Hydroelectric development of existing Dams. Proceed. of ASCE Water Resources Planning and Mgmt Div. Spec. Conf, 1979, pp. 75-76.

Ammonia absorption geothermal district heating and air-conditoning system. Geothermal Resources Council, Transactions, Vol. 1, 1977.

"Ballast theory for multiring flywheels" and "Stress and strain in a multiring bare filament flywheel". Composite Flywheel Development Program: Final Report. JHU/APL SDO-4616A, April 1977.

196. TAYLOR, W. ROWLAND
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Areas of research interest: Biological/chemical oceanography

Recent relevant publications:

Box model analysis of Chesapeake Bay ammonium and nitrate fluxes. In Estuarine Interaction (M. Wiley, ed.), pp. 115-130. Academic Press. 1978. (with J. L. Taft and A. J. Elliot).

Plankton ecology project. Nutrient and chlorophyll data - Aesop Cruises April 1969-April 1971. CBI Spec. Rep. 61, Ref 77-3. 1977. (with V. Grant).

Nitrogenous nutrition of the plankton in the Chesapeake Bay. I. Nutrient availability and phytoplankton preferences. Limno. and Ocean. 22:996-1011. 1977. (with J. J. McCarthy and J. L. Taft).

Phosphate uptake from phosphomonesters by phytoplankton in the Chesapeake Bay. Limno. and Ocean. 2-:1012-1021. 1977. (with M. E. Loftus and J. L. Taft).

Phosphorus dynamics in some coastal plain estuaries. In Estuarine Processes, Vol. 1(M. Wiley, ed.), pp 79-89. 1976. (with J. L. Taft).

197. THEBERGE, N. BARTLETT
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Areas of research interest: Marine law.

Recent relevant publications:

Alternative management schemes for the surf clam fishery. VIMS SRAMSOE No. 103. 1975. (with J. W. Davis, M. A. Strand, J. Gates, and J. Bockstael).

A crisis in coastal zone management in Virginia. VA Bar Assn. Journ. Jan. 1978. (with S. C. Whitney).

THEBERGE, N. BARTLETT (Continued)

Wetlands evaluation and management in Virginia. VIMS SRAMSOE No. 211, 1978. (with E. Shea).

Analysis of legal and regulatory process in 28 Eastern states for water development, protection and conservation. 1978-79. DOE, Oak Ridge Nat'l Labl. (with S. Whitney and D. Brion).

Study of mining access in coastal zone of South Carolina, North Carolina, Virginia and Maryland. US Cong. Off. of Technology Assessment. 1976-77. (with S. Whitney).

198. TSAI, CHU-FA
Chesapeake Biological Laboratory
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Areas of research interest: Bioassay; fishery biology; biology of water pollution.

Recent relevant publications:

Effects of sewage treatment plant effluents on fish: A review of literature. CRC Pub. No. 36, 299 pp. 1975.

Delayed behavioral responses of the blacknose (Rhinichthys atratulus) to chloramines and free chlorine. Comp. Biochem. Physiol. 60C:23-28. 1978. (with J. A. Fava).

Survival, overturning and lethal exposure times for the pearl dace, Semotilus margaritus (Cope), exposed to copper solution. Comp. Biochem. Physiol 64C:1-6. 1979.

Bioassay of Baltimore Harbor sediments. Estuaries 2:141-153. 1979. (with J. Welch, K. Change, J. Shaeffer and L. E. Cronin).

Acute toxicity to goldfish of mixtures of chloramines, copper, and linear alkylate sulfonate. Trans. Am. Fish. Soc. (In press). (with J. A. McKee). 1980.

199. TUTTLE, JON H.
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Areas of research interest: Thiobacillus and its physiology in the marine environment

Recent relevant publications:

Microbial utilization of thiosulfate in the deep sea. Limnol. Oceanogr. 21: 697-701. (with H.W. Jannasch) 1976.

Thiosulfate stimulation of microbial dark assimilation of carbon dioxide in shallow marine environments. Microb. Ecol. 4: 9-25. (with H.W. Jannasch) 1977.

Microbial dark assimilation of CO_2 in the Carico Trench. Limnol. Oceanogr. 24: 746-753. (with H.W. Jannasch) 1979.

Galapages '79: Initial findings of a deep-sea biological quest. Oceanus 22: 2-10. (with Galapages Biology Expedition Participants) 1979.

ATP formation in Thiobacillus ferrooxidans vesicles by H^+ ion gradients comparable to those of environmental conditions. J. Bacteriol. (in press). (with W.A. Apel and P.R. Dugan)

200. TYLER, MARY A.
Chesapeake Bay Institute
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Areas of research interest: Plankton biology.

Recent relevant publications:

Phytoplankton distributions and red tides resulting from frontal circulation pattersn. In Toxic Dinoflagellate Blooms. (H. H. Seliger and D. L. Taylors, ed.). Proc. 2nd Int'l Conf.pp 239-248. 1979.

TYLER, MARY A. (Continued)

Annual subsurface transport of a red tide dinoflagellate to its bloom area: water circulation patterns and organism distributions in the Chesapeake Bay. Limno. and Ocean. 23:227-246. 1978.

Mechanism of dinoflagellate accumulations in estuarine waters. Ph.D. Thesis. The Johns Hopkins U., 277.p. 1977.

Phytoplankton cages for the masurement in situ of the growth rates of mixed natural populations. Ches. Sc. 18:325-333. 1977. (with O. Owens, P. Dressler, C. Crawford and H. Seliger).

Repression of oophagy in brooding females of Desmognathus ocrophaeus. Herpet. Rev. (Abstract). 1971. (with S. Tilley).

201. ULANOWICZ, ROBERT E.
Chesapeake Biological Laboratory
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(301) 326-4281

Areas of research interest: Application of thermodynamics and information theory to ecosystems analysis; forecasting fisheries harvests; hydrodynamic modeling of estuaries.

Recent relevant publications:

Prediction, chaos and ecological perspective. In: Theoretical systems ecology.(E. Halfon, ed.), pp 107-117. Academic Press, New York. 1979. (with W. M. Kemp).

The forecasting of oyster harvest in central Chesapeake Bay. Estuarine Coastal Mar. Sci. (In press). (with W. C. Caplins and E. A. Dunnington).

Information theory applied to ecosystem structure. In: Mathematical models in biological oceanography (Mann, Platt and Ulanowicz,eds.) UNESCO monograph, Page Bros., Norwick. (In Press).

Models of particle size spectra. In: Mathmatical models in biological oceanography (Mann, Platt and Ulanowicz, eds.). UNESCO monograph, Page Bros., Norwick. (In press).

Ecosystems under stress. In: Mathematical models in biological oceanography (Mann, Platt and Ulanowicz, eds.). UNESCO monograph, Page Bros. Norwich. (In press).

202. VAN ENGEL, WILLARD A.
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Areas of research interest: Biology of Crustacea; biometry; life history ecology and population dynamics of brackish water and marine crustaceans.

Recent relevant publications:

Triple regeneration of the fifth pereiopod of a blue crab Callinectes sapidus Rathbun. Ches. Sc. 14(2):144-145. VIMS Contr. No. 514. 1973. (with A. R. Lawler).

The edible crab - abundant crustacean. Atl. States Mar. Fish. Comm.Mar. Resources Atl. coast. Leaflet 17, 8p. 1763. (with D. G. Cargo and J. F. Wojcik).

A new device for subsampling plankton samples. J. du Conseil 35/3. 1974. (with V. B. Burrell and S. G. Hummel).

Aspects of molting, growth and survival of male rock crabs, Cancer irroratus, in Chesapeake Bay. Ches. Sc. 16(4):221-243. 1975. (with P. A. Haefner).

Discoloration in rock crabs: what to do about it. VIMS Mar. Resources Adv. Ser. 9, 1 p. 1975. (with P. A. Haefner).

203. VAN HEUKELEM, LAURIE
Horn Point Environmental Laboratories
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Areas of research interest: Nutritional biochemistry, nutrition of larval crabs, microencapsulation

Recent relevant publications:

The behavioral basis of larval recruitment in the crab, Callinectes sapidus Rathbun. Submitted to Biological Bulletin 1980. (with S.D. Sulkin, W. Van Heukelem and P. Kelly)

204. VAN HEUKELEM, WILLIAM F.
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VAN HEUKELEM, WILLIAM F. (Continued)

Areas of research interest: Behavior and dispersal characteristics of larval blue crabs and deep sea red crabs.

Recent relevant publications:

A note of the locomotory rhythm of a brachyuran crab and its significance in vertical migration. Mar. Eco. (In press). 1979. (with S. D. Sulkin and I. Phillips).

Growth and life-span of Octopus cyanea (Mollusca: Cephalopoda). J. Zool. Lond. 169:299-315. 1973.

Laboratory Maintenance, breeding, rearing and biomedical research potential of the Yucatan Octopus (Octopus maya). Lab. Animal Sc. 27, Pat II: 852-859. 1977.

Aging in lower animals. Chap 9. in A New Look at Biological Aging. Plenum, N.Y. 1978.

205. VAN VALKENBURG, SHIRLEY D.
Botany Department
University of Maryland
College Park, Maryland 20742
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Areas of research interest: Phytoplankton systematics and ultrastructure; morphological pathway of deposition of biological silica.

Recent relevant publications:

Features for classifying photosynthetic aerobic nanoplankton by numerical taxonomy. Taxon 26(5/6):497-505. 1977. (with E. P. Karlander, G. W. Patterson and R. R. Colwell).

The fine structure of Pseudopedinella pyriforme Carter (Chrysophyceae). Br. phycol. J. 13(1):35-49. 1978. (with C. R. Ostroff).

The growth rate of Mychonastes ruminatus Simpson and Van Valkenburg under various light, temperature and salinity regimes. Br. phycol. 13(3):291-298. 1978. (with P. D. Simpson and E. P. Karlander).

Silicoflagettates. In Phytoflagellates: Form and Function (E. Cox,ed.). Elsevier North-Holland, Inc. N.Y. (In press). 1980.

The ultrastructure of Mychonastes ruminatus gen. et. sp. nov., a new member of the Chlorophyceae isolated from brackish water. Br. phycol. J. 13(2):117-130. 1978. (with P. D. Simpson).

206. VERMEIJ, GEERAT J.
Department of Zoology
University of Maryland
College Park, Maryland 20742
(301) 454-5410

Areas of research interest: Comparative ecology of tropical shallow-water marine communities; theoretical morphology of animals and plants.

Recent relevant publications:

Biogeography and adaptation: Patterns of marine life. Harvard U. Press. 332 pp. 1978.

Predation in time and space: drilling in the gastropod Turritella. Paleobiology, 4:436-441.1978.(with E. C. Dudley).

Shell architecture and causes of death of Micronesian reef snails. Evoluation, 33(2):686-696. 1979.

The architectural geography of some gastropods. In a symposium edited by J. Gray and A. Boucot (in press). 1979.

207. VOLL, MARY J.
Department of Microbiology
University of Maryland
College Park, Maryland 20742
(301) 454-5218

Areas of research interest: Ecological genetics of Vibrio species; environmental mutagenesis.

Recent relevant publications:

Genetic characterization of a ϕ80 transducing bacteriophage carrying the histidine operon of Salmonella typhimurium. J. Virol. 19:313-317. 1976. (with L. Isaki).

Effects of microbial activity on aquatic pollutants. Annals. New York Acad. Sc. 298:104-110. 1977. (with J. Isbister, L. Isaki, M. McCommas, and R. R. Colwell).

Mutagenic potential of petroleum by products in Chesapeake Waters. Tech. rept. No. 39, Water Resources Research Center, U. of MD. 1977. (with J. D. Isbister, L. Isaki and M. D. McCommas).

his-linked hydrogen sulfide locus of Salmonella typhimurium and its expression in Escherichia coli. J. Bacteriol. 139:1082-1084. 1979. (with L. A. Cohen and J. J. Germida).

208. WARDLE, WILLIAM JOHN
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
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Areas of research interest: Helminthology and molluscan ecology.

Recent relevant publications:

A cystophorous appendiculate cercaria developing in sporocysts in a bivalved mollusc, Anadara brasiliana (Lamarck) from the Gulf of Mexico. Journ. of Parasitology. 61(6):1048-1049. 1975.

Techniques for suspension culture of oysters utilizing offshore petroleum platforms. Jounr of Mississippi Acad. of Sc. 21(A):67. 1976. (with J. Ogle and T. Bullington).

The feasibility of suspension culture of oysters (Crassostrea virginica) at a petroleum platform off the Texas Coast. Contrib. in Mar. Sc. 21:63-76. 1978. (with J. Ogle and S. M. Ray).

A new marine cercaria (Digenea: aporocotylidae) from the Southern quahog Mercenaria campechiensis. Contri. in Mar. Sc. 22:175-181.

Occurrence of the symbiotic flatworm Paravortex gemellipara in Chesapeake Bay and Gulf of Mexico molluscs, with notes on its biology and geographic range. Estuaries (in review). 1979.

209. WARINNER, J. ERNEST, III
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Radiobiology; applications of radioactive tracer techniques to marine science; thermal and radioactive pollution of marine organisms; rate processes in autotrophs and heterotrophs.

Recent relevant publications:

Synoptic sightings of Red Waters of the Lower Chesapeake Bay and its tributary rivers (May 1973-September 1974). Proc. of 1st Int'l Conf. on Toxic Dinoflagellates Blooms. Mass. Sc. and TEch. Fndn, pp. 105-111. 1975. (with P. L. Zubkoff).

The heterotrophic potential assay as an indicator of environmental quality. Sym. on Pollution and Physiology of Marine Organisms. pp. 425-437. 1975. (with P. L. Zubkoff).

WARINNER, J. ERNEST, III (Continued)

An assessment of Estuarine and Nearshore Marine Environments. VIMS Spec. Rep. No. 93 (revised), Chaps. 1 and 4. 1976.

The effect of Tropical Storm Agnes as reflected on chlorophyll a and heterotrophic potential of the Lower Chesapeake Bay. Sym. on Tropical Storm Agnes. CRC Pub. 54, 659 pp. 1977. (With P. L. Zubkoff).

210. WARTZOK, DOUGLAS
Department of Pathobiology
The Johns Hopkins University
615 N. Wolfe Street
Baltimore, Maryland 21204
(301) 955-3708

Areas of research interest: Ecology; behavior; physiology.

Recent relevant publications:

Mating behavior of captive spotted seals (Phoca largha). An. Behavior, 27:772-781. 1979. (with J. C. Beier).

Hauling-out behavior of the Pacific Walrus. Mar. Mammal Comm. Rept. MM5AC028 viii + 96pp. 1979. (with G. C. Ray).

Phocid spectral sensitivity curves. Proceed. of 3rd Biennial Conf. on Biology of Marine Mammals.(abstract). 1979.

Metabolism and nutrition of Bering Sea harbor and spotted seals. Proceed. of 29th Alaska Sc. Conf. (In press). (With S. Ashwell-Erickson and R. Elsner).

A radio whale tag. In Advanced Concepts in Ocean Measurements I (F.P. Diemer et al, eds). U. of So. Carolina Press. (In press). (with W. A. Watkins, H. B. Martin and R. Maiefski).

211. WASS, MARVIN L.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
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Areas of research interest: Benthic ecology; wetland ecology; marine biogeography; ornithology.

Recent relevant publications:

The dynamics of estuarine benthic communities. In Estuarine Processes, Vol. 1, Uses, Stresses and Adaptation to the Estuary, pp 177-196. Academic Press. 1976. (with D. F. Boesch and R. W. Virnstein.

Thirty-first breeding bird census. Coastal Distributed Flood Plain. Am. Birds 31(1):40. 1977.

Wildlife Resources, Part V; plus appendixes. In Habitat Development Field Investigations, Windmill Point Marsh Development Site, James River, Virginia. VIMS. 1978. (with E. Wilkins).

Thirtieth winter bird population study, No. 30 Coastal Disturbed Floodplain. Am. Birds 32(1):33. 1978. (with B. G. Wass).

Forty-first breeding bird census. Coastal Distributed Floodplains. Am. Birds 32(1):26-27. 1978.

212. WEBB, KENNETH L.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Energy flow and nutrient cycling in shallow water marine environments; physiology of marine organisms.

Recent relevant publications:

The kinetics and possible significance of nitrate uptake by several algal-invertebrates symbioses. Mar. Bio. 47:21-27. 1978. (with W. J. Wiebe).

Nitrogen fixation in waters. In Ecology of nitrogen fixation (W. J. Broughton, ed.). Oxford U. Press. (in press). (with H. W. Pearl, J. Baker and W. J. Wiebe).

Nutritional mode of several non-pigmented micro-flagellates from the York River estuary, Virginia. J. Exp. Mar. Bio. Ecol.(In press). (with J. L. Haas).

WEBB, KENNETH L. (Continued)

Salt and water balance in the oligohaline clam Rangia cuneata II. Accumulation of intracellular free amino acids during high salinity adaption. (Submitted). (with R. P. Henry and C. P. Mangum).

Nutrient and oxygen redistribution during a spring-neap tidal cycle in a temperate estuary. (Submitted to Science). (with C. F. D'Elia).

213. WEINER, RONALD M.
Microbiology Department
University of Maryland
College Park, Maryland 20742
(301) 454-5364

Areas of research interest: Environmental microbiology; assessment of water quality; Procaryotic morphogenesis.

Recent relevant publications:

Inhibition of deoxyribonucleic acid synthesis and bud formation by nalidixic acid in Hyphomicrobium neptunium. J. Bacteriol. 116(3): 1398-1404. 1973. (with M. A. Blackman).

Use of nalidixic acid for enrichment of auxotrophs in cultures of Salmonella typhimurium. Appl. Microbiol. 28(4):579-581. 1974. (with M. J. Voll and T.M. Cook).

Isolation of Hyphomicrobium from the mouth of the Patuxent River and the isolation and characterization of Hyphomicrobium from a tributary. Ches. Sc. 16(3):153-161. 1975. (with L. Schimel and S. Rosen).

Microbial Impact of Waterfowl, Branta canadenis and Cygnus columbianus, on Aquatic Ecosystems. Appl. Environ. Microbiol. 37:14-20. 1979. (with D. Hussong, J. Damare, R. Limpert, W. J. L. Sladen and R. R. Colwell).

Development of defined, minimal, and complete media for the growth of Hyphomicrobium neptunium. Appl and Environ. Microbiol. 38:18-23. 1979. (with J. A. Havenner, and B. A. McCardell).

214. WELCH, CHRISOPHER S.
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Areas of research interest: Physical oceanography.

Recent relevant publications:

A note on dirunal changes in momentum transfer in the surface layers of the ocean. J. Phys. Ocean. 1972. (with A. Letma).

On the use of drift bottle and seabed drifter data in coastal management. (in prep.) (with J. J. Norcross).

Outfall siting with dye-buoy remote sensing of coastal circulation. Photogrammetric Engr. and Remote Sensing 44(1):87-96. 1978. (with J. C. Munday and H. H. Gordon).

215. WETZEL, RICHARD LEE
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Areas of research interest: Marine ecology; salt marsh-estuarine ecology; systems analysis - ecosystem modeling.

Recent relevant publications:

An experimental-radioisotope study of detrital carbon utilization in a Georgia salt marsh. Ph.D. Dissertation, U. of Georgia. 1975.

Carbon resources of a benthic salt marsh invertebrate Nassarius obsoletus (Say (MOLLUSCA: NASSARIIDAE). In Estuarine Processes (M. Wiley, ed.), Vol. II, Academic Press, N.Y. pp 293-308. 1977.

Flux of organic matter through a salt marsh. In Estuarine Processes (M. Wiley, ed.), Vol. II, Academic Press, N.Y. pp 270. 1977. (with L. R. Pomeroy, K. Bancroft, J. Breed, R. R. Christian, D. Frankenberg, J. R. Hall, L. G. Maurer, R. G. Wiegert, and W. J. Wiebe).

Simulation experiments with a 14-compartment model of a Spartina salt marsh. In Estuarine Modeling (R. Dame, ed.), U. of So. Carolina Press. 1978. (with R. G. Wiegert).

Interactions between substrate, microbes and consumers of Spartina "detritus" in estuaries. In Estuarine Interactions (M. Wiley, ed.), Academic Press, N.Y., pp 93-113. 1978. (with R. R. Christian).

216. WHEATON, FRED
Agricultural Engineering Department
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(301) 454-3901

Areas of research interest: Aquacultural engineering; water resources; shellfish; fin fish; fisheries; closed cycle systems.

Recent relevant publications:

Aquacultural Engineering. J. Wiley & Sons. N.Y. 1977.

Workboat D. C. electrical systems: design, installation and repair. MD Sea Grant Pub MDU-H-78-10. Coop Ext. Bullet. 259. 32pp. 1978. (with G. L. Smith).

Effluent water quality discharge from three oyster shellstock washers. Md Water Resources Research Cen. Tech. Rep. No. 54. 1979. (with S. C. Chang and A. L. Ingling).

Oyster shucking with infrared radiation. Trans. Am. Soc. of Agri. Engr. 17(2):342-345. 1974.

Foam fractionation applied to aquacultural systems. Proceeds. World Mariculture Soc. 1979. (with T. B. Lawson and K. M. Lomax).

217. WHIGHAM, DENNIS F.
Chesapeake Bay Center for Environmental Studies
Smithsonian Institution
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(301) 798-4424

Areas of research interest: Ecology of wetlands; autecology of wetland macrophytes; species control of nutrient cycling in upland and wetland ecosystems.

Recent relevant publications:

Nutrient dynamics of freshwater wetlands. In Proceed. from Nat'l Wetlands Symp. Am. Water Works Assn. (In press). (with S. E. Bayley).

The relationship between aboveground and belowground biomass of freshwater tidal wetland macrophytes. Aquatic Botany 5:355-364. 1978. (with R. L. Simpson).

WHIGHAM, DENNIS F. (Continued)

Nitrogen and phosphorus movement in a freshwater tidal wetland receiving sewage effluent. In Coastal Zone 78:Sym. on Tech. Environ.Socio-economic and Regulatory aspects of Coastal Zone Mgmt. Amer. Soc. Civil. Eng., pp. 2189-2203. 1978. (with R. L. Simpson).

Biomass and primary production of freshwater tidal wetlands. In Freshwater wetlands: Ecological processes and mangement potential (Good, Whigham and Simpson,eds.). Academic Pess, N.Y., pp. 3-20. 1978. (with J. McCormick, R. E. Good and R. L. Simpson).

Nutrient movement in freshwater tidal wetlands with special reference to Delaware River wetlands. In Freshwater wetlands: Ecological processes and management potenzial (Good, Whigham and Simpson,eds.), Academic Press, N.Y., pp. 243-258. 1978. (with R. L. Simpson and R. Walker).

218. WILEY, MARTIN LEE
Chesapeake Biological Laboratory
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Areas of research interest: Biology of fishes; Managing editor of Estuaries.

Recent relevant publications:

Estuarine Interactions. (editor). Academic Press, N.Y. 603. pp. 1978.

Estuarine Processes, 2 vols. (editor). Academic Press, N.Y. 956 pp. 1976.

Finfish productivity in coastal marshes and estuaries. In Proceed. 2nd Symp. Coastal Marsh and Estuary Mgmt, Baton Rouge, pp. 139-150. 1972. (with T. S. Y. Koo and L. E. Cronin).

Fishes of the Chesapeake Bay. In Biota of the Chesapeake Bay (McErlean, Kirby and Wass, eds.), pp S121-S123, Ches. Sc. 13, Suppl. 1972. (with J. Musick).

Population of the polytypic species Nocomis leptocehaltus (Girard) with a description of a new subspecies. Smithson. Contrib. Zool. 29:35. 1971. (with E. A. Lachner).

219. WOJCIK, FRANK J.
Virginia Institute of Marine Science
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Areas of research interest: Fisheries science.

Recent relevant publications:

The Chesapeake Bay Bibliography, Vol. I, The James River. Sp. Sc. Rep. No. 58, VIMS, IRRPOS Proj. Rep. No. 3. 1971. (with S. O. Barrick, M. B. Daw, P. S. Tennyson, J. J. Norcross and W. J. Hargis).

The Chesapeake Bay Bibliography, Vol. I, The James River (A Preliminary Report). Sp. Sci. Rept. No. 58, VIMS IRRPOS Proj. No. 3. 1971. (with M. B. Daw, S. O. Barrick, J. J. Norcross and W. J. Hargis).

Oceanographic data collected in the Chesapeake Bight of the Virginian Sea from 1966 through 1969. Data Rept. 8. 1972. (with E. P. Ruzecki, and J. J. Norcross).

The Chesapeake Bay Bibliography, Vol II, Virginia Waters. Sp. SC. Rept. No. 63, VIMS Rann Rept. No. 5. 1972. (with P. S. Tennyson, S. O. Barrick, J. J. Norcross and W. J. Hargis).

The Edible Blue Crab...Abundant Crustacean. Leaflet No. 17 of Atlantic States Mar. Fish. Comm. 1973. (with W. A. Van Engel, D. C. Cargo.)

220. WOLMAN, M. GORDON
Department of Geography and Environmental Engineering
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Baltimore, Maryland 21218
(301) 338-7090

Areas of research interest: Sedimentation; water quality; water quality monitoring; land use; energy development.

Recent relevant publications:

Changing needs and opportunities in the sediment field. Water Resources Research 13(1)::50-54. 1977.

Relative scales of effectivenes of climate in watershed geomorphology. Earth Surface Processes, 3:189-208. 1978. (with R. Gerson).

The nation's rivers. Science 174(4012):905-918. 26 Nov 1971.

WOLMAN, M. GORDON (Continued)

The impact of the geosciences on critical energy resources. AAAS Selected Symposium 21, pp. 85-102. 1978.

Energy: The next twenty years. In Resources for the Future Study Group, Ballinger Pub. (H. H. Landsberg et al, ec.), 628 pp. 1979.

221. WRIGHT, DAVID A.
Chesapeake Biological Laboratory
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(301) 326-4281

Areas of research interest: Comparative physiology; ionic and osmotic regulation in aquatic animals; calcium metabolism in crustaceans.

Recent relevant publications:

Fluoride accumulation by long-tailed field mice (Apodemus sylvaticuls L.) and field voles from polluted environments. Environ. Pollut. 17:303-310. 1978. (with A. W. Davidson and M. S. Johnson).

Cadmium turnover in the shore crab, Carcinus maenas. Mar. BIol. 50:151-156. 1979. (with C. C. Brewer).

Calcium regulation in intermoult Gammarus pulex. J. Exp. Biol. (In press).

Cadmium and calcium interactions in the freshwater amphipod Gammarus pulex (L.). Freshwater BIol. (In press).

Calcium balance in pre- and post-moult Gammarus pulex (L.). Freshwater Biol. (in press).

222. WU, TUNG L.
Chesapeake Bay Center for Environmental Studies
P. O. Box 28
Edgewater, Maryland 21037
(301) 798-4424

Areas of research interest: Chemistry of pesticides; heavy metals and metallic plant nutrients; transport of pollutants in runoff water,soil and estuaries.

Recent relevant publications:

Land utilization and metals discharge from the Rhode River Watershed. In Watershed Research in Eastern North America. Smithsonian Press. 1977. (with M. T. Hoopes).

Herbicide and submerged plants in Chesapeake Bay. Coastal Zone 79 Symp., Environ. Socioeconomic Regul. Aspects of Coastal Zone Management, pp. 818-877. 1978. (with D. L. Correll and J. W. Pierce).

Atrazine residues in estuarine water and in rain water. 178th Nat'l mt. of Am. Chem. Soc, Paper No. 40, Washington DC. 1979.

The distribution of atrazine in cornfield soils at various elevations. Proc. N.E. Weed Sc. Soc 33:121-30. 1979.

Transport of atrazine into the Rhode River Estuary. 5th Biennial Int'l Estuarine Res. Conf., Jekyll Island, GA, 1979.

223. YANG, JACKSON C. S.
Mechanical Engineering Department
University of Maryland
College Park, Maryland 20742
(301) 454-2411

Areas of research interest: Structural dynamics - off-shore platforms.

Recent relevant publications:

A method for detecting structural deterioration in piping systems. ASME Probabilistic Analysis and Design of Nuclear Power Plant Structures Manual, PVB-PB-030, pp 97-117. 1978. (with D. Caldwell).

Detection of incipient structural failure by the random decrement method. USGS Res. and Dev. Program for Outer Continentnal Shelf Oil and Gas Operations, Rep. 78-902, pp 16-20. 1978.

Bridge responses and damage. Journ. of Wash. Acad. of Science, March 1979. (with C. P. Heins and D. Caldwell).

Dynamic response of offshore structures. Expanded Summary, SESA Nat'l Conf. 1979. (with N. Dagalakis and C. S. Li).

224. YARAMANOGLU, MELIH
Agricultural Engineering Department
University of Maryland
College Park, Maryland 20742
(301) 454-3901

Areas of research interest: Mathematical modeling of watersheds.

Recent relevant publications:

Development of a finite element watershed simulation model with a sub-surface flow component. Paper at Hydrologic Transport Modeling Sym. New Orleans. 1979. (with J. E. Ayars).

Modeling erosion and sediment transport using USDAHL-74. Paper at ASAE Summer Meeting, Winipeg. 1979. (with G. K. Felton and J. E. Ayars).

Non-point pollution from agricultural watersheds. Paper at ASAE Summer Meeting, Winipeg. (Paper 79-2007). 1979. (with J. E. Ayars, G. McClurg and D. C. Wolf).

A finite element model for simulation of hydrographs from natural watersheds. Ph.D. Thesis, U. of MD. 1978.

225. YARBRO, LAURA ANNE
Horn Point Environmental Laboratory
P. O. Box 775
Cambridge, Maryland 21613
(301) 228-8204

Areas of research interest: Phosphorus cycling and transport in coastal plain rivers and streams and estuaries.

Recent relevant publications:

Phosphorus cycling in the Creeping Swamp floodplain and exports from the Creeping Swamp watershed. Ph.D. Dissertation, U. of N. Carolina. 1979.

Water quality in Coastal Plain streams and effects of channelization. N. Carolina Water Resources Res. Inst, Rep. 127. 1977. (with E. J. Kuenzler, P. J. Mulholland and R. P. Sniffen).

226. YOSHIOKA, GARY A.
Applied Physics Laboratory
Johns Hopkins Road
Laurel, Maryland 20810
(301) 953-7100, X 3722

Areas of research interest: Environmental and energy law; climatology; water resources.

Recent relevant publications:

Using the climatic water balance to measure the impact of urbanization on annual water yield. Ann. Mtg of SE Div/Mid.Atl.Div., Assn. of Am. Geographers, Nov. 21, 1976. (with D. Keyes).

Legal aspects of landfill methane recovery (In press).

Current legal issues facing the water supply plans for the Washington Metropolitan Area. (In preparation).

227. ZEIGLER, JOHN M.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Science interpretation to managment; causes of erosion; tropical continental shelf studies; nearshore circulation.

Recent relevant publications:

Shoreline situation reports, Northampton County, Virginia. VIMS Spec. Rep. No. 54. 1974. (with W. D. Athearn, G. L. Anderson, R. J. Byrne, C. H. Hobbs).

A socioeconomic environmental baseline summary for the South Atlantic Region between Cape Hatteras, N.C., and Cape Canaveral, FLA. Vol. IV, Geological Oceanography, Dept of Interior, Contract EQ4A C007. 1974. (with M. A. Patton).

Temperature induced winds from the York River. VA Acad.Sc. 1974. (abstract). (with Chopra and Kuldip).

Environmental effects arising from salinity gradient and ocean wave power generating plants. In: Wave Salinity Gradient Energy Conservation, workshop proceed. 1976. ERDA Rpt. No. C00-2946-1. 1976. (with P.V. Hyer and M.L. Wass).

228. ZUBKOFF, PAUL L.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Biochemistry.

Recent relevant publications:

Enzymes associated with carbohydrate metabolism of scyphistomae of Aurelia aurita and Chrysaora quinquecirrha (Scyphozoa: Semaeostomae). Comp. Biochem. Physiol. 57B:303-308. 1977. (with A. L. Lin).

The determination of hemolymph volume in the Blue Crab, Callinectes sapidus, utilizing ^{14}D-thiocynate. Comp. Biochem. Physiol. 56A:411-415. 1977. (with R. A. Gleeson).

Monomeric constituents of the mesogleal polysaccharides of Chrysaora quinquecirrha (Scyphozoa: Semaeostomeae). Comp. Biochem. Physiol. 61B:161-163. 1978. (with E. P. Gardner).

The effects of a Cochlodinium heterolabatum bloom on the survival and calcium uptake by larvae of the American oyster, Crassostrea virginica. In Toxic Dinoflagellate Blooms (D. L. Taylor and H. H. Seliger,eds.), pp. 409-412, Elsevier North Holland, N.Y. 1979. (with M. Ho).

Mesoscale features of summer (1975-1977) dinoflagellate blooms in the York River, Virginia (Chesapeake Bay Estuary). in Toxic Dinoflagellate Blooms (Taylor and Seliger, eds.), Elsevier North Holland, N.Y. pp. 279-286. 1979. (with J. C.Munday, R. G. Rhodes and J. E. Warinner).

229. ZWERNER, DAVID E.
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642-2111

Areas of research interest: Parasitology.

Recent relevant publications:

Massive leech infestation on a white catfish (Ictalurus catus); A histopathological consideration. Proc. Helminthol. Soc.,Wash., 41(1):64-67. 1974. (with I. Paperna).

The hyperparasite, Urosporidium spisuli sp. n. (Haplosporea) and its effects on the surf clam industry. J. Parasitol. 61(5):944-949. 1975. (with F. O. Perkins and R. K. Dias).

ZWERNER, DAVID E. (Continued)

Studies on Ergasilus labracis Kroyer (Cyclopidea, Ergasilidae) parasitic on striped bass, Morone saxatilis, from the lower Chesapeake Bay. Part I: Distribution, life cycle, and seasonable abundance. Can. J. Zool. 54(4):449-462. 1976. (with I. Paperna).

Parasites and diseases of striped bass, Morone saxatilis (Walbaum),from the lower Chesapeake Bay. J.Fish Biol. 9:267-281. 1976. (with I. Paperna).

Anisakid nematode in shellfish of Atlantic Continential Shelf of North America. (Abstract). Trans. Amer. Micros.Soc. 95(2):265-266. 1976. (with J. R. Lichtenfels, F. G. Kern, J. W. Bier and P. A. Madden).

MEMBER INSTITUTION FACILITIES SUMMARY

The Johns Hopkins University

1. Chesapeake Bay Institute
2. Department of Geography and Environmental Engineering
3. School of Hygiene and Public Health

Smithsonian Institution

4. Chesapeake Bay Center for Environmental Studies

University of Maryland

College Park

5. Agricultural Engineering Department
6. Department of Botany
7. Department of Chemistry
8. Department of Civil Engineering
9. Department of Geology
10. Department of Mechanical Engineering
11. Department of Microbiology
12. Department of Zoology

Baltimore County

13. Department of Biological Sciences

Center for Environmental and Estuarine Studies

14. Chesapeake Biological Laboratory
15. Horn Point Environmental Laboratories

Baltimore City

16. School of Medicine
17. Department of Pathology

18. Virginia Institute of Marine Science

1. The Johns Hopkins University
Chesapeake Bay Institute
4800 Atwell Road
Shady Side, Maryland 20867

Principal Administrator:

Dr. W. R. Taylor, Acting Director

Areas of research/unusual opportunities:

Phytoplankton and zooplankton physiology and ecology; fish behavior and physiology; sediment transport and geochemistry; physical oceanography; environmental modeling.

Principal vessels:

Name	Length	Draft	Special Capabilities
R/V Warfield	106'	12'	High speed (18 kt) catamaran, 450 sq. ft completely equipp. lab., 800 sq.ft. open fan tail, 19'x9' A-frame over stern used for setting current meters, coring,plankton tows,etc. On board computer system.
R/V Pritchard	39'	3'	
R/V Toy Yot	53'	3-1/2'	

Other important equipment:

High turbulence flume for current meter calibration and theoretical turbulence studies.

Laboratories equiped with two atomic absorption instruments for metal analyses, automatic carbon-nitrogen analyzer, isotope counting equipment plus usual biological and chemical laboratory apparatus.Large inventory of current meters.

2. The Department of Geography and Environmental Engineering
The Johns Hopkins University
Baltimore, Maryland 21218

Principal Administrator:

Dr. M. Gordon Wolman

Areas of research emphasis/unusual opportunities:

Algae growth controls; non point sources of pollution; bacterial dieaway rates; stratification of reservoirs; facility siting.

Principal Vessels:

None

Other important equipment:

Packard Tri-Carb Liquid Scintillation Spectrometer Model 3375.
Bendix Gas Chromotograph 2200
Perkin-Elmer Atomic Absorption Spectrophotometer, Model 403
Technicon Auto Analyzer, Type I
Beekman DU Spectrophotometer
Barnstead Autoclave
Two constant temperature rooms

3. School of Hygiene and Public Health
The Johns Hopkins University
615 North Wolfe Street
Baltimore, Maryland 21205

Principal Administrator:

Dept. of Pathobiology

Areas of research emphasis/unusual opportunities:

Field-oriented estuarine education.

Principal vessels:

Name	Length	Draft	Special Capabilities
12 Gruman canoes & trailer	17'	6"	Exploration of shallow estuarine covers & headwaters of tributaries

Other important equipment:

Submarine Photometer
Beckman salinometer and probe
DO meter, pH meter and probes

4. Chesapeake Bay Center for Environmental Studies
Smithsonian Institution
P.O. Box 28
Edgewater, Maryland 21037

Principal Administrator:

Dr. J. Kevin Sullivan,
Director

Areas of research emphasis / unusual opportunities:

The Center comprises 2600 acres of land adjacent to the Rhode River subestuary of Chesapeake Bay. Focus of research is on estuarine/ watershed relationships, particularly in the 12-square mile Rhode River drainage area. A watershed monitoring system is in operation including 12 wiers and gauging stations equipped for volume-integrated sampling. In addition, three tidal stations have been installed to measure flux of materials through a marsh/mud flat system and several areas of moderate density residential development. Considerable data are available on watershed-estuarine interactions including quantity and composition of rainfall. Elevated access to marsh communities is available. Detailed information has been compiled on land use of the watershed since the mid-1600's.

Research vessels:

Name	Length	Draft	Special Capabilities
Robert L. Forrest	42'	3' 6"	Standard fiberglass bay-built work boat
Blue Fox	32'	3' 6"	Steel hull launch, twin diesel inboard engines, enclosed work space, AC power, boom and winch.

Other important equipment:

General purpose chemistry and microbiology labs with standard equipment
Gas chromatograph
Atomic absorption unit
Liquid scintilation spectrometer
Diones ion chromatograph
Zeiss microscope with electron particle counter

5. Agricultural Engineering Department
University of Maryland
College Park, Maryland 20742

Principal Administrator:
Dr. Larry E. Stewart

Areas of research emphasis/unusual opportunities:

Non-point sources of pollution
Watershed modeling
Aquacultural engineering
Mathematical modeling of hydrologic systems
Sediment and chemical transport
Water quality research and related effect on fisheries

Principal vessels:

None

Other important equipment:

Automatic water samplers
Digitizer
Complete wood and metal fabrication shop
Analog computer
Instron machine for testing biological materials
Electronics shop
Access to UNIVAC 1108 and 1100/42 computers

6. Department of Botany
University of Maryland
College Park, Maryland 20742

Principal Administrator:
Dr. Glenn W. Patterson

Areas of research emphasis/unusual opportunities:

Ecology of salt marshes
Physiology, biochemistry and taxonomy of algae
Effects of pesticides on marine plant life

Principal vessels:

None

7. Department of Chemistry
University of Maryland
College Park, Maryland 20742

Principal Administrator:

Dr. David H. Freeman/ Dr. James McNesby

Areas of research/unusual opportunities:

Solvents in estuarine sediment
Sequential chromatography for analysis of pigments from plankton
Metal ion detoxification, nutrient release, pollution sensitivity

Principal vessels:

Name	Length	Draft	Special Capabilities
Huckleberry Friend	34'	3.5'	Rigging for water & sediment sampling.

Other important equipment:

High pressure liquid chromatographs (12)
Gas chromatographs (4)
Gas chromatograph/mass spectrometer (HP 5992)
Lyophilization apparatus
High speed centrifuge
Minicomputer
Class 100 clean room
Nuclear counting equipment
Atomic absorption spectrometers
(a) Geli detectors for inst. neutron act. analysis
(b) α -spectrometers for ^{210}Pb and similar nuclides
Plasma and microwave emission spectrometers
X-ray fluorescence spectrometers
X-ray diffractometer
Organic carbon analyzers

8. Department of Civil Engineering
University of Maryland
College Park, Maryland 20742

Principal Administrator:

Dr. Robert M. Ragan

a. Environmental Engineering Laboratories

Areas of research emphasis/unusual opportunities:

Applied chemisty and microbiology; water and watewater treatment; analysis of remote sensing data; heavy metal analysis; nitrification and denitrification processes.

Principal vessels:

None

Other important equipment:

Total carbon analyzers
Atomic absorption specrophotometer (flame and flameless)
Gas chromatograph
M.V. and visible spectophotometers
Specific ion electrodes
Dissolved oxygen probes
Polarograph
Light scattering photometer

b. Remote Sensing Systems Laboratory

Areas of research emphasis/unusual opportunities:

Satellite applications; hydrologic modeling; development of digital geographical information systems; microwave remote sensing of soil moisture; environmental evaluations; urban land use determination; dredge spoil sites.

Principal vessels:

None

Other important equipment:

Bausch & Lomb Zoom Transfer Scope
Precision Project
Large Area Coordinate Digitzer
TI-733 Dual Cassette Terminal - Univac 1108

Department of Civil Engineering (Continued)

c. Soil Mechanics Laboratory

Areas of research emphasis/unusual opportunities:

Soil classification; shear strength determination; dredged disposal sites.

Principal vessels:

None

Other important equipment:

3" piston sampler, designed and manufactured in lab.
5 double unit levermatic consolidation frame devices

9. Department of Geology
University of Maryland
College Park, Maryland 20742

Principal Administrator:
Dr. Henry G. Siegrist (acting)

Important equipment:

Complete lab facilities for physical and chemical characterization of sediments
X-ray diffraction;Infra-Red facilities; optical microscopes for mineralogical identification
X-ray spectrometers and electron microprobes for elemental analyses

10. Department of Mechanical Engineering
University of Maryland
College Park, Maryland 20742

Principal Administrator:
Dr. P. F. Cunniff

Areas of research emphasis/unusual opportunities:

Fluid flow: experimental and theoretical analysis of turbulence flows; dynamic testing and analysis of small structural models; experimental and theoretical analysis of two-phase flows; high-speed photography and holography for dynamic testing of materials.

Research vessels:

None

Other important equipment:

Hydraulic flume
Low turbulence wind tunnel
INSTRON Materials Testing Machine

11. Department of Microbiology
University of Maryland
College Park, Maryland 20742

Principal Administrator:

Dr. T. M. Cook

Research vessels:

None

Other important equipment:

Deep sea water sampler
Fish virology lab
Molecular biology lab
Immunology lab
Marine bacteriology lab

12. Department of Zoology
University of Maryland
College Park, Maryland 20742

Principal Administrator:

Dr. J. O. Corliss

Areas of research emphasis/unusual opportunities:

Physiological and electron microscopy.

Research vessels:

None

Other important equipment:

Physiological and ecological equipment/instrumentation.

13. Department of Biological Sciences
University of Maryland
Baltimore County Campus
Catonsville, Maryland 21228

Principal Administrator:

Dr. Martin Schwartz

Areas of research emphasis/unusual opportunities:

All levels of biological organization from molecular to populations, emphasizing cellular level.

13. Department of Biological Sciences (continued)

Research vessels:

None

Other important equipment:

Scintillation counters
Environmental rooms
Lab computers

14. Center for Environmental and Estuarine Studies
Chesapeake Biological Laboratory
University of Maryland
P. O. Box 38
Solomons, Maryland 20688

Principal Administrator:

Dr. Joseph J. Cooney

Areas of research emphasis /unusual opportunities:

Facilities to house up to 30 visiting investigators and students.
Research emphasis in: microbiology; plankton biology; finfish biology; pollution studies and pollution ecology; systems ecology.

Research vessels:

Name	Length	Draft	Special Capabilities
R/V Aquarius	65'	5'6"	Trawling, dredging, plankton sampling, coring, hydrographic station keeping, water quality sampling. Tidal fresh water to mouth of Bay & nearby ocean.
R/V Orion	52'	5'8"	Same tasks as above.

14. Center for Environmental and Estuarine Studies (continued)

R/V Venus	46'	3'	Rigged with hydraulic escalator harvester, hydraulic bottom grab, manual bottom grabs, oyster dredge, anchor dredge, & coring devices. Survey bottom dwelling organisms, side-scan sonar observations.
Bluefish	30'	3'	Light sampling with manually operated gear.
Anomia	36'	2-1/2'	Protected tributary water use.

Other important equipment:

Controlled environment lab. (10 labs)
Electron microscopy center
Analytical facilities

15. Horn Point Environmental Laboratories
University of Maryland
Horn Point Road
P. O. Box 775
Cambridge, Maryland 21613

Principal Administrator:

Dr. S. D. Sulkin

Areas of research emphasis/unusual opportunities:

Diffuse source pollution; land use management; shellfish hatchery research; benthic ecology; larval ecology; wetlands research, waste treatment and utilization research; nutrient cycling; invertebrate genetics.

Research vessels:

Outboard powered boats only

Other important equipment:

Liquid scintillation counter
Gas chromatograph
CHN analyzer
Carey spectrophotometer
Gibson differential respirometer
Osometer
Autoanalyzer
Shellfish hatchery
Particle data counter

16. School of Medicine
University of Maryland
22 S. Greene Street
Baltimore, Maryland 21201

Principal Administrator:

Dr. J. W. Burnett

Areas of research emphasis/unusual opportunities:

Animal facilities and tissue culture incubators

Research vessels:

None

Other important equipment:

Gas liquid chromatograph
Liquid scintillation counter
Sorvall 2B centrifuge
Sonifier
Virtis lyophilizer
Revco deep freezers
Histopathological equipment
Cryostat
Incubators

17. Department of Pathology
School of Medicine
University of Maryland
10 S. Pine Street
Baltimore, Maryland 21201

Principal Administrator:

Dr. B. F. Trump

Important equipment:

Gilford 240 Spectrophotometer
Farrand Flourometers
Packard Tri-Carb Liquid Scintillation Counter
Beckman L2065B Ultracentrifuge

18. Virginia Institute of Marine Science
Gloucester Point, VIrginia 23062

Principal Administrator:
Dr. William J. Hargis, Jr.

Areas of research emphasis/unusual opportunities:

Microbiology pathology; invertebrate ecology; planktology; marine culture; environmental science and engineering services; environmental physiology; fisheries science. MERRMS.

Principal vessels:

Name	Length	Draft	Special Capabilities
Pathfinder	57'	5'	Inshore/offshore depth 60 meters
Virginian Sea	144'	9'	Inshore/offshore depth 3000 meters
Retriever	116'	5'	Inshore depth 100 meters
Langley	82'	5.5'	Inshore/offshore depth 60 meters
Tern	80'	5'	Inshore(being installed) depth 50 meters

Other important equipment:

Hydraulics lab with flume and wave tank facility
The James River Hydraulic Model
Remote sensing center
Microfiche equipment/MERRMS
Eastern Shore lab facility at Wachapreague
Computer Center (including IBM 370-115)
Fleet of 45 vessels, including the 5 above
Observation aircraft - DeHavilland Beaver
Vibracorer system

INDEX BY AREAS OF INTEREST

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17. Physiology:	9, 26, 39, 42, 53, 55, 67, 76, 81, 118, 132, 136, 142, 143, 149, 151, 154, 164, 175, 199, 210, 212, 221
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19. Pollution biology; pesticides:	8, 10, 14, 38, 75, 84, 91, 94, 97, 126, 127, 129, 132, 133, 164, 171, 176, 180, 183, 188, 198, 209, 222