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Annual Performance Report
to the
Office of Naval Research

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Research Abstract

Dr. William W. Kirby-Smith, Principal Investigator

Contract No. N00014-92-J-1982

ONR High School Internship Program - 1992

Duke University, School of the Environment, Marine Laboratory

Pivers Island

Beaufort, NC 28516-9721

The Duke University Marine Laboratory, with funding from the Office of Naval Research, conducts an 8-week summer internship program for rising seniors from two high schools: East Carteret High School and West Carteret High School. The purpose of the program is to expose students to active, on-going research programs so that they may be able to understand what is involved in a career in marine science research.

Groups of interns are preselected by a committee of science teachers at each school and the applications are sent to the Duke University Marine Laboratory (DUML). At DUML, applications are reviewed and rated by a panel of three scientists: one from NOAA-NMFS, one from the University of North Carolina Institute of Marine Sciences, and one from DUML. Three interns are selected from each of the two schools. Interns are matched with research faculty at DUML who then contact the interns in the spring to begin the process of developing a research topic.

Interns arrive at DUML in early-mid-June to begin an intensive 8-week exposure to research under the supervision of a faculty member. The interns develop a project topic and a research plan, carry out the research, including data analysis, write a technical report and give an oral presentation of their research. If appropriate, the interns are encouraged to present their work with their mentor at a scientific meeting and/or develop a journal article.

The exposure to such an active research environment is hoped to encourage students at an early age to consider careers in science, particularly marine science.

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THE 1992 PROGRAM

Advertising for the internship program for the summer of 1992 tentatively began in January 1992. In February 1992, the high schools provided a pool of 13 applicants (9 from West Carteret and 4 from East Carteret). A selection committee consisting of Drs. Mark Fonseca (NOAA-NMFS), John Wells (UNC Institute of Marine Sciences), and Richard Forward (DUML) reviewed the applications. Three interns were selected from each of the two high schools.

For the 8-week program, interns were allowed to select flexible time-frames within the period from early June to late August. Such flexibility had been encouraged by the participating high schools. The 1992 program spanned the period from June 8-August 14. The oral presentations by all interns were given on July 24 to accommodate the difference in schedules and all interns submitted a final paper prior to the end of their specific 8-week period. Information sheets for each intern are attached which provide biographical information as well as the name of the mentor, and project title/major tasks performed. Also attached are information sheets on each mentor.

Submitted by: William W. Kirby-Smith, Coordinator
 Office of Naval Research High School Internship Program
 Duke University, School of the Environment, Marine Laboratory
 Beaufort, NC 28516-9721
 (919) 728-2111

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**Duke University, School of the Environment, Marine Laboratory
Beaufort, North Carolina**

Office of Naval Research - High School Internship Program

INFORMATION FOR EACH APPRENTICE

**Year: 1992
Dates: 06/08-07/31**

Name: Amy Leigh Barnes

**Address: 1010 Patch Drive
Newport, NC 28570
Phone: 919-223-3438**

**Address (School, '92-'93): West Carteret High School
Morehead City, NC 28557
Phone: 919-726-1176**

Last Grade Completed: Junior

Type of School: Public

Sex: Female

Race/Ethnicity: White

**Installation: Duke University, School of the Environment,
Marine Laboratory
Beaufort, NC 28516-9721
Phone: 919-728-2111**

**Mentor: Dr. Marius Brouwer
Title: Associate Research Professor
Principal Discipline of Research: Environmental biochemistry**

Major Tasks Performed: Study of metal-binding proteins in blue crab hepatopancreas

**Duke University, School of the Environment, Marine Laboratory
Beaufort, North Carolina**

Office of Naval Research - High School Internship Program

INFORMATION FOR EACH APPRENTICE

Year: 1992

Dates: 06/15-07/10; 07/20-08/14

Name: Erik Christian Lindelof

**Address: 3515 Meadow Drive
Morehead City, NC 28557**

Phone: 919-247-6437

**Address (School, '92-'93): West Carteret High School
Morehead City, NC 28557**

Phone: 919-726-1176

Last Grade Completed: Junior

Type of School: Public

Sex: Male

Race/Ethnicity: White

**Installation: Duke University, School of the Environment,
Marine Laboratory
Beaufort, NC 28516-9721**

Phone: 919-728-2111

Mentor: Dr. William W. Kirby-Smith

Title: Associate Professor in the Practice of Marine Ecology

Principal Discipline of Research: Marine ecology

**Major Tasks Performed: Study of the affects of land use on fecal coliform
contaminants**

**Duke University, School of the Environment, Marine Laboratory
Beaufort, North Carolina**

Office of Naval Research - High School Internship Program

INFORMATION FOR EACH APPRENTICE

**Year: 1992
Dates: 06/08-07/31**

Name: Kathryn Elaine Lockwood

**Address: Rt. 1, Box 126B
Beaufort, NC 28516
Phone: 919-728-5598**

**Address (School, '92-'93): East Carteret High School
Beaufort, NC 28516
Phone: 919-728-3514**

Last Grade Completed: Junior

Type of School: Public

Sex: Female

Race/Ethnicity: White

**Installation: Duke University, School of the Environment,
Marine Laboratory
Beaufort, NC 28516-9721
Phone: 919-728-2111**

**Mentor: Dr. Daniel Rittschof
Title: Associate Professor of Zoology
Principal Discipline of Research: Chemical ecology**

**Major Tasks Performed: Study of porcine trypsin induced larval release in grass
shrimp (*Palaemonetes pugio*)**

**Duke University, School of the Environment, Marine Laboratory
Beaufort, North Carolina**

Office of Naval Research - High School Internship Program

INFORMATION FOR EACH APPRENTICE

Year: 1992

Dates: 06/08-07/10; 07/20-08/07

Name: Frances Ann Moran

**Address: 3007 Arendell Street
Morehead City, NC 28557**

Phone: 919-247-2789

**Address (School, '92-'93): West Carteret High School
Morehead City, NC 28557**

Phone: 919-726-1176

Last Grade Completed: Junior

Type of School: Public

Sex: Female

Race/Ethnicity: White

**Installation: Duke University, School of the Environment,
Marine Laboratory
Beaufort, NC 28516-9721**

Phone: 919-728-2111

Mentor: Dr. Donald J. Gerhart

Title: Assistant Professor

Principal Discipline of Research: Marine Ecology

Major Tasks Performed: Study of barnacle distribution patterns on Pivers Island

**Duke University, School of the Environment, Marine Laboratory
Beaufort, North Carolina**

Office of Naval Research - High School Internship Program

INFORMATION FOR EACH APPRENTICE

**Year: 1992
Dates: 06/08-07/31**

Name:	Carrie Brooke Scott
Address:	P.O. Box 87, Mary Ella Street Harkers Island, NC 28531
Phone:	919-728-7510
Address (School, '92-'93):	East Carteret High School Beaufort, NC 28516
Phone:	919-728-3514
Last Grade Completed:	Junior
Type of School:	Public
Sex:	Female
Race/E.hnicity:	White
Installation:	Duke University, School of the Environment, Marine Laboratory Beaufort, NC 28516-9721
Phone:	919-728-2111
Mentor:	Dr. William W. Kirby-Smith
Title:	Associate Professor in the Practice of Marine Ecology
Principal Discipline of Research:	Marine ecology
Major Tasks Performed:	Study of the presence of fecal coliform (FC) bacteria at Pine Knoll Shores canal

Duke University, School of the Environment, Marine Laboratory
Beaufort, North Carolina

Office of Naval Research - High School Internship Program

INFORMATION FOR EACH APPRENTICE

Year: 1992
Dates: 06/08-07/31

Name: Brian Edward Way

Address: P.O. Box 214,
101 Seaview Street
Beaufort, NC 28516

Phone: 919-728-5182

Address (School, '92-'93): East Carteret High School
Beaufort, NC 28516

Phone: 919-728-3514

Last Grade Completed: Junior

Type of School: Public

Sex: Male

Race/Ethnicity: White

Installation: Duke University, School of the Environment,
Marine Laboratory
Beaufort, NC 28516-9721

Phone: 919-728-2111

Mentor: Dr. Anthony S. Clare
Title: Assistant Research Professor
Principal Discipline of Research: Invertebrate physiological ecology

Major Tasks Performed: Study of attachment of cyprids of the parasitic barnacle,
Loxothylacus panopaei, to its crab host: A role for chemical cues?

**Duke University, School of the Environment, Marine Laboratory
Beaufort, North Carolina**

Office of Naval Research - High School Internship Program

INFORMATION FOR EACH MENTOR

Year: 1992
Dates: 06/08-07/31

Name:	Marius Brouwer
Installation:	Duke University, School of the Environment, Marine Laboratory Beaufort, NC 28516-9721
Phone:	919-728-2111
Sex:	Male
Race/Ethnicity:	White
Highest Degree Held:	Ph.D.
Principal Field of Research:	Environmental biochemistry
Number of Years of Mentorship:	2
Number of Apprentices this Year (1992):	1

**Duke University, School of the Environment, Marine Laboratory
Beaufort, North Carolina**

Office of Naval Research - High School Internship Program

INFORMATION FOR EACH MENTOR

**Year: 1992
Dates: 06/22-08/14**

Name:	Anthony S. Clare
Installation:	Duke University, School of the Environment, Marine Laboratory Beaufort, NC 28516-9721
Phone:	919-728-2111
Sex:	Male
Race/Ethnicity:	White
Highest Degree Held:	Ph.D.
Principal Field of Research:	Invertebrate physiological ecology
Number of Years of Mentorship:	3
Number of Apprentices this Year (1992):	1

**Duke University, School of the Environment, Marine Laboratory
Beaufort, North Carolina**

Office of Naval Research - High School Internship Program

INFORMATION FOR EACH MENTOR

Year: 1992

Dates: 06/08-07/10; 07/20-08/07

Name:	Donald J. Gerhart
Installation:	Duke University, School of the Environment, Marine Laboratory Beaufort, NC 28516-9721
Phone:	919-728-2111
Sex:	Male
Race/Ethnicity:	White
Highest Degree Held:	Ph.D.
Principal Field of Research:	Marine ecology
Number of Years of Mentorship:	1
Number of Apprentices this Year (1992):	1

**Duke University, School of the Environment, Marine Laboratory
Beaufort, North Carolina**

Office of Naval Research - High School Internship Program

INFORMATION FOR EACH MENTOR

Year: 1992
Dates: 06/08-07/31
06/15-07/10; 07/20-08/14

Name: William W. Kirby-Smith

**Installation: Duke University, School of the Environment,
Marine Laboratory
Beaufort, NC 28516-9721**

Phone: 919-728-2111

Sex: Male

Race/Ethnicity: White

Highest Degree Held: Ph.D.

Principal Field of Research: Marine ecology

Number of Years of Mentorship: 9

**Number of Apprentices
this Year (1992): 2**

**Duke University, School of the Environment, Marine Laboratory
Beaufort, North Carolina**

Office of Naval Research - High School Internship Program

INFORMATION FOR EACH MENTOR

Year: 1992
Dates: 06/08-07/31

Name:	Daniel Rittschof
Installation:	Duke University, School of the Environment, Marine Laboratory Beaufort, NC 28516-9721
Phone:	919-728-2111
Sex:	Male
Race/Ethnicity:	White
Highest Degree Held:	Ph.D.
Principal Field of Research:	Chemical ecology
Number of Years of Mentorship:	9
Number of Apprentices this Year (1992):	1