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Naval Dental Research Institute

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SUMMARIES OF RESEARCH

FISCAL YEAR 1990

91-03169



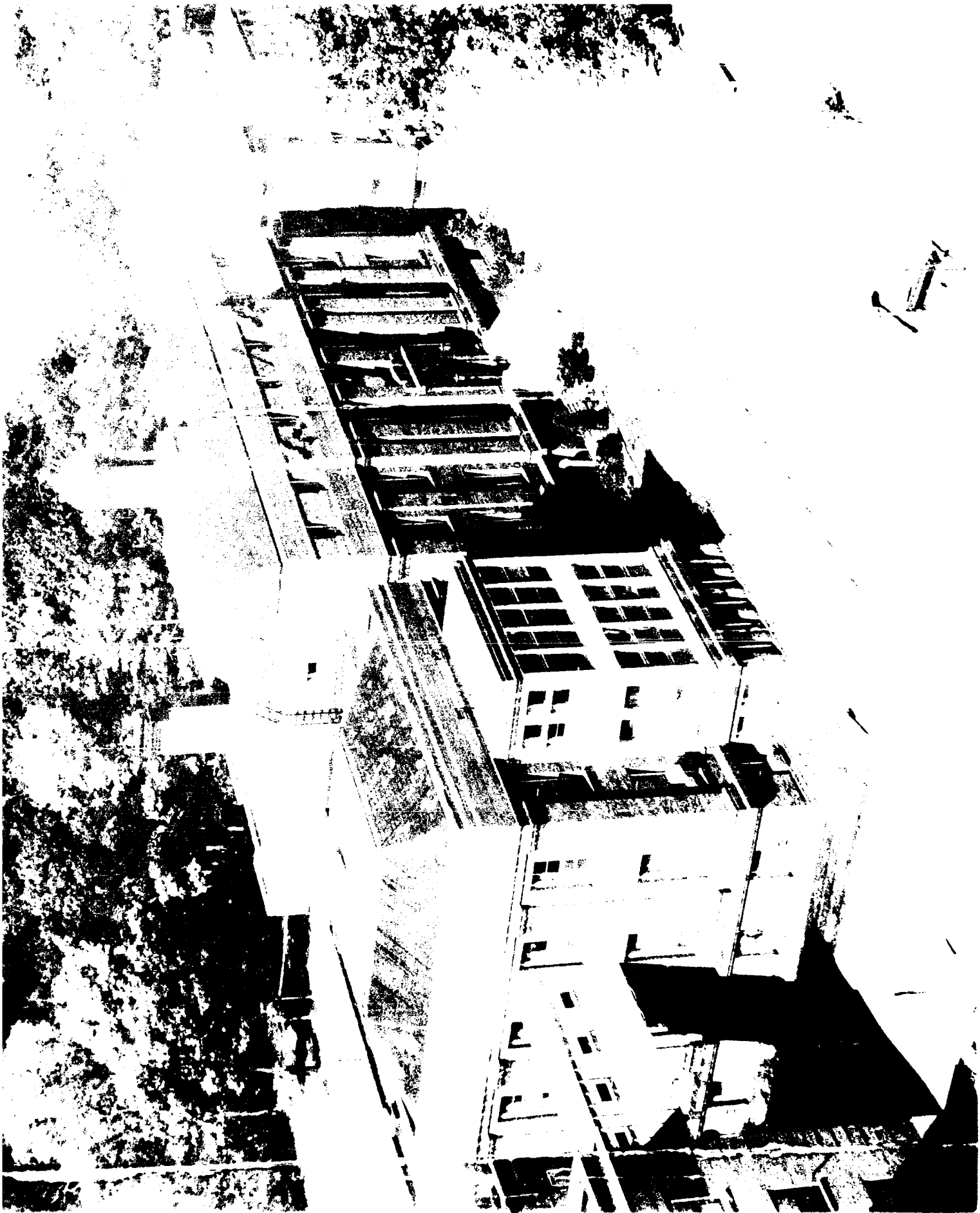
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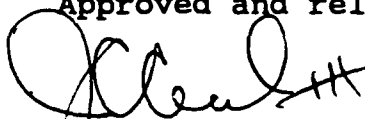
NAVAL DENTAL RESEARCH INSTITUTE
BUILDING 1-H
GREAT LAKES, ILLINOIS 60088-5259

SUMMARIES OF RESEARCH
Fiscal Year 1990

These summaries cover research carried out from 01 October 1989 through 30 September 1990.

This document has been approved for public release; its distribution is unlimited.

Approved and released by:

A handwritten signature in black ink, appearing to read 'J. C. Cecil III', with a stylized flourish at the end.

J. C. CECIL III
Captain, Dental Corps
United States Navy
Commanding Officer

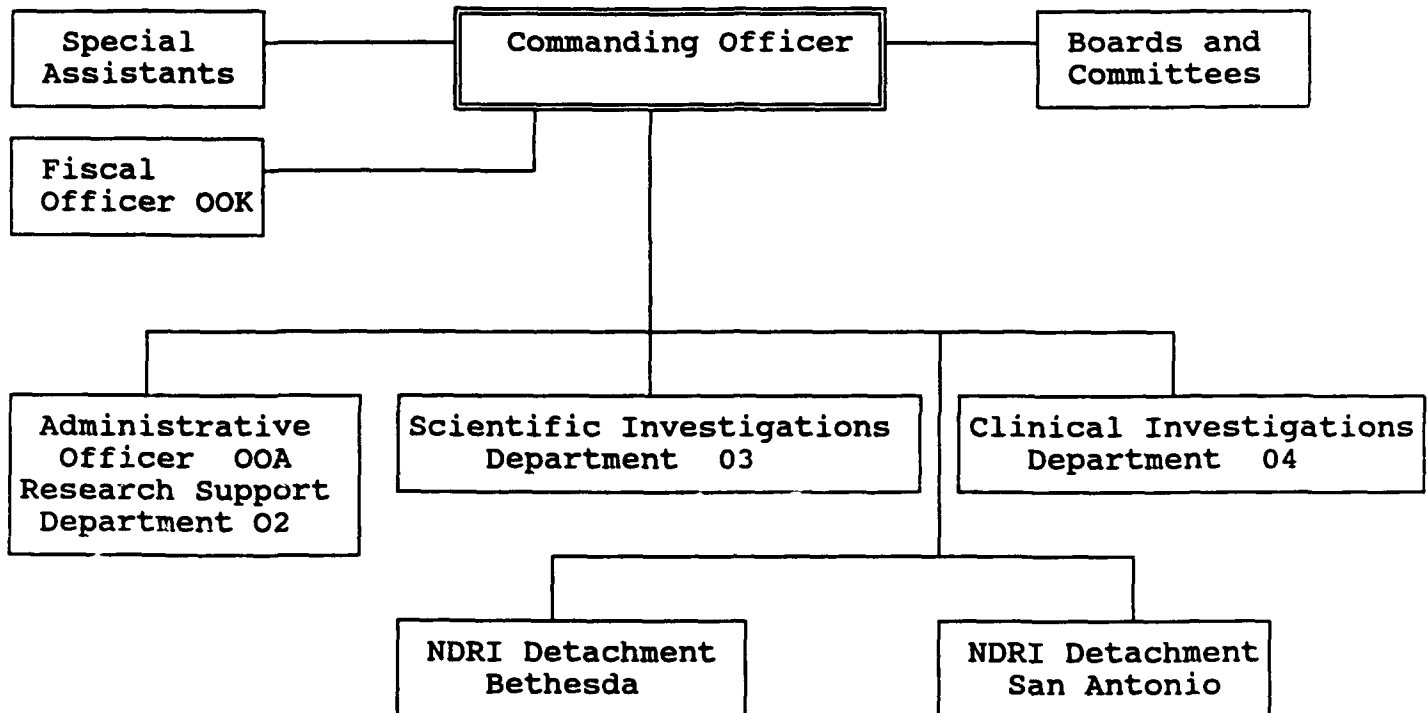
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NAVAL DENTAL RESEARCH INSTITUTE



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COMMAND OVERVIEW

COMMAND

The Naval Dental Research Institute was officially established on 01 January 1967 with an Officer-in-Charge. The Institute was developed from the Dental Research Facility, which was a division of the Dental Department, Naval Administrative Command, Naval Training Center, Great Lakes. The Institute became a fourth echelon command on 17 August 1969 under a Commanding Officer. The command is under the direction of the Naval Medical Research and Development Command.

MISSION

The Institute is responsible for conducting research, development, testing and evaluation in dental and allied sciences, with particular emphasis on the problems of fleet and field dentistry and on dental and oral health in Navy and Marine Corps populations.

PERSONNEL

As of 30 September 1990, there were billets for eight commissioned officers and fourteen enlisted members. Additionally, twelve civilians were employed at the Naval Dental Research Institute.

ORGANIZATION

The Institute has undergone reorganization since 1967. The current organization of three major Departments is reflected on the preceding page. The Scientific Investigations Department consists of the Microbiology, Immunology and Molecular Biology Divisions. Respectively, they carry out required microbiological, immunological and bacteriological analyses; biochemical studies of etiological agents and of host factors involved in oral diseases; assistance, advice and preparation of specimens for histological analysis; and research in the field of laboratory animal medicine and dentistry. The Clinical Investigations Department conducts research related to prevention and treatment of infections, problems of dento-alveolar trauma and injury, and the delivery of optimal dental care for the naval population. The Research Support Department consists of Administrative, Veterinary Science, and Material Management Divisions. The Research Support Department provides the Institute with administrative, library, veterinary research, fiscal and supply services, and equipment and facility maintenance.

STATEMENT OF SIGNIFICANT ACCOMPLISHMENTS

CLINICAL INVESTIGATIONS DEPARTMENT

Twelve hundred examinations were performed on the U.S Naval Academy Midshipman class of 1994 by NDRI dental officers and staff members of the U.S. Naval Academy Branch Dental Clinic. Data were collected and entered on 678 subjects as part of a longitudinal study to define several parameters for the early identification of third molars at risk to develop pericoronitis.

Data on 324 patients were collected relating to complications associated to the extraction of third molars. A report was submitted to the Chief, Navy Dental Corps on 31 March 1990 following preliminary data analysis. An abstract has been approved for presentation at the annual session of the International Association for Dental Research (IADR) in April 1991.

An epidemiologic study to determine the prevalence of dental emergencies in Marine Corps personnel began 01 July 1989 and all data have been collected from over 300 patients. Data analysis is in progress.

In collaboration with researchers of the Universities of Michigan and North Carolina, a study to determine the oral effects of smokeless tobacco use on Navy men continues. Questionnaires assessing the past history of smokeless tobacco use and the prevalence of risk factors have been collected and are being analyzed through the University of North Carolina. An abstract is to be presented at the Smokeless Tobacco Conference in April 1991.

Longevity of autoclavable handpieces is being clinically evaluated in dental clinics throughout the Navy health care delivery system. Data on longevity of ultra-speed handpieces have been analyzed. A manuscript for submission is in preparation. Sonic scaler evaluation is ongoing and low-speed handpiece evaluations are being initiated.

Twenty-one reserve dental officers at twelve reserve centers performed dental examinations to determine the dental treatment needs of Navy and Marine Corps Reserve personnel. Data collection is complete. A report has been submitted to the Chief, Navy Dental Corps. An abstract has been submitted and approved for presentation at the annual session of the IADR in April 1991.

A study to determine the costs of implementing a dental infection control program throughout the Navy is complete. A report has been submitted to the Chief, Navy Dental Corps.

STATEMENT OF SIGNIFICANT ACCOMPLISHMENTS (Continued)

CLINICAL INVESTIGATIONS DEPARTMENT (Continued)

A multi-site study to determine the cost-effectiveness of Navy dental technicians applying occlusal sealant to teeth with incipient caries has been initiated at Naval Dental Clinic (NDC), San Diego, California.

Life table analysis was designed to assess survivability of pulp cap treatment performed from 1976-1982 in deep carious lesions of 317 recruits. Efforts to retrieve dental records revealed that 67 of these members are still on active duty. Current examination of these subjects could be a significant contribution to pulp cap survivability estimates.

Interim estimates of longevity and assessment of failure factors were determined on 81 resin bonded bridges (RBBs) during 1985 and 1986. Anterior RBBs showed significantly shorter estimated survival times (25 months) than posterior RBBs (48 months). An abstract was submitted and approved for presentation at the annual session of the IADR in April 1991.

The project "The Effect of Water and Sodium Ion Concentration on the Rate of Crack Propagation and Transverse Strength in Dental Porcelains" has been completed. An abstract has been approved for poster presentation at the annual session of the IADR in April 1991.

STATEMENT OF SIGNIFICANT ACCOMPLISHMENTS (Continued)

SCIENTIFIC INVESTIGATIONS DEPARTMENT

During FY90, the Scientific Investigations Department has continued studies aimed at improving military readiness by identifying military patients that are at high risk of a dental emergency by the use of human host response factors, rapid immunodiagnostic assays with monoclonal antibodies, DNA probes, and microbial enzyme diagnostic indicators. During FY90 the Scientific Investigations Department performed quantitative surveys for Treponema denticola and Bacteroides gingivalis in subgingival human plaque samples. The results showed that T. denticola antigen is a specific spirochete marker that is elevated in severe periodontitis and may be a reliable prognostic indicator of active disease or disease recurrence.

Several new clinical and animal studies have been initiated during FY90. Briefly these include a Navy study at Great Lakes, Illinois of juvenile periodontitis and ANUG; Veterans Administrative Medical Center, North Chicago, Illinois studies of periodontitis and ANUG; sheep studies for microbial prevalence in New Zealand sheep; monkey studies at Naval Dental Research Institute and through Dr. Braswell at Emory University, Atlanta, Georgia, a second longitudinal periodontal disease study with Northwestern University Dental School, Chicago, Illinois, and others.

Dr. Simonson again reviewed grants for the Medical Research Council of Canada.

Following electrophoresis of outer cell-wall proteins removed by triton X-100 or by phenol extraction methodologies, trypsin-like activity has been found using the fluorescent substrate Z-gly-gly-arg-AFC impregnated into a nitrocellulose type membrane. A gel-blotting system has been purchased for use with the phase electrophoresis system being used in the study, and it is hoped that protein blotting onto nitrocellulose membrane will concentrate the enzymes of interest, making them more readily available to substrates that are in a gel form.

Trials have been carried out with fixed plaque samples to establish the efficacy of our techniques and equipment in determining the presence of spirochetes using phase contrast microscopy. Further, we have utilized monoclonal antibodies specific for Treponema denticola in a fluorescent-antibody procedure to distinguish this species from other oral spirochetes.

During this reporting period a partial gene bank for Treponema denticola ATCC 33521 has been completed. The gene bank was prepared by ligating partially digested chromosomal T.

STATEMENT OF SIGNIFICANT ACCOMPLISHMENTS (Continued)

SCIENTIFIC INVESTIGATIONS DEPARTMENT (Continued)

denticola ATCC 33521 DNA into pUC18 and transforming Escherichia coli DH5-alpha-MCR. Approximately 6,000 colonies of a partial gene bank for Treponema denticola ATCC 33521 have been screened with the monoclonal antibody TDII, IAAII. All were found to be negative. Laboratory procedures have been established for performing dot blot and Southern Hybridizations using the chemprobe non-radiometric DNA labeling kit. This represents approximately 60% of the gene bank. Also DNA from Treponema denticola (Td) ATCC 33521 was partially digested with Sau3A and ligated into BamHI digested and dephosphorylated pBR322. The resultant gene bank was screened with a T. denticola monoclonal antibody and no positive clones were detected. Using the same gene bank, several isolates containing "trypsin-like" enzymatic activity were isolated demonstrating that the gene bank was properly constructed.

An ELISA assay has been developed for Tumor Necrosis Factor using a range of working standards of from 0.0 to 1000 units/ml. The assay has been used to detect TNF in pulp samples, and the difference in levels found between normal and inflamed pulp samples were statistically significant.

Abstract number 9 of Research Seminar II "Graduate Student Section" entitled "Comparison of PMN Protease and Inhibitor Levels in Dental Pulp" was presented orally before the 47th session of the American Association of Endodontists which met April 25-29, 1990. The presentation was awarded "First Place" with a cash prize, and was published in the Journal of Endodontics 16:191-192, 1990.

At the Northwestern University, Chicago, Illinois, "Poster Day" held on April 30, 1990, M. Geivelis presented the poster (#1084) used for the International Association for Dental Research meeting and was awarded "First Place" and a cash award.

The assay developed for a-2 macroglobulin was used with gingival crevicular fluid samples from adult periodontal patients and the resulting information presented at the Northwestern University poster day.

An abstract, "Quantitative Detection of Treponema denticola by a New Fluorescence Immunoassay", L. G. Simonson, D. S. Mehr and H. E. Morton, was submitted and presented as a poster at the 1990 Pandex Users Symposium held May 3-5, 1990, in Orlando, Florida.

Three hybridoma cell lines were isolated from a fusion of lymphocytes from mice immunized with whole, formalin-fixed T.

STATEMENT OF SIGNIFICANT ACCOMPLISHMENTS (Continued)

SCIENTIFIC INVESTIGATIONS DEPARTMENT (Continued)

denticola cells. Two of these (TDXIR, 8B8R8E3 and TDZIR, 8B8R10D7) were selected for inclusion in diagnostic test development following evaluation by ELISA. In addition, TDXIR, 10G5R6C4 did not react with oral bacteria other than Treponema spp. and was selected for inclusion in diagnostic test development.

Lymphocytes from mice immunized with whole, formalin-fixed cells of T. denticola strain ST-10 (serovar d) fused with mouse myeloma cells resulted in the random selection of nine hybridomas for the testing of antibody isotype. Five hybridomas produced IgG3, k antibody and were tested by ELISA for reactivity with T. spp. Three of these were then tested by ELISA for reactivity with 63 additional strains of oral bacteria of genera other than T. spp. TDXIIR, 9E2 and TDXIIR, 9E2 were selected for further study.

A collaborative study concerning the efficacy of the new product Oxyrase (Oxyrase, Inc.) has been initiated with Dr. W. Yotis of Loyola University, Maywood, IL.

Following the adaptation of a particle filtration assay, developed for the diagnosis of strep throat, to dental diagnosis, it was found that the technique was simple, rapid and easily performed. However, the interpretation of results was difficult. Therefore, particle filtration assays are of potential use in dental diagnostic test development. However, special attention must be given to result interpretation by clinical personnel.

During FY90 the contractor, Southern Biotech Associates, provided hybridoma supernatants to Wolinella recta, Eikenella corrodens, Capnocytophaga sp., Fusobacterium nucleatum, and Bacteroides intermedius. We evaluated these supernatants by a biotin-avidin ELISA against whole-cell bacterial antigens. The MABs delivered for W. recta were the six most promising clone supernatants according to the contractor's ELISA. We reevaluated these mabs and found five which may provide strong specific reactions for W. recta. The 24 MABs to E. corrodens were screened against 56 antigens by the contractor. We selected 16 of the clones for further study. Five of the clones gave good reactions in that they were positive for E. corrodens and did not cross react with other antigens. Thirty-four cloned MABs to Capnocytophaga were screened by the contractor against 56 antigens during the period. We selected seven promising clone supernatants for further testing. However, when we tested these mabs, all were observed as negative. We will retest these during the next period. Eight cloned mabs to Fusobacterium nucleatum were selected and evaluated. Four of the mabs were retested

STATEMENT OF SIGNIFICANT ACCOMPLISHMENTS (Continued)

SCIENTIFIC INVESTIGATIONS DEPARTMENT (Continued)

against 16 antigens. All clones were isotyped and also evaluated by FACS. Fourteen Clone supernatants to Bacteroides intermedius were screened against 58 antigens by the contractor. When we rescreened the clone supernatants, we found only negative reactions.

Extracts of strains of T. denticola and T. vincentii were prepared using three techniques. Antigens were detected in extracts using rabbit antisera and murine monoclonal antibodies. Lipooligosaccharide antigens were purified and determined to be responsible for the serovar-specificity of T. denticola strains.

A cross sectional study has been started in conjunction with Northwestern University, Chicago, IL dental students (Dr. S. Matheson and Dr. J. Miller), Dentsply International, York, PA and NDRI. The study will evaluate the use of the substrate Z-Gly-Gly-Arg-AFC for detecting bacterial trypsin-like enzymes from between 50-100 patients (1000-2000 sites). Levels of P. gingivalis and T. denticola will be determined for each site sampled and an attempt to detect PMN elastase and/or cathepsins from gingival crevicular fluid samples taken from the same sites will be made using the appropriate fluorescent substrates.

The non-human primate experiment has been completed during this period. The data is now being analyzed.

A pilot study to establish the infectivity of T. denticola and B. gingivalis has been initiated in conventional rice rats.

Dr. Simonson served on the thesis examining committee of three M.S. degree students at Northwestern University Dental School, Chicago, IL, May 1990. All three students were post-doctoral dental graduates.

In conjunction with Naval Medical Research Unit #3, Cairo, Egypt, clinical subgingival plaque samples from Egyptian patients have been analyzed for the presence of Treponema denticola and Bacteroides gingivalis. The results have verified our earlier discovery with samples from the MFO camp. Treponema denticola and Bacteroides gingivalis are correlated and some factor is secreted by B. gingivalis that stimulates growth of the spirochete.

Dr. Simonson is a collaborator on a grant proposal submitted to the National Institutes of Health, National Institute for Dental Research. Dr. George Riviere, School of Dentistry, Department of Pediatric Dentistry, Oregon Health Sciences

STATEMENT OF SIGNIFICANT ACCOMPLISHMENTS (Continued)

SCIENTIFIC INVESTIGATIONS DEPARTMENT (Continued)

University, in Portland, OR is the principal investigator on the proposal.

Dr. Simonson was appointed adjunct professor at Northwestern University Dental School, Chicago, IL, 31 August 1990.

A second study utilizing the fluorescent substrate Z-Gly-Gly-Arg-AFC was performed at NDRI and has resulted in the submission of the abstract "Bacterial 'Trypsin-Like' Enzyme Detection Employing Z-Gly-Gly-Arg-AFC", E. D. Pederson, P. J. Covill, J. Gallaher and D. E. Chadwick to the IADR for presentation at the 1991 meeting.

Particle Agglutination Assays: Three monoclonal antibodies to Treponema denticola were coupled to 0.89 μ m latex particles individually and as a combination. The particles were used in slide and tube agglutination assays with pure cultures of four strains of T. denticola. Agglutination was observed macro- and microscopically using three dilutions of cells and four dilutions of latex particles. The method was unable to correctly identify the treponemes.

The monoclonal antibodies were coupled to Staphylococcus aureus cells via cellular protein A binding and were used in a slide agglutination assay with cultures of T. denticola using varying dilutions of particles and cultures. Assays were observed macro- and microscopically. Substitution of S. aureus cells for latex particles in a slide agglutination assay did not improve detection of T. denticola.

Difficulties with the agglutination assays may involve steric hinderance caused by size and shape relationships between the particles and the bacterial cells, the epitope density of antigens on the treponemes, and orientation of monoclonal antibodies on the particles.

ADDENDUM TO
SUMMARIES OF RESEARCH - FISCAL YEAR 1990

WORK UNITS

- 61102A 3M161102.BS10.DA.440-0 - Development and Evaluation of Methods to Prevent or Intercept Acute Dental Conditions
- 61153N MR04120.002 0051 - Host Responses to Periodontopathic Microorganisms in Navy and Marine Corps Personnel
- 62787A 3M162775A825 - Development of an Animal Model to Study Periodontal Disease
- 63706N M0095.006 0003 - Evaluation of New Methods to Prevent and Treat Dental Emergencies in Naval Personnel

INDEPENDENT RESEARCH

- 61152N MR00001.01.0061 - Cloning and Characterization of Protease-type Enzymes from Treponema denticola Associated with Periodontal Disease
- 61152N MR00001.01.0061 - Characterization of Surface Antigens of Treponema denticola

SCIENTIFIC JOURNAL PUBLICATIONS

Cohen, M. E., Arthur, J. S. and Rodden, J. W. Patients' Retrospective Preference for Extraction of Asymptomatic Third Molars. Community Dentistry and Oral Epidemiology 18:260-263, 1990.

McMahon, K. T., Wasfy, M. O., Yonushonis, W. P., Minah, G. E. and Falkler Jr., W. A. Comparative Microbiological and Immunological Studies of Subgingival Dental Plaque from Man and Baboons. Journal of Dental Research 69:55-59, 1990.

Schutt, R. W. Bactericidal Effect of a Disinfectant Dental Stone on Irreversible Hydrocolloid Impressions and Stone Casts. Journal of Prosthetic Dentistry 62:605-607, 1989.

Schutt, R. W. A Procedure to Sterilize Dental Burs with Dry Heat. Journal of Prosthetic Dentistry 63:246, 1990.

Schutt, R. W., and Starsiak, W. J. Glass Bead Sterilization of Surgical Dental Burs. International Journal of Oral and Maxillofacial Surgery 6:250-251, 1990.

Simonson, L. G. Quantitative Immunoassay of Treponema Denticola Seroovar C in Adult Periodontitis. Journal of Clinical Microbiology 28:1493-1496, 1990.

RESEARCH PROGRESS REPORTS

NDRI-PR 90-01	Bactericidal Effect of a Disinfectant Dental Stone on Irreversible Hydrocolloid Impressions and Stone Casts
NDRI-PR 90-02	A Procedure to Sterilize Dental Burs with Dry Heat
NDRI-PR 90-03	Summaries of Research - Fiscal Year 1989
NDRI-PR 90-04	Quantitative Immunoassay of <u>Treponema Denticola</u> Serovar C in Adult Periodontitis

FORMAL PRESENTATIONS MADE AT MEETINGS OF SCIENTIFIC
SOCIETIES/GROUPS

JANUARY 1990

SIMONSON, L. G., presented "Immunologic Methods of Diagnosing Periodontal Disease" to the Coastal Carolina Dental Society, Jacksonville, NC.

MARCH 1990

SIMONSON, L. G., presented "Quantitative Immunoassay of Oral Anaerobes Associated with Periodontitis" at a Lunch and Learn Session for the 1990 International Association for Dental Research meeting in Cincinnati, OH.

The following presentations were given at the 68th General Session of the International Association for Dental Research/19th Annual Session of the American Association for Dental Research held March 7-11, 1990, in Cincinnati, Ohio:

Arthur, J. S., Simecek, J. W., Rodden, J. W., Cohen, M. E. and Cecil, J. C. III, "Periodontal Treatment Needs Survey of Navy and Marine Corps Reserve Personnel"

Arthur, J. S., Simecek, J. W. and Cohen, M. E., "Non-periodontal Treatment Needs Survey of Navy and Marine Selected Reserves"

Cohen, M. E. and Arthur, J. S., "Randomization Analysis of Dental Data with Skew and Variance Heterogeneity"

Geivelis, M., Turner, D. W. and Pederson, E. D., "A Sensitive ELISA-Based Assay for Interleukin-6"

Pederson, E. D., Berry, S. T., Turner, D. W. and Rauschenberger, C. R., "Improved Amplified Substrate ELISAs for Periodontal Host Response Factors"

Rauschenberger, C. R., Turner, D. W., Kaminski, E. J., Osetek, E. M., and Pederson, E. D. "Detection of PMN Components in Health and Diseased Dental Pulp"

Schutt, R. W., Monroe, S. B. and McMahon, K. T., "Bactericidal Efficacy of the Decedent Disposable Disinfectant Sleeve"

Simonson, L. G., Mehr, D. S. and Morton, H. E., "Quantitative Detection of Treponema denticola by a New Fluorescence Immunoassay"

**FORMAL PRESENTATIONS MADE AT MEETINGS OF SCIENTIFIC SOCIETIES/
GROUPS (Continued)**

MARCH 1990 (Continued)

Turner, D. W., Pederson, E. D. and Lamberts, B. L.,
"Comparative Quantitation of Immune Complexes in GCF by Two
Methods"

Weintraub, J. A., Arthur, J. S., Kuehne, J., Stinnett,
S., Chambless, M., Eklund, S. I. and Burt, B. A., "Effects of
Smokeless Tobacco on Dental Caries and Attrition"

Yotis, W., Sharma, V. K., Hoerman, K., Keene, J. and
Simonson, L. G. "Outer sheath polypeptides of Treponema
denticola"

APRIL 1990

The following presentation was given at the American
Association of Endodontists Annual Session:

Rauschenberger, C., McClanahan, S., Turner, D., Kaminiski,
E., Pederson, E., and Osetek, E. "Comparison of PMN Protease and
Inhibitor Levels in Dental Pulp".

MAY 1990

The following presentations were given at the American
Society for Microbiology Annual meeting held 13-17 May 1990 in
Anaheim, California:

Nilius, A. M. and Simonson, L. G. "Lipooligosaccharide
Antigens Determine Treponema denticola Serotype"

Simonson, L. G., McMahon, K. T., Childers, D. R. and
Morton, H. E., "Distribution of Treponema denticola in
Multinational Adult Populations"

Yotis, W., Gopalsami, C., Hoerman, K., Keene, J. and
Simonson, L. G. "Substitution of the Anaerobic Chamber with
Oxyrase for the Growth of Treponema denticola"

The following presentation was given at the 1990 Pandex
Users Symposium in Orlando, Florida:

Simonson, L. G., Mehr, D. S. and Morton, H. E.
"Quantitative Detection of Treponema denticola by a New
Fluorescence Immunoassay".

FORMAL PRESENTATIONS MADE AT MEETINGS OF SCIENTIFIC SOCIETIES/
GROUPS (Continued)

JULY 1990

Simonson, L. G. presented "Immunodiagnosis of Active Periodontal Disease" to industrial scientists of 3M Company in Saint Paul, Minnesota.

SEPTEMBER 1990

Simonson, L. G. presented "Prognosis and Diagnosis of Active Periodontal Disease" at the Naval Dental Clinic, Great Lakes, Illinois.

PARTICIPATION IN PROFESSIONAL PROGRAMS AND OTHER MEETINGS

OCTOBER 1989

HOGAN, W. M., attended EEO For Supervisors and New Supervisory Development sponsored by Civilian Personnel Office, Great Lakes, Illinois.

KUEHNE, J. C., attended Intermediate Leadership and Management Education and Training conducted by Naval Medical Command in Philadelphia, Pennsylvania.

NILIUS, A. M., attended Essentials in Bioresearch Waters 1989 Seminar Series conducted by Millipore Corporation in Madison, Wisconsin.

PEDERSON, E. D., attended the East Coast Navy Safety Workshop at the Naval Safety Center, Norfolk, Virginia.

RODDEN, J. W., attended the annual meeting of the American Academy of Periodontology in Washington, D. C.

SCHUTT, R. W., attended Oral Surgery Illustrated - A Review of Practical Oral Surgery for the General Practitioner conducted by Northwestern University Dental School in Chicago, Illinois.

SCHUTT, R. W., attended General Dentistry Treatment Planning conducted by the National Naval Dental Center in Bethesda, Maryland.

SIMONSON, L. G., attended the fall meeting of the Midwest Branch of the Tissue Culture Association in Round Lake, Illinois.

NOVEMBER 1989

SCHUTT, R. W., completed General Dentistry Treatment Planning conducted by the National Naval Dental Center, Bethesda, Maryland.

The following personnel attended the 96th annual meeting of the Association of Military Surgeons of the United States in San Diego, California:

CECIL III, J. C.
KUEHNE, J. C.
RODDEN, J. W.

ISLEY, D. R.
MAPES, T. L.
SIMECEK, J. W.

PARTICIPATION IN PROFESSIONAL PROGRAMS AND OTHER MEETINGS
(Continued)

DECEMBER 1989

COHEN, M. E., attended Analyzing Qualitative Categorical Data: Recent Approaches and Developments at the Institute for Professional Education, Washington, D. C.

MAPES, T. L., attended "Effective Animal Care and Use Committees" and "Guidelines for the Well-Being of Rodents in Research" conducted by the Scientists Center for Animal Welfare at Research Triangle Park, North Carolina.

The following personnel attended the Naval Medical Research and Development Command Commanding Officer's Conference in Honolulu, Hawaii:

CECIL III, J. C.

SIMONSON, L. G.

JANUARY 1990

SIMECEK, J. W., attended the annual RADM W. J. H. Vaughn Memorial Naval Reserve Dental Luncheon and Seminar conducted by the Naval Reserve Readiness Command, Region Eleven, Naval Air Station in Dallas, Texas.

COVILL, P. J., attended Respiratory Protection Class (OShati-22A) conducted by Naval Safety School, Bloomington, Indiana in Millington, Tennessee.

FEBRUARY 1990

FORGAS, L. B., attended the Illinois Dental Hygiene Association meeting in Chicago, Illinois.

FORGAS, L. B., attended the National Quality Management Conference conducted by Iowa State University in Chicago, Illinois.

MCMAHON, K. T., attended the Oral Pathology continuing education course conducted by Naval Dental School in Bethesda, Maryland.

The following personnel attended the 6.1 Program Review conducted by Naval Medical Research and Development Command in Bethesda, Maryland:

CECIL III, J. C.
PEDERSON, E. D.
TURNER, D. W.

MAPES, T. L.
SIMONSON, L. G.

PARTICIPATION IN PROFESSIONAL PROGRAMS AND OTHER MEETINGS
(Continued)

FEBRUARY 1990 (Continued)

The following personnel attended Total Quality Management training at Naval Training Center, Great Lakes, Illinois:

CECIL III, J. C.

FORGAS, L. B.

The following personnel attended the 125th Midwinter Chicago Dental Society meeting in Chicago, Illinois:

FORGAS, L. B.

RODDEN, J. W.

MARCH 1990

CECIL III, J. C., attended the 76th Session of the Interagency Institute for Federal Healthcare Executives conducted by Naval Health Sciences Education and Training Command in Washington, D. C.

HOGAN, W. M., attended the Public Responsibility in Medicine and Research meeting conducted by Tufts University School of Veterinary Medicine in Boston, Massachusetts.

The Wordperfect 5.0 computer software training course conducted by Navy Data Automation Facility in Great Lakes, Illinois was attended by:

NILIUS, A. M.

SIMONSON, L. G.

The following personnel attended the 68th General Session of the International Association for Dental Research and the 19th Annual Session of the American Association for Dental Research in Cincinnati, Ohio:

CECIL III, J. C.

MONROE, S. B.

COHEN, M. E.

MORTON, H. E.

FORGAS, L. B.

NILIUS, A. M.

KUEHNE, J. C.

PEDERSON, E. D.

MAPES, T. L.

RODDEN, J. W.

MCMAHON, K. T.

SIMECEK, J. W.

MEYER, D. M.

SIMONSON, L. G.

APRIL 1990

WRIGHT, G. A., attended Bar Code Technology and Data Applications conducted by Data-Tech Institute in Chicago, Illinois.

PARTICIPATION IN PROFESSIONAL PROGRAMS AND OTHER MEETINGS
(Continued)

APRIL 1990 (Continued)

The Wordperfect 5.0 computer software training course conducted by Navy Data Automation Facility in Great Lakes, Illinois was attended by:

COHEN, M. E.
MCMAHON, K. T.

FORGAS, L. B.
STEWART, S. P.

MAY 1990

CECIL III, J. C., attended the National Advisory Dental Research Council in Bethesda, Maryland.

COHEN, M. E., attended the semi-annual Task Force on Design and Analysis in Oral Research meeting in New Brunswick, New Jersey.

MORTON, H. E., attended the 1990 Pandex Users Symposium in Orlando, Florida.

PEDERSON, E. D., attended Basic Electrical Principles conducted by the OSHA Training Institute in Des Plaines, Illinois.

WRIGHT, G. A., attended the Naval Medical Research and Development Command Finance Conference in Bethesda, Maryland.

The American Society for Microbiology annual meeting in Anaheim, California was attended by:

MAPES, T. L.
SIMONSON, L. G.

NILIUS, A. M.

JUNE 1990

COHEN, M. E., attended A View to Discovery: MacIntosh in Science and Research Seminar in Rolling Meadows, Illinois.

KLINE, S. L., attended Lotus 1-2-3 computer software training and Wordperfect 5.0 computer software training conducted by Navy Data Automation Facility in Great Lakes, Illinois.

NILIUS, A. M., attended Infectious Diseases and Their Control in Dentistry conducted by the OSAP Research Foundation in San Francisco, California.

PORTIS, M. J., attended Advanced Wordperfect computer software training in Chicago, Illinois.

PARTICIPATION IN PROFESSIONAL PROGRAMS AND OTHER MEETINGS
(Continued)

JUNE 1990 (Continued)

The 1990 ASM Conference on Biotechnology in Chicago, Illinois was attended by the following personnel:

MAPES, T. L.

THORP, S. E.

The following personnel attended the W. E. Deming Teleconference Transformation in Management conducted by the University of Wisconsin - Parkside in Kenosha, Wisconsin:

FORGAS, L. B.
SIMONSON, L. G.

RODDEN, J. W.
WRIGHT, G. A.

JULY 1990

MEEKER, D. R., attended the Financial and Material Management Training course in Bethesda, Maryland.

STEWART, S. P., attended the 21st Federally Employed Women's Training Program in San Antonio, Texas.

The following personnel conducted a Third Molar Study at the Naval Academy in Annapolis, Maryland:

MCMAHON, K. T.
MORGAN, L. G.
TRIPLETT, J. F.

MONROE, S. B.
SIMECEK, J. W.

SEPTEMBER 1990

The staff of the Naval Dental Research attended the Total Quality Management (TQM) Seminar sponsored by Consolidated Civilian Personnel Office, Great Lakes, Illinois.

DISTINGUISHED VISITORS

OCTOBER 1989

RADM J. F. Calhoun, Commander, Naval Training Center, Great Lakes, Illinois.

MAJ M. W. Carr, VC, USA, United States Army Medical Department Activity, Fort Leonard Wood, Missouri.

CPT S. F. Harman, VC, USA, Veterinary Services, Fort Sheridan, Illinois.

B. Wood, United States Army Medical Department Activity, Fort Leonard Wood, Missouri.

SFC R. E. Brackbill, United States Army Medical Department Activity, Fort Leonard Wood, Missouri.

Dr. L. Braswell, School of Postgraduate Dentistry, Emory University, Atlanta, Georgia.

Dr. P. T. Eke, School of Postgraduate Dentistry, Emory University, Atlanta, Georgia.

Ms. K. Teets, Naval Sea Systems Command, Washington, D.C.

NOVEMBER 1989

Dr. J. Saunders, Difco Research and Development, Ann Arbor, Michigan.

COL R. Hall, VC, USA, Naval Medical Research and Development Command, Bethesda, Maryland.

MAJ M. W. Carr, VC, USA, United States Army Medical Department Activity, Fort Leonard Wood, Missouri.

SFC R. E. Brackbill, United States Army Medical Department Activity, Fort Leonard Wood, Missouri.

DECEMBER 1989

MAJ D. Wolf, United States Army Dental Clinic, Fort Sheridan, Illinois.

Mr. J. J. Walkup, United States Army Dental Clinic, Fort Sheridan, Illinois.

SSG R. Stevens, United States Army Dental Clinic, Fort Sheridan, Illinois.

DISTINGUISHED VISITORS (Continued)

DECEMBER 1989 (Continued)

CPT M. D. Barnes, United States Army Dental Clinic, Fort Sheridan, Illinois.

CPT R. Wetzel, United States Army Dental Clinic, Fort Sheridan, Illinois.

JANUARY 1990

Ms. K. A. Harmon, Naval Hospital Branch Clinic, Bldg. 237, Great Lakes, Illinois.

FEBRUARY 1990

RADM M. C. Clegg, DC, USN, Chief Naval Dental Corps, Office of the Chief of Naval Operations, Washington, D. C.

Dr. M. O. Wasfy, Naval Medical Research Unit #3, Cairo, Egypt.

Dr. D. Stein, University of Maryland, College Park, Maryland.

MARCH 1990

CAPT R. W. Gaugler, MSC, USN, Executive Officer, Naval Medical Research and Development Command, Bethesda, Maryland.

MAJ C. R. Wanzer, United States Army Institute of Dental Research, Washington, D.C.

COL W. R. Posey, United States Army Institute of Dental Research, Washington, D.C.

COL G. Scug, United States Army Institute of Dental Research, Washington, D.C.

Dr. J. C. Sloughton, M.D., United States Army Medical Research and Development Command, Fort Detrick, Maryland.

Dr. J. D. Henderson, American Association for Accreditation of Laboratory Animal Care, Bethesda, Maryland.

Dr. E. W. Haller, American Association for Accreditation of Laboratory Animal Care, Bethesda, Maryland.

DISTINGUISHED VISITORS (Continued)

APRIL 1990

R. J. Earyes, USA HFPA SGFP-DD, Falls Church, Virginia.

J. R. Temple, USA HFPA SGFP-DD, Falls Church, Virginia.

MAY 1990

CAPT J. N. Woody, MC, USN, Commanding Officer, Naval Medical Research and Development Command, National Naval Medical Center, Bethesda, Maryland.

JUNE 1990

LT E. Bristow, USN, Officer in Charge, Personnel Support Detachment, Naval Hospital, Great Lakes, Illinois.

JULY 1990

Dr. J. Weintraub, Department of Dental Ecology, Chapel Hill University, North Carolina.

CAPT R. W. Gaugler, MSC, USN, Executive Officer, Naval Medical Research and Development Command, Bethesda, Maryland.

LCDR C. Puksta, MSC, USN, Naval Medical Research and Development Command, Bethesda, Maryland.

LT M. Dobson, MSC, USN, Naval Medical Research and Development Command, Bethesda, Maryland.

LT J. J. McQuade, MSC, USN, Naval Medical Research and Development Command, Bethesda, Maryland.

HCMC A. J. Tremblay, USN, Command Master Chief, Naval Medical Research and Development Command, Bethesda, Maryland.

Ms. J. Speake-Ponow, Naval Medical Research and Development Command, Bethesda, Maryland.

Mr. K. Johnson, Naval Medical Research and Development Command, Bethesda, Maryland.

AUGUST 1990

RADM J. W. Partington, Commander, Naval Training Center, Great Lakes, Illinois.

DISTINGUISHED VISITORS (Continued)

SEPTEMBER 1990

Dr. J. M. Saunders, Difco Research and Development, Ann Arbor, Michigan.

HONORS, AWARDS, POSITIONS HELD, CEREMONIES, STAFF ARRIVALS/
DEPARTURES AND REENLISTMENTS

NOVEMBER 1989

DT2 W. M. Hogan received a Letter of Appreciation from the Commander, Naval Training Center, Great Lakes, for his contributions to the 1989 All Hands Navy Birthday Ball.

JANUARY 1990

LCDR R. W. Schutt received a Letter of Commendation from the Commanding Officer upon his transfer to USS Mount Whitney (LCC 20), Norfolk, Virginia.

ENS D. W. Meeker reported for duty from Sheppard Air Force Base, Texas.

Dr. L. G. Simonson received a Certificate of Commendation from the Commanding Officer for three pending patents.

Mr. E. D. Pederson received a Letter of Commendation from the Commanding Officer for developing, implementing and maintaining an active command safety program.

The following received a Certificate of Commendation from the Commanding Officer for receiving an "Outstanding" on the October 1989 Physical Readiness Test:

CAPT J. W. Rodden

DT2 F. T. Smith

The following received a Letter of Commendation from the Commanding Officer for their selection as NDRI's Supervisory Safety Award for FY89:

SKC G. A. Wright

HM1 S. D. Encabo

The following received a Letter of Commendation from the Commanding Officer for their selection as NDRI's Individual Safety Award for FY89:

HM3 S. T. Berry
HM2 L. C. Neil

HM2 H. E. Morton
Mr. J. H. Ringgold

FEBRUARY 1990

HM2 L. C. Neil received a Letter of Commendation from the Commanding Officer upon his transfer to Naval Hospital, Rota, Spain.

DT2 W. M. Hogan was awarded a Navy Achievement Medal.

HONORS, AWARDS, POSITIONS HELD, CEREMONIES, STAFF ARRIVALS/
DEPARTURES AND REENLISTMENTS (Continued)

APRIL 1990

DR J. F. Triplett reported for duty from Naval School of Dental Assisting and Technology, San Diego, California.

MAY 1990

ENS D. R. Meeker received a Letter of Appreciation as Ticket Representative for the 1990 Armed Forces Ball from the Commander, Naval Training Center, Great Lakes, Illinois.

HM1 L. Nelson reported for duty from 2nd Marine Air Wing, Fleet Marine Force, Atlantic, Cherry Point, North Carolina.

DT2 F. T. Smith received a Good Conduct award.

HM2 P. J. Covill received a Good Conduct award.



Captain J. C. Cecil III, DC, USN, presenting
DT2 F. T. Smith with a Good Conduct Award

HONORS, AWARDS, POSITIONS HELD, CEREMONIES, STAFF ARRIVALS/
DEPARTURES AND REENLISTMENTS (Continued)

MAY 1990 (Continued)



Captain J. C. Cecil III, DC, USN, presenting
HM2 P. J. Covill with a Good Conduct Award

HM3 S. T. Berry received a Letter of Commendation from the
Commanding Officer upon his discharge from military service.

DA A. M. Westlake received a Letter of Commendation from the
Commanding Officer upon her discharge from the United States
Navy.

JUNE 1990

LCDR J. C. Kuehne received a Letter of Commendation from the
Commanding Officer upon his transfer to Naval Dental Research
Institute Detachment San Antonio, Texas.

LT D. R. Isley received a Letter of Commendation from the
Commanding Officer upon his transfer to the Bureau of Medicine
and Surgery, Washington, D.C.

DT2 W. M. Hogan received a Letter of Commendation from the
Commanding Officer for his selection as NDRI's Sailor of the
Year, 1989.

HONORS, AWARDS, POSITIONS HELD, CEREMONIES, STAFF ARRIVALS/
DEPARTURES AND REENLISTMENTS (Continued)

JUNE 1990 (Continued)



Captain J. C. Cecil III, DC, USN, presenting
LCDR J. C. Kuehne with a Letter of Commendation

JULY 1990

CAPT R. G. Esquire reported for duty from Naval Dental Clinic, Pearl Harbor, Hawaii.

CDR D. M. Meyer reported for duty from Naval Dental Clinic, Orlando, Florida.

DR J. F. Triplett was advanced to E-2.

AUGUST 1990

CAPT J. W. Rodden received a Letter of Commendation from the Commanding Officer upon his transfer to Naval Dental Clinic, Camp Pendleton, California.

ENS D. W. Meeker received a Letter of Appreciation from the Commander, Naval Training Center, Great Lakes for his volunteer efforts in the Children of the Future Program, Great Lakes/North Chicago School District 187.

HONORS, AWARDS, POSITIONS HELD, CEREMONIES, STAFF ARRIVALS/
DEPARTURES AND REENLISTMENTS (Continued)

AUGUST 1990 (Continued)



Captain J. C. Cecil III, DC, USN, presenting
Captain J. W. Rodden with a Letter of Commendation

HMC P. B. Mangaran reported for duty from Command Fleet
Activities, Chinhae, Korea.

DR J. M. Thompson reported for duty from Naval School of
Dental Assisting and Technology, San Diego, California.

HM1 L. Nelson was assigned Temporary Additional Duty
COMUSNAVCENT LOGISTICS SUPPORT GROUP, BAHRAIN.

The following personnel received a Letter of Appreciation
for their contributions while temporarily assigned to the Branch
Dental Clinic, United States Naval Academy, Annapolis, Maryland
from 23-31 July 1990 from the Commanding Officer, National Naval
Dental Center, Bethesda, Maryland:

LCDR K. T. McMahon
DT2 L. G. Morgan
DA J. F. Triplett

DT3 S. B. Monroe
LCDR J. W. Simecek

SEPTEMBER 1990

LT C. Y. Llodra reported for duty from Naval Dental Clinic,
Great Lakes, Illinois.

DT2 J. G. Morgan was awarded the Navy Achievement Medal.

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