Report On

Sabbatical Leave

Submitted To

The Board of Trustees

Mt. San Antonio College at

Walnut, California

Ed Sounhein

November 1981

Table of Contents

Acknowledgment

I want to thank the Mt. San Antonio Board of Trustees for giving me the opportunity to review Scientific Journals in libraries of universities where research is bring conducted. Because of the esoteric nature of the scientific journals they are not available in the libraries of all colleges and universities.

While it is true that while teaching I make an effort to read current literature that is availble in our fine library of Mt. San Antonio College, in no way would it be economically justified for our library to subscribe to journals that would rarely be looked at.

Furthermore my class schedules of from 18 hours to 21 hours of in-the-classroom per week plus office hours, meetings, laboratory preparations such as culturing the organisms, working on microscopes and other lab equipment, simply does not permit me time to keep abreast of the many changes and advancements occurring in the medical aspects of the science of microbiology.

Objectives of Sabbatical

The objective of my sabbatical leave was to try to bring myself up to date with some of the new concepts that have been emerging in the science of biology and microbiology.

To accomplish this end I planned on spending as much time as possible reading the latest scientific journals that would be available primarily at Cal Tech in Pasadena. Inasmuch as I have done research at that great institute a couple of times I am familiar with the library facilities. In addition, I am still welcome in the laboratories of the professors and research associates I worked under.

In the biology division at Cal Tech there is usually a seminar or two each week which I planned to attend. Also there were several symposia in Immunology scheduled at UCLA that I wanted to attend.

It was also my intention to visit other schools and research labs to see what kind of material was in use in their courses of Microbiology for Nurses and the nature of the research being conducted.

Activities Conducted During Sabbatical Leave

I began my visits to the Millikan library at Cal Tech during the first week of the sabbatical which commenced on February 2nd, 1981. Except for times when I was visiting research laboratories or attending a symposium at UCLA the visits continued throughout the spring semester until the end of the semester in June.

My daily schedule included a trip to the University in Pasadena where I went to the Millikan library, had lunch in the cafeteria, returned home sometime during the afternoon. At times when a seminar was held I would stay until it began at four until about six. Sometimes the seminar was conducted earlier, for example at one or two o'clock.

During my visits to the library I sometimes, but not every day, would have the librarian sign a form that I made up confirming that I was at the library.* I did not have the librarian sign a form every day as I didn't want to make a nuisance of my self. I'm sure that the staff thought it rather amusing but I wanted to have some way of confirming that I fulfilled the requirements of my application for the sabbatical. I want to make it clear too that no one suggested that I did this and I appreciated the trust the Salary and Leaves Committee and the Board of Truestees had in me in granting the sabbatical for study purposes. It was a rare opportunity to satiate my thirst for new knowledge and to review some of the old.

My travels during the sabbatical were very limited inasmuch as most of my time was spent studying research journals in the library at Cal Tech. However, March 23-April 5 I did visit the library at the University of

*see appendix

Berkeley. While in Northern California I met Dr. L. Charvet whom was retiring from teaching and practicing medicine at the University of California at Berkeley. During the course of our conversations I mentioned that I was a professor of microbiology at Mount San Antonio College and have many students in medical training courses. Dr. Charvet very graciously gave me his personal collection of about 800 prepared slides of tissues that were pathologically abnormal. Included in the collection, all labeled and stained are examples of tissues damaged by classical disease organisms and cancerous cells.

Dr. Charvet felt that the students in nursing and other related fields could gain knowledge from such a collection. They will now be available in the microbiology laboratory at Mt. San Antonio College.

In addition to my trip to Northern California, I flew on May 26 to Tacoma Washington where I visited with a research colleague, discussed a theory on lymphocytes which I am interested in doing a research project on in the future. I also visited the library of the Pacific Luthern University at Tacoma. The University also has a program in Professional Nursing and I was interested in the text books used in their courses of microbiology. They were similar to the texts we use at Mount San Antonio College.

Summary

The value of the sabbatical leave to me was to increase my background knowledge in the biological sciences, specifically in the field of Immunology. It gave me an opportunity to visit laboratories at Cal Tech where research is being conducted in biological and micrbiological fields. These visits allowed me to observe at first hand the use of equipment and techniques used in culturing bacteria and other cells. This will enable me to better acquaint the students in microbiology with up to date principles in use of laboratory equipment such as pipetting devices to prevent the laboratory technicians from becoming contaminated with pathogenic, i.e. disease causing organisms.

During my sabbatical I visited the research center at the City of Hope many times to talk with research scientists about their work. Ilearned that some laboratories especially those of Dr. Teplitz engaged in the study of cells are making use of the newly discovered phenomenon of monoclonal antibodies. They are trying to isolate cells that will produce singular immunoglobulins which can be used in diagnosis and treatment of diseases. My understanding of this new phenomenon in immunology wil enable me to build in the minds of my students in the medical fields not only the concept but how the antibodies will be used for diagnosis and therapy in practise. Most of my students are training to be nurses and laboratory technologists.

During the sabbatical I spent many hours in the stacks of several libraries reading scientific journals describing current concepts. For example I have determined what knowledge there is in the field of allergy with respect to

the art of desensitizing people that are hypersensitive to various allergens. I was primarily interested in the current methods used by the clinicians. Again this valuable information for students in the nursing and other medical fields.

The search of the literature enabled me to have a better understanding of the role of lymphcytes in allergies, tissue transplants and in immunity. I now have more information about the kinds of lymphocytes, their life spans, and substances they produce. Students in the medical fields need to know about the immune mechanism and its role of keeping the body well and warding off pathogens.

My visit to the Univeristy of California at Berkeley enabled me to get acquainted with a Dr. Charvet a gynecologist who taught in the school of medicine at Berkeley and had just retired. When I talked with him and informed him that I was a professor at Mount San Antonio College teaching nurses and lab technicians he very generously donated nine boxes of his life long collection of microscope slides. Though it is difficult to ascertain in terms of money the value of approximately 800 slides their true value lies in my ability to now let the students observe for themselves what damage organisms can do to uterine structures as well as mammary tissue, skin and other tissues of the body. There are rare slides of typhoid fever bacteria, bubonic plague bacteria, coccidioidiomycoides organisms as well as other typically pathogenic organisms that are unavailable in the ordinary biological supply catalog.

My trip to Tacoma Washington was for the purpose of visiting with a research person learned in the field of Immunology. I discussed with him

a research project I am interested in conducting. In addition the 27 of May 1981 I visited the Pacific Lutheran University library at Tacoma Washington. The university has in its curriculum a Bachelor of Science in Nursing (BSN) and I wanted to observe what kind of text books were in use in the course. Time did not permit any other travels.

To sum up because of my sabbatical I was able to accrue knowledge that will enable me to be more up to date in the classtoom of biology and microbiology subjects.

Appendix

Seminars at Cal Tech

February 3 Dr. Branton Harvard University
Topic: Spoke about proteins on the erythrocyte membrane and their interactions. Ellucidated the trilaminal nature of the membrane of blood cells.

February 5 Dr. Erlanger Columbia University
Topic: Spoke on a model system for studies on the photoregulation of macromolecules.

February 10 -Dr. E. Lazarides of Cal Tech
Topic: Spoke on the molecular morphogenesis in muscle cells. Described how the molecules which make up muscle fibrils are assembled in the sarcoplasm of the cells.

February 26 Dr. S. Scherer of Stanford University
Topic: Spoke about the use of mast cells fusing together to produce a change in the structure of the chromosomes which led to the production of a protein that had some use in medical therapy.

March 10 Dr. P. Citar Albert Einstein School of Medicine
Topic: Electron Microscopy of Cilia Movement. Described the differences between the movement of flagella found on protozoa and the flagella found on bacteria. Discovered that spermatocytes of animals have tails which rotate in the same manner as those of protozoa.

March 13 Dr. Shimkea of Cal Tech
Topic: Amplification of Genes for Drug Resistance. Described how it was possible to use a chemical called Methotrexate, an analog of Folic Acid, to treat animal cells (which were in the process of cell reproduction) so that the chromosomes would become more visible. This enabled cytologist to look for markers on the linear strand of the chromosome.

April 8 Dr. J. Morgan Cal Tech
Topic: Acid Rain on a Local, Regional and Global Phenomenon. Described how the pH of rain is sometimes very acidic which has an effect on flora and fauna of streams.

April 14 Dr. E. Rothenberg of the Salk Institute
Topic: Development of Changes in Gene Expression in Early T Lymphocytes. Described how T cells, part of the immune system of animals produce cytotoxic substances which kill foreign cells.

April 15 Dr. Gordon University of Washington
Topic: Crown Gall Growth. Described how insects are responsible for the spread of a polyhedral RNA virus which was responsible for the production of a tumorous growth on plants. These tumors are called Crown Galls. He was able to produce the galls on plants in laboratory by transferring fluids from one plant to another.

April 28 Dr. Ilke from Fredericks University
Topic: Viruses Causing Leukemia in Mice. Described experiments which demonstrated that some leukemias in mice can be caused by viruses. After the viruses bring about changes in the chromosomes of the cells they disappear from the cells but the leukemia then persists.

May 1 Dr. Eisenbery U.C.L.A.
Topic: Molecular Anatomy and Physiology of Membrane Proteins Described the kinds of molecules found in the microscopic structure of the membranes of cells.

Journals and Topics

Journal of Clinical Immunology and Immunopathology Vol 15 ppg 314-317, '80. "A Search for Optimal Conditions For Culturing Allografts Before Transplanting" Talmage and Dart. Survival of mouse thyroid allografts was found to be influenced by the oxygen pressure, time and temperature. Pretreatment of the donor mouse with hydrocortisone also helped to prolong the grafts.

Journal of Blood. Vol 55#6 June '80 pg 875. "Towards Tumor Therapy and Interferons" Part 11 In Vivo Effects Alvin Mauer. The gist of this paper was an effort was made to trace the pathway of injected human leucocyte interferon. They found only a fraction of the administrated interferon reached the target organ. They discovered that there is several different kinds of interferon. The kind is related to the cells that produced it.

Journal of Blood. Vol. 55 #6 June '80 pg. 875. "Blood Interferons, Production and Properties" Lindenman. In this paper, Lindenman described how blood interferon works. Viral messenger RNA can be inhibited. The interferon interrupts the assembly or release of the mature virons from the cell.

Journal of Blood. Vol. 56 #1 July '80 "Therapy of Acute Lymphoblastic Leukemia in Childhood". A.M. Mauer. In this paper was an excellent description of the clinical features of acute Lymphoblastic Leukemia which are indicative of a poor survival. 1. High white count 2. Under two years and over 10 years. 3. Mediastinal mass on chest roetgenogram. 4. Early CNS leukemia. 5. Black race. 6. Male. With treatment survival for five years was predicted.

Journal of Blood. Vol. 56 "2 August '80. Cryopreservation of Human Granulocytes: Study of Granulocyte Function and Ultrasfructure." P. Boonlayangoor. The gist of this paper was they discovered that human granulocytes can be preserved with 5-10% dimethyl suloxide DMSO at -80°C for two months. After being frozen for two months they still survive.

Journal of Immunology. Vol. 124. No. 6 June 80. pg 2527. This paper described about 56 diffefent products produced by lymphocytes of the immune system in response to a foreign antigen. "The Unspecificity of Cellular Reactions" B. Bloom.

Journal of American Society of Hematology. Vol. 55 "6 Jun '80. pg. 1560. Review, Granulocyte Transfusions: Current Status". Don Higby. A very interesting article in which they described an experiment in which they injected human granulocytes into a very ill patient tht was ill with septicemia. Was found to be a very effective treatment but only useful when septicemia was there.

Journal of Blood. Vol. 57 #1. Jan. '81. "Platelet recovery from Aspirin Inhibition in Vivo". Smith and Murphy. This paper described an experiment which demonstrated that it takes from 24 to 48 hours for platelets to recover in the blood stream following the ingestion of a single aspirin.

Journal of Transplantation Proceedings. Vol. 22. #3. Sept. '80 Kohler and Milstein. In this paper there is a description of how immunoglobulins that are derived from monoclonal hybrid cells will be used in the future for the treatment of cancer and transplantation of tissues.

Journal of Blood. Vol. 56 #3 Spet '80. "Ultrastructural Evidence For The Common Origin of Human Mast Cells and Basophils". Dorthea Zucker. This paper provides experimental evidence that mast cells as well as basophils come from bone marrow. They both have the same functions, look alike and possibly are the same cells.

Journal of Seminars in Hematology. Vol. 28 #1 Jan. '81. "Blood Groups A B H and Li Antigens of Human Erythrocytes". Sen-itiroh Hakomori. Experiments described in this paper demonstrate that blood group antigens are insoluble parts of the cell membrane. The antigens are attached to the membrane by compounds called glycosphengolipids.

Journal of Seminars in Hematology. Vol. 27 #1 Jan. 80. "Markers of Human Lymphocytes". Sen-itiroh Hakomori. This paper describes the embryological source of the T and B cells of the immune system and how they migrate through the thymus and cells of the gastro-intestinal tract where they are activated.

Journal of Seminars in Hematology. Vol. 17 #2 Apr. 80. "Effect of Alcoholism on Hemostasis: Yang Liu. This paper demonstates that there is associated with alcoholism many abnormalities of the blood. The blood clotting and blood platelets are interfered with.

Journal of Seminars in Hematology. Vol 17 #2 Apr. '80 "Effect of Alcohol on Leucocytes" Y. Liew. This paper describes the effects of alcohol on patients with Leukppenia. They increased suceptibility to bacterial infections particularly of the lungs. Mortality is much more likely in alcoholics with lung infections.

Journal of Transplantation Proceedings. Vol. 12 #3 '80. "The induction of Transplantation Tolerance." J. Fabre. Describes experiments which use pepsin degredation of sera to prevent or retard the sloughing of transplants.

Journal of Hematology. Vol. 10 #1 '81. "The Immunological and Cytological Characterization of T-cell Lymphoprolipherative Diseases". T. Spira. This paper describes a disease of the immune mechanism. One of the cells of the system namely a T-cell becomes cancerous and keeps proliferating. In spite of the increase in the amount of these humoral cells in the blood stream the immunological response to an antigen is very poor. The disease is called T-cell Leukemia and prognosis is very poor.

Research Laboratories.

Department of Cytology and Pathology at City of Hope, Duarte, Calif. Dr. Ray Teplitz is the chairman of the department and Dr Joan Glotz is a research biologist. I made weekly visits to their laboratories throughout March and April.

The nature of research being conducted in their laboratories is a study of abnormal cells found in the fetal fluids collected by amniocentesis. They have had a measure of success in identifying cells that carry genetic markers for hereditary diseases.

Department of Radiology at City of Hope Duarte California. Dr. Archambeau has a staff of research scientist working on the effects of radiation on the skin of fetal pigs. They are studying the relationship of recovery of skin cells to dosage of radiation. I made weekly visits to there lab and to the hospital ward to observe various equipment now available.

Symposium

On Feb. 17 to Feb.20 I attended a symposium at the University of California at Los Angeles, School of Medicine. The Symposium was sponsored by the Dept. of Anatomy and was held in the auditorium, Neuropsychiatric Institute at UCLA campus.

The topic was "Developmental Immunology: Clinical Problems and Aging". There were five sessions spread over the four days and each session was devoted to a specific topic. Learned individuals gave papers on their specialties.

Session I: Basic Immunobiology. Papers were given on the evolution of antibody genes and the diversity of the genes.

Session II: Immunobiology. Speakers gave papers on the nature and development of the antigenic receptors.

Session III: Immunobiology. Papers were given on the development of the immune system in humans and when the T and B cells originated.

Session IV: Immunopathology of the Immune System. Various diseases were discussed which are related to a malfunctioning of the immune system. Autoimmune diseases.

Session V: Aging and the Immune system. Much research is being conducted trying to locate genes which regulate aging. The science is still in its infancy.

To Whom it May Concern,

This date E.M.Sounhein, professor, Mt San Antonio College, 17

visited this facility to further his graduate studies in the sciendes.

MILLIKAN

facility

signed

3-10-81

date

To Whom it May Concern,

This date, E.M. Sounhein, professor, Mt San Antonio College, Walnut, Calif. visited this facility to further his graduate studies in the sciences.

California Inst. of Technology

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To Whom it May Concern,

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Caltech
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Caltech
facility

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Mt SAC
facility

George L Reuter
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4/21/81
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Caltech
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To Whom it May Concern,

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Caltech
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This date, E.M. Sounhein, professor, Mt San Antonio College, Walnut, Calif. visited this facility to further his graduate studies in the sciences.

Cal-Tech - Millikan Library
facility

signed

5 May 81
date

AGREEMENT TO RETURN TO SERVICE

I Edward M. Sounhein, having been granted Sabbatical Leave for the spring semester, 1981 do agree to abide by the conditions of the Sabbatical Leave Policy of Mt. San Antonio College. I will return to duty following my Sabbatical Leave and agree to serve the Mt. San Antonio College District for One (1) year. Failing to return, I further agree to reimburse the Mt. San Antonio College District any and all monies paid me while on Sabbatical Leave. Executed on the 5th day of May, 19 80.

Edward M. Sounhein
Employee

John P. Randall
College President

Alfred M. Diaz
Secretary of the Board of Trustees

Notarized

OFFICIAL SEAL
EUNICE V ZOLLNER
NOTARY PUBLIC - CALIFORNIA
LOS ANGELES COUNTY
My comm. expires OCT 9, 1983

Eunice V. Zollner

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