Fellowship
Directory

Industry's Responsibility *for* Basic Research

SWIFT'S 1946

College Essay Contest

SWIFT & COMPANY • U.S.A.

Announcement

OF THE

Swift College Essay Contest

FOR 1946

The provisions are:

1. Contest will be open to all agricultural students enrolled in State Agricultural Colleges. It is suggested that the contestants be boys due to the conditions under which the trip participants have to meet and study the marketing of livestock.

2. **The purpose of this contest shall be to select a boy who will receive as an award an amount of money to be used for his traveling and other expense in making a trip to Chicago to attend the International Livestock Exposition and participate in a market study program which will be outlined by Swift & Company.**

3. No definite subject will be assigned for the essay. Each contestant may choose his own subject. The essay, however, must discuss the methods employed by the meat packing business in marketing meats, poultry, eggs, butter, and cheese. It is suggested that the essay cover the distribution of all of these products as a group rather than writing about the handling of any one of them.

   Swift & Company will furnish literature and references, when requested, to enable the contestants to become familiar with the general subject of marketing meat packer products.

4. It is recommended that the essay contain not more than 1,500 words. However, the

person in charge of the contest at each college or the contestant may determine the length of his essay.

5. The essays will be judged by a person, or group of persons, selected by officials of the State Agricultural College.

6. Each state contest will be a separate one. There will be no interstate contest.

7. Names and home and college addresses of all contestants will be furnished Swift & Company.

8. The award is made with the understanding that the winner participates in a market study of livestock and meats beginning at 9:00 a.m. on Sunday, December 8, 1946, and ending about 3:00 p.m., on Wednesday, December 11. The market study is set on the above dates to enable participants to see some of the International Livestock Exposition, which is held in Chicago from November 30 to December 7, inclusive.

9. It is to be understood that the trip winner will arrange to be in Chicago and participate in the entire market study. This is requested because if he does not attend all of the meetings and take part in all of the activities, it will be impossible for him to get a complete picture of the marketing of livestock and meat packer products.

10. Contestants will be expected to stay at a hotel designated by Swift & Company, where as reasonable a rate as possible will be obtained. Contestants will pay their own hotel bills.

11. All essays submitted in this contest are to be forwarded to Mr. F. M. Simpson, Agricultural Research, Swift & Company, Chicago 9, Ill., at the conclusion of the contest.

12. Check for the amount of the award will be forwarded to winners early enough to permit using for expenses of the trip.

BRIEF OUTLINE OF THE MARKET STUDY

It is planned to spend all day Sunday going over the history and development of the meat packing business, discussing many of the important problems confronting the livestock and meat industry. Monday and Tuesday mornings it will be possible for trip winners to spend a portion of the morning in the office with those persons who give the buying orders of cattle, calves, lambs, and hogs, then go to the stock yards and accompany the buyers on their yard operations. In this way trip participants will have an opportunity to study the livestock buying methods of the meat packers.

Monday afternoon the group will be given information regarding the dairy and poultry operations of meat packers.

Tuesday afternoon will be devoted to a detailed trip through the meat plant to observe processing methods for meats and by-products.

Wednesday morning the group will be divided and sent to various branch houses where they will be placed with salesmen of beef, lamb, veal, pork, and dairy and poultry products so that they may have an opportunity to study the methods of selling meats and dairy and poultry products.

A short meeting will be held Wednesday afternoon where questions may be raised and the study summarized. The market study will be concluded by the middle of Wednesday afternoon.

There will be an escorted sightseeing trip on Thursday for those who wish to remain in Chicago an extra day. Included in this trip will be the Chicago Natural History Museum, Aquarium, Planetarium, Museum of Science and Industry, and the Chicago Board of Trade.

Guests will also have an opportunity to see and hear a nation-wide radio broadcast over one of the major networks.

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SWIFT
HIGH SCHOOL
ESSAY
CONTEST

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SCHOOL YEAR · 1945-1946

SWIFT & COMPANY - U.S.A.

Announcement

Swift High School Essay Contest

School Year 1945—1946

An Essay Contest open to students (both boys and girls) enrolled in one or more agricultural courses in the various high schools of the United States is announced by Swift & Company. No boy or girl who is not enrolled in a high school agricultural course is eligible for this contest. No student will be eligible to compete in the contest without the written consent of the teacher of his agricultural courses or the principal of his high school. Members of the families of Swift & Company employes are not eligible to compete. A winner of any one of the first seven prizes in a previous Swift Essay Contest is not eligible to win a prize in this contest.

No definite subject is assigned, each contestant choosing his own. The essay must discuss the methods employed by the meat packing business in marketing meats, poultry, eggs, butter, and cheese. Sufficient literature and references will be mailed upon request to enable the contestants to become familiar with the general subject of marketing products meat packers handle.

Other requirements of the contest follow:

1. The essay must be typewritten double-spaced, on one side of the paper only.
2. It must be typed on regular-sized theme paper, approximately 8½ x 11 inches.

3. It is recommended that the essay contain not more than 1,500 words. However, each contestant may determine the length of his essay.
4. Essays will be graded on thought, originality, expression, neatness, spelling, and the rules of grammar.
5. *Contestants will fill out the enclosed application blank and mail to Mr. F. M. Simpson, Agricultural Research, Swift & Company, Chicago 9, Illinois. Upon receipt of the application blank, the applicant will be mailed literature on the subject to be discussed in the essay, a list of references, and an entrance blank which is to be signed by the contestant's high school agricultural instructor or principal, and sent in with the essay when submitted.*
6. The name of the writer must not appear on the essay.
7. Essays must show a post mark mailing date of not later than midnight, **February 1, 1946.**

PRIZES WILL BE DISTRIBUTED AS FOLLOWS:

One Prize of	$100
One Prize of	60
Five Prizes of	35 each
Ten Prizes of	25 each
Fifteen Prizes of	10 each
Twenty Prizes of	5 each

This means that 52 contestants will receive prizes for their efforts.

If you want more information or are interested, write to Mr. F. M. Simpson, Agricultural Research, Swift & Company, Chicago 9, Ill.

(In event agricultural teachers or chapter advisers desire to order literature for the entire group they represent, we will be glad to furnish as many sets of literature as they require. A definite number should be requested.)

Develop Your Poultry Production Talents

Take Part in the National 4-H

POULTRY ACHIEVEMENT

Contest — 1946

The purpose of this program is to encourage 4-H Club members to achieve the following

Objectives

1. To acquire information and skill in poultry raising and the production of eggs.
2. To assist in the production of eggs, and of chicken and turkey meat in order to provide adequate supplies.
3. To learn to appreciate the nutritive value of eggs and recognize their importance in the diet and their contribution toward health and better farm family living.
4. To acquire a knowledge of those grading, marketing and merchandising methods of poultry and poultry products which conserve the quality found in fresh farm products.
5. To study the scientific developments in poultry production and to demonstrate the application of new findings to one's own poultry flock.
6. To learn the place of poultry in the economy of the general farm.

Records in 4-H Poultry Production Bring College Scholarship Awards

Above are the ten national winners in the 1945 4-H Poultry Achievement award program. Each received a trip to the Club Congress in Chicago and a $200 college scholarship, provided by Swift & Company. They are, from left, front row: Stanley Wakeman, Edinburg, Va.; Bernice Pickle, Hamilton, Miss.; Lydia Bray, Wrightsville, Ga.; and Charles Sperow Jr., Martinsburg, W. Va. Back row: Frank Kimzey, Torrington, Wyo.; Kenneth Blauvelt, Erin, N. Y.; J. Glyndon Stuff, Dixon, Ill.; Howard Carlson, Parkers Prairie, Minn.; Harold Coleman, Gloucester, Mass.; and John Ungethum, Howell, Ind.

THE poultry project is a fascinating experience from the time the eggs hatch. From the moment the little creatures break out of their shells, they need shelter, warmth, sanitation, feed and water. Every stage in their growth and development toward maturity requires a change in feeding care and management.

The boy or girl enrolled in a 4-H poultry project is indeed fortunate. He or she learns about feeding, adequate rations, proteins, minerals and vitamins—what makes poultry grow—why chicks can develop so rapidly. No 4-H project offers a greater opportunity to learn more about proper production methods.

But when it comes to being a county, state or national winner, there are things to consider other than just having a good flock of poultry and realizing a profit. The committee of judges determining special award winners considers all of your 4-H poultry club accomplishments. That is, how you have expanded your poultry project from year to year, whether you have overcome obstacles, and whether you have adopted better methods.

The extra poultry activities you have taken part in are given credit, too. You will enjoy and profit from being on a poultry judging or demonstration team, participating in poultry tours, and visiting hatcheries, dressing plants or markets. The club responsibilities you have had and the leadership abilities you have displayed all are considered in the score. Above all, try to submit a complete poultry record supplemented with pictures showing progress in your project.

The National 4-H Poultry Achievement program is a top challenge to every rural boy or girl. Your County Extension Agent will be happy to provide further information.

Additional copies of this leaflet for distribution to interested leaders and members are available from the State Club Office or the National Committee on Boys and Girls Club Work.

REGULATIONS

Who May Participate

Bona fide 4-H boys and girls working under the supervision of the Extension Service and enrolled during the current year in a 4-H poultry project or activity, may participate.

How to Participate

To participate the 4-H Club boy or girl must do a good job in his or her 4-H poultry project. Before the final reporting date, the member should submit such records as may be requested by the County Extension Agent.

For State Winners

Participants must have passed their 14th birthday and must not have passed their 21st birthday on January 1, 1946, and must have completed at least three years of 4-H Club work including the current year.

See Your County Extension Agent for Complete Information

Conducted by the Extension Service of the State Agricultural College and the U. S. Department of Agriculture cooperating. Arranged and announced by the National Committee on Boys and Girls Club Work, 59 East Van Buren Street, Chicago 5, Ill.

AWARDS

Donor: SWIFT & COMPANY
Chicago, Illinois

★ County ★

Five sterling silver medals for blue award group.

County Medal

★ State ★

Recognition to a blue award group of five, four of whom are each to receive a $25.00 U. S. Savings Bond and one an all-expense trip to the 25th Anniversary National 4-H Club Congress to be held in Chicago, December 1 to 5, 1946, inclusive.

★ National ★

Ten college scholarships of $200 each will be presented to a national group selected from the State winners.

The State Extension Service accepting this activity will provide information and suggestions for carrying on the activity and helping 4-H Club members in reaching its objectives.

Industry's Responsibility

for

Basic Research

Swift & Company Fund for Basic Research,
a Program to Stimulate Basic Research
in Foods and Agriculture

By Roy C. Newton
Vice President in Charge of Research

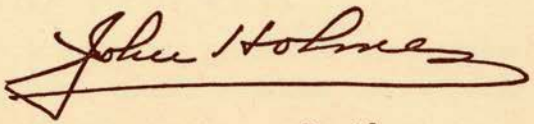
Swift & Company

FOREWORD

Science has taken on new significance to Americans at war and in peace. Recognizing that much of tomorrow's progress lies in a comprehensive and effective program of research, Swift & Company has underwritten several projects. Included in these projects are research grants to colleges and universities. They will support long-range basic studies which are designed to advance our fundamental knowledge, benefiting both the producer and the consumer of meat.

Augmenting these grants-in-aid are a number of fellowships for nutritional research which are helping build a high level of nutrition for the better health of all Americans.

These programs form part of a broad research development which is an integral part of our national progress. Ultimately, we feel, they will help point the way to a better fed America—an America of healthier, happier, and more efficient people.



President
Swift & Company

"Laboratories for Scientific Research Are Sacred Places Where the Future Is Born"

—Pasteur

SCIENTIFIC research is a method, or a systematic procedure, for obtaining new facts and applying them.

From this simple formula has evolved much of the progress which has created an easier life for us. Science and scientific research have been the tools which have improved the quantity and quality of our food supply; provided better protection from cold and storm; protection and recovery from ill health; faster and improved transportation; almost instantaneous communication; and devices of every type and description.

In developing and perfecting these useful discoveries and inventions, our research workers must be fortified with accurate, fundamental information. The tool for obtaining this fundamental knowledge is basic research. Through the medium of industrial research we translate these basic discoveries into the elements of modern living.

GENESIS OF PROGRESS

Basic research, then, is the genesis of our progress. It is the springboard which provides the impetus for scientific advancement.

One of the greatest assets this nation possessed on that fateful day of December 7, 1941, when we were plunged into war, was the vast store of scientific and technical knowledge of our scientists. It was our insurance policy for victory and we capitalized on it.

This fact was indelibly impressed upon Americans by the earth-shaking impact of the atomic bomb which brought the war to a dramatic end. Important also was the revelation that basic scientific research, completed years ago, had paved the way for harnessing atomic energy.

History records that our complete economic and social structure is closely interwoven with scientific advances. Our scientists and many leaders in industry are aware of this. Society, generally, likewise recognizes the contributions of science and its significance in building progress.

NEED STOREHOUSE OF FACTS

Industry fully realizes that research pays dividends. But it should also recognize that if industrial research is to flourish it must have an adequate storehouse of basic scientific facts upon which to build.

Leaders in science have expressed the belief that we are using up our storehouse of basic scientific facts faster than we are adding to it. Considerable concern has been expressed over this situation, but not because the pace of applied science is increasing so fast. Everyone agrees this is a good thing. Apprehension develops chiefly because support of exploratory research has not been proportionally emphasized.

There is a well-founded fear in many quarters that the source of endowed research from individuals and estates may "dry up." Many of those who feel this concern also believe that if basic scientific research is to continue its important function in our over-all progress, it must be supported from current earnings of industry. Industry's obligation is to fill this threatened void.

INDUSTRY'S RESPONSIBILITY

Industrial organizations, for many years, have been placing grants at universities and colleges for specific

projects and for general research. Each day it becomes more apparent that there is a definite need for a general program of promotion calling for more widespread support of basic research.

The challenge in the future lies in accelerating the pace of these basic studies in colleges and universities and under conditions which provide the greatest possible freedom for initiating this kind of research, developing it, and publishing the results. Colleges and universities reach out beyond the limited spheres of interest of any single industry or even a group of industries. They train the men who are needed to broaden our scientific frontiers.

With these thoughts in mind, the directors of Swift & Company worked out a plan for making grants-in-aid to research which would meet certain definite needs. Initial plans were drafted in 1943. We are now entering the third year of the program.

TO STUDY FOODS AND AGRICULTURE

Basically, the program was designed to stimulate long-range research in food products and in general agricultural problems. This research program now includes 38 grants-in-aid, totaling about $600,000. These grants will underwrite research projects lasting from one to eight years.

These grants mark a departure in the financing and administration of scientific research in that they provide for immediate payment to the schools for funds that will be expended over a period of years. Most of these basic research projects have just been started.

In some instances grants were made two years before the research was started, which provided plenty of time for careful project planning. Full discretion over administration of the funds and over the use of results is placed exclusively in the hands of the grantee institutions.

STABILIZES FINANCIAL SUPPORT

Chief advantage of this program for research grants is that it assures institutions the stability and continuity of financial support that is essential for basic research. Such a program also enables industry to provide funds in good years for research extending over a period of years. It enables schools to retain promising young scientists who, in the absence of adequate and assured funds, might otherwise be lost. It gives these schools the time which is necessary to uncover basic scientific truths.

Provision is made in the Swift & Company grants-in-aid for appointment of an advisory committee for each research project, with at least one member representing the industry related to the research. It is believed such an industry representative will bring to the research staff a clearer conception of the relationship of such basic studies to the actual problems and needs of industry. More important, perhaps, it will bring industry closer to the scene of basic science and give its leaders a clearer conception of its ultimate usefulness.

Research grants under this program made the last three years include:

Alabama Polytechnic Institute Agricultural Experiment Station, "A Study of Heritability in Swine," Mr. J. C. Grimes, Director (5 years).

University of California at Los Angeles, "Analysis of Amino Acids in Meat," Dr. M. S. Dunn (2 to 4 years).

University of California, Agricultural Experiment Station, "Lesions in Livers of Meat Animals," Drs. G. H. Hart and C. M. Haring (4 to 6 years).

Colorado Agricultural Experiment Station, "The Effects of Fringed Tapeworm and Other Parasites on Gains and Death Losses in Relation to Nutritional Diseases in Range and Feedlot Lambs and Means of Control," Dr. Homer J. Henney (3 years).

Cornell University Agricultural Experiment Station, "The Physiological Basis of Sterility in Livestock," Dr. S. A. Asdell (3 years).

Georgia Institute of Genetics, "Development of Improved Strains of Small Grain Adapted to Soils and Climate in the Southeast," Mr. M. W. H. Collins (4 years).

Harvard Medical School, "Histochemical Studies in Tissues," Drs. A. Baird Hastings and C. B. Anfinson (4 to 6 years).

University of Illinois, "The Chemical Composition of Forage Crops (cereals and other grasses, and possibly legumes) as Influenced by Environmental Factors," Dr. E. E. DeTurk (5 years).

University of Illinois Agricultural Experiment Station, "Nutritive Requirements of the Young Dairy Calf," Dr. H. H. Mitchell (3 years).

Iowa State College Agricultural Experiment Station, "A Study of Native Proteins," Director R. E. Buchanan (4 to 6 years).

Iowa State College Agricultural Experiment Station, "Research into Methods of Obtaining Statistics of Morbidity and Mortality in Livestock Populations, Directed Toward Making Estimates of Consequent Losses," Prof. G. W. Snedecor.

Kansas State College of Agriculture and Applied Science, "Improvement of Cream for Buttermaking," Dr. F. W. Atkeson (4 to 6 years).

University of Kentucky Agricultural Experiment Station, "A Study of Factors Affecting Utilization of Forage by Late Lambs," Dr. W. P. Garrigus.

Massachusetts Institute of Technology, "Colloidal Properties of Proteins," Dr. L. F. Hamilton (4 to 6 years).

Massachusetts State College, Agricultural Experiment Station, "Investigation of Respiratory Diseases in Poultry," Dr. Henry Van Rockel (4 years).

Michigan State College Experiment Station, "Improving Cream and Milk for Manufacturing Purposes," Prof. Earl Weaver and Dr. J. M. Jensen (2 years).

Michigan State College Experiment Station, "Turkey Diseases and Protozoan Parasitic Infestations," Drs. H. J. Stafseth, C. W. Darby, and P. A. Hawkins (4 years).

Michigan State College Experiment Station, "A Study of the Microscopic Anatomy of the Fowl," Dr. V. R. Gardner, Director, and Dr. Berley Winton (2 years).

University of Minnesota Department of Agriculture, "Virus Diseases of Food-producing Animals," Drs. M. H. Roepke, H. C. H. Kernkamp, and D. R. Briggs (4 to 6 years).

University of Minnesota Department of Agriculture, "Physiological Studies of the Pig with Special Reference to the Factors Affecting Viability and Growth," Prof. L. M. Winters (5 years).

University of Missouri, College of Agriculture, "A Study of the Influence of Soil Composition and Treatment on the Composition of Forages and the Resulting Development of Animals," Drs. W. A. Albrecht, A. G. Hogan, and A. J. Dyer (5 years).

National Research Council, "A Service on Feed Composition," Dr. R. F. Griggs.

State of New Jersey Agricultural Experiment Station, "The Production and Characterization of Sub-acute Nutritional Deficiencies in Farm Animals," Dr. W. C. Russell (5 years).

Northwestern University, "Marketing of Meat," Prof. F. E. Clark (1 to 3 years).

Northwestern University, "A Study of the Chemistry of Amino Acids," Dr. Charles D. Hurd (4 years).

Ohio Agricultural Experiment Station, "The Physiology of Rumen Digestion and Special Reference to Bacteriological Studies," Mr. Paul Gerlaugh (3 years).

Oklahoma Agricultural and Mechanical College, "Mineral Supplement Requirements of Range Beef Cattle in Oklahoma," Director W. L. Blizzard and Prof. A. E. Darlow (4 to 6 years).

Oregon State College Experiment Station, "A Study of Food Preservation," Drs. E. H. Wiegand, Earl Litwiller, and H. S. Madsen (3 years).

Oregon State College Experiment Station, "Breeding and Management Factors as Related to Hatchability in Turkey Eggs," J. A. Harper and C. E. Holmes (4 years).

University of Pittsburgh, "A Study of the Molecular Structure of Glycerides, Natural and Synthetic," Dr. H. E. Longenecker (5 years).

Purdue University Agricultural Experiment Station, "The Future of the Livestock Industry in the United States," Dr. C. E. Young and staff (2 years).

Purdue University Agricultural Experiment Station, "Off-flavor Development in Fatty Foods of Both Animal and Vegetable Origin," Drs. F. W. Quackenbush, M. H. Thornton, C. Ray Thompson, and B. E. Horrall (4 to 6 years).

Tuskegee Institute Agricultural Research and Experiment Station, "A Study of Mung Bean and Other Special Proteins for Poultry Feeding," Dr. R. W. Brown (2 years).

Utah State Agricultural College, "The Nutritional Deficiencies in Range Forage and the Supplementary Feeding of Range Livestock," Dr. Louis L. Madsen (5 years).

The State College of Washington Agricultural Experiment Station, "A Fundamental Study of the Relationship of Nutrition to the Improvement of Animals for Meat Production Through Breeding," Drs. E. J. Warwick and M. E. Ensminger (5 years).

West Virginia University Agricultural Experiment Station, "Digestibility and Composition of Feeding Stuffs by Farm Animals," Dr. B. H. Schneider (1 year).

University of Wisconsin Agricultural Experiment Station, "To Determine How Much Fertilizer Can Be Used with Profit in General Farming in Wisconsin," Dr. Emil Truog (8 years).

University of Wisconsin, Department of Agricultural Economics, "Marketing Services and Marketing Charges," Dr. R. K. Froker (3 years).

FELLOWSHIPS IN NUTRITION

Prior to 1941, Swift & Company, like many other industrial organizations, had placed grants at colleges and universities for specific projects and for use by the schools on their general research program. Five years ago, when our nation was girding itself for war, our directors were impressed with the need for greater support for nutritional research. As one of the largest manufacturers and distributors of food products we accepted as a responsibility the support of research in human nutrition primarily because nutrition is our business.

This program has gone forward under two auspices—

First, we have been active in the organization and support of The Nutrition Foundation, which has for its sole purpose the advancement of knowledge in human nutrition.

Secondly, our directors have appropriated a total of $300,000 in the last five years for the placement of grants-in-aid to workers engaged in nutritional research. Since this program of nutrition fellowships was established, 77 grants to 29 schools have been made. Already some of the fruits of these research projects have been applied to our expanding knowledge of nutrition. The future holds promise for even greater results.

Current fellowships in nutrition include:

University of California, R. R. Grau, "Amino Acid Requirements of the Chick" (4th year).

University of Chicago, Dr. A. J. Carlson, "Diet in Relation to Health and Longevity" (5th year).

University of Cincinnati, Dr. T. D. Spies, "The Role of Proteins in Nutrition" (5-year project).

University of South California, Dr. H. J. Deuel, "A Study of the Comparative Rate of Absorption of Various Hydrogenated Fatty Materials Including Bland Lard" (1st year).

Columbia University, Drs. H. C. Sherman, A. W. Thomas, M. L. Caldwell, "Protein Enrichment of the Dietary as Related to Phosphorus and Riboflavin Requirements" (5th year).

Massachusetts Institute of Technology, Dr. R. S. Harris, "The Sparing Action of Fat on Protein" (1st year).

University of Minnesota, Dr. Irvine McQuarrie, "Protein Metabolism in Relation to Edema in Infants. Protein and Calcium Relationships in Diets of Normal Children and Children with Certain Bone Diseases" (2nd year).

North Carolina State College, Dr. W. J. Peterson, "Meat Packing By-products as Sources of Cystine in Swine Rations" (3rd year).

Northwestern University, Dr. Theron G. Randolph, "Nutritional and Physiological Aspects of Food Allergies" (1st year).

Pennsylvania State College, Drs. R. Adams Dutcher and R. C. Miller, "Factors Influencing the Value of Pork as a Source of the Vitamin B-Complex in the Human Diet" (4th year).

University of Pittsburgh, Dr. H. E. Longenecker, "The Efficiency of Food Utilization" (1st year).

Rutgers University, Dr. J. P. Allison, "Protein Metabolism Fund" (2nd year).

Stanford University, Dr. J. Murray Luck, "Separation and Characterization of the Protein of Certain Organs and Tissues" (1st year).

University of Wisconsin, Dr. C. A. Elvehjem, "A Study of the Significance in Normal Nutrition of the Newer Members of the Vitamin B-Complex, Especially Biotin and the Norite Eluate Factor from Liver" (5th year).

Dalhousie University, Dr. E. Gordon Young, "Dietary Requirements of Young Children" (1st year).

University of Manitoba, Dr. A. D. Robinson, "Thiamine Content of Canadian Foods and the Effect of Cooking Processes on It" (3rd year).

Macdonald College, Dr. W. D. McFarlane, "Incipient Changes Which Occur in the Fat and Protein of Foods During Processing and Storage" (1st year).

University of Toronto, Dr. E. M. Guest, "Effect on Learning of Added Thiamine in the Diet" (1st year).

University of Western Ontario, Dr. E. M. Watson, "The Role of Arginine in Growth and Reproduction" (3rd year).

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