

Minutes of a Meeting of the Undergraduate Council
10:30, Wednesday, January 21, 1998
#4

Harold Lang, Chair, Gordon Atkins, Acting Secretary, Gerald Coy
(for W. Shultz), Delmer Davis, Paul Denton, Annetta Gibson,
Gunnar Lovhoiden, Patricia Mutch, Michel Pichot, Malcolm
Russell, Douglas Singh, Curtis Vanderwaal

**VOTING
MEMBERS
PRESENT**

Linda Closser, Charlotte, Loretta Johns, Llewellyn Seibold

**NON-VOTING
MEMBERS
PRESENT**

Gunnar Lovhoiden

PRAYER

Voted to approve the minutes of the January 14 meeting.

Voted to list only the standards for regular admission in the
bulletin and to approve the revised General Undergraduate
Admission Standards (attached) to be listed in the bulletin.

**CHANGES IN
ADMISSION
REQUIREMENTS
LISTED IN
BULLETIN
97-98, # 4**

The current policies regarding provisional and probationary
admission are still in effect, but will not be listed in the bulletin. It
is anticipated the Academic Policies Subcommittee will bring in
recommendations for changing these policies in the future.

The Academic Policies Subcommittee was asked to take a look at
the 13 units of solid subjects requirement and the definition of
what courses are counted.

A question was also raised about the two character references.
What is done if the references are not good?

Voted to approve the revised Degree Requirements/Bulletin
/Graduation section of the Undergraduate Manual (attached)

**REVISION OF
DEGREE
REQUIREMENTS
97-98 # 5**

A recommendation from the Academic Policies Subcommittee that
the 45 credit requirement for a second degree be dropped, was
introduced and discussed. The gist of the discussion was that the
members of the council would be willing to accommodate the
B.A.- B.B.A Joint Degree program in Language and International
Business program with a total of 115 credits but did not want to
open the door to just any dual degree program at less than the
normal requirement.

**DISCUSSION OF
THE 45 CREDIT
REQUIREMENT
FOR A SECOND
DEGREE**

Voted to make an exception to current policy for the B.A.- B.B.A Joint Degree program in Language and International Business program until such time as the policy can be revised.

**EXCEPTION TO
POLICY FOR
JOINT DEGREE IN
LANGUAGE AND
BUSINESS
97-98, # 6**

Voted to approve a new Bachelor of Science major in Environmental Science

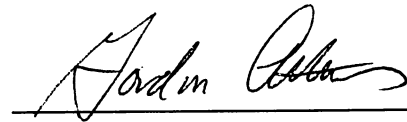
**MAJOR IN
ENVIRONMENTAL
SCIENCE
97-98, # 7**

Voted to approve a new Bachelor of Science major in Animal Science with the understanding that a list of possible electives will be provided.

**MAJOR IN
ANIMAL SCIENCE
97-98, # 8**



Harold Lang, Chair



Gordon Atkins, Acting Secretary

<p align="center">Undergraduate General Admission Standards</p>
<p>Official documentation of completion of secondary school studies from:</p> <ul style="list-style-type: none"> • an accredited secondary school, • or an equivalent overseas school (to be assessed by AACRAO guidelines) • or GED certification with a minimum average score of 60 on five sections of test with no section lower than 50.
<p>A minimum of 13 units of solid subjects in secondary school.</p>
<p>Minimum GPA and college-bound percentile on ACT/SAT of:</p> <ul style="list-style-type: none"> • 2.75 overall GPA, • or 2.5 overall GPA and 35 percentile on ACT/SAT, • or 2.25 overall GPA and 50 percentile on ACT/SAT.
<p>Two character references from secondary school principal, guidance counselor, residence hall dean, teacher, employer or pastor.</p>
<p>Completion of grades 7-12 in English in an English speaking country, or a minimum score of 550 on TOFEL, plus 5 on TWE, or a minimum score of 80 on MELAB.</p>

A student who does not meet the regular admission standards may apply. The student's application materials will be reviewed, according to policy, by the academic dean of the college or school in which admissions is sought. After the review, the student will receive a letter which will outline the conditions to be achieved for regular student standing, or indicate that admission has been denied.

As revised and approved by the Undergraduate Council, 1-21-98

PART II
DEGREE REQUIREMENTS/BULLETIN/GRADUATION

2-1:0 A. General Graduation Requirements UGC:1-21-98

2-1:1 1. Baccalaureate Degrees

The general requirements for baccalaureate degrees are:

- 2-1:1.1 a. A minimum of 190 credits.**
- 2-1:1.2 b. Completion of the General Education requirements for the degree as specified in the appropriate bulletin.**
- 2-1:1.3 c. For a Bachelor of Arts or Bachelor of Science degree, completion of all of the requirements for a major, a minor if required, and specified cognates, or completion of a concentration. (For Michigan State secondary teaching certification, students selecting a concentration must also choose a minor in an area normally taught in the public schools.)**
- 2-1:1.4 d. For Professional degrees, completion of the specific requirements for the degree as specified in the appropriate bulletin, including core, concentration, major, emphasis, and cognates as required.**
- 2-1:1.5 e. A minimum of 45 credits from courses numbered 300 or above.**
- 2-1:1.6 f. A minimum of 45 of the last 55 quarter credits must be earned in residence. The dean of the college/school in which the student is enrolled must give approval for the students to take any part of the other 10 credits at a school other than Andrews University.**
- 2-1:1.7 g. A minimum of 20 credits of a concentration; 1/3 of the 45 credits of required for a major, and 3 credits of required for a minor must be taken in residence in courses numbered 300 or above.**
- 2-1:1.8 h. A minimum grade-point average of 2.00 in all credits used to meet degree requirements, and in all credits earned at Andrews University. Both cumulative and Andrews University minimum grade-point averages of 2.00 in all credits used to meet degree requirements, unless a school or department requires higher grade point averages.**
- 2-1:1.9 i. A minimum grade-point average of 2.25 in all credits counted for a major, and 2.00 in all credits counted for a minor or concentration. Both cumulative and Andrews University minimum grade-point averages of 2.25 in all credits counted for a major, and 2.00 in all credits counted for a minor, unless a school or department requires higher grade point averages.**

- ~~2-1:1.10~~ j. ~~A minimum grade-point average of 2.25 in all credits earned at Andrews University that are counted for a major, and 2.00 in all credits earned at Andrews University that are counted for a minor or concentration.~~
- 2-1:1.140 jk. No course with a grade below C- may count toward a major, or minor, or concentration.
- 2-1:1.11 k. A student may earn more than one major for a single degree. All requirements for each major must be met including cognates. If the majors are offered for different degrees the student must specify which degree he/she wishes to receive, and complete the General Education requirements for that degree. If one of the majors is for a professional degree, the specific requirements for that degree must be met.
- ~~2-1:1.12~~ l. ~~A student may not earn a second degree from Andrews University with the same nomenclature. If a second baccalaureate degree with a different nomenclature is desired the student must:~~
- ~~2-1:1.12.1~~ i. ~~Complete 45 credits in residence beyond those required for the first baccalaureate degree.~~
- ~~2-1:1.12.2~~ ii. ~~Meet all published requirements for the degree major/concentration/professional component, including prerequisites, cognates, degree core, and general education requirements specific to the program of study for the second degree.~~
- ~~2-1:1.12.3~~ iii. ~~If the first degree did not include a comparable general education component in religion, complete a minimum of 7 credits in religion.~~
- ~~2-1:1.12.4~~ iv. ~~If the second degree is a Bachelor of Arts degree, the student must fulfill the foreign language requirement for the BA degree.~~
- UGC:95-96 #13
- 2-1:1.12 l. To earn a second baccalaureate degree from Andrews University a student must:
- I. Complete 45 credits in residence beyond those required for the first baccalaureate degree.
 - II. Meet all published requirements of the second degree major/professional component, including prerequisites, cognates and General Education requirements specific to the program of study for the second degree.
 - III. If the first degree did not include a comparable General Education component in religion, complete a minimum of 4 credits in religion

2-1:1.13 m. A course may be used to fulfill the requirements for more than one concentration, major, or minor provided that at least 75% of the credits used for any concentration, major, or minor are not also counted for another concentration, major, or minor. A course may not be used to fulfill the requirements of more than one concentration, major, or minor used for teacher certification.

2-1:1.14 n. Completion of senior assessment examinations.

2-1:1.15 o. A request for graduation, approved by the student's advisor and a designated records officer.

*— In the College of Technology courses with a grade of D may be counted toward a concentration and a minimum grade-point average of 2.25 must be earned in the concentration.

2-1:2 2. Associate Degrees

The general requirements for associate degrees are:

2-1:2.1 a. A minimum of 96 credits.

2-1:2.2 b. Completion of the General Education Requirements for the degree as specified in the appropriate bulletin.

2-1:2.3 c. Completion of the specific requirements for the degree as specified in the appropriate bulletin, including core, concentration, major, emphasis, and cognates as required.

2-1:2.4 d. A minimum of 24 of the last 32 quarter credits must be earned in residence. The dean of the college/school in which the student is enrolled must give approval for the student to take any part of the other 8 credits at a school other than Andrews University.

2-1:2.5 e. A minimum of 15 credits of the major must be taken in residence.

2-1:2.6 f. A minimum grade-point average of 2.00 in all credits used to meet degree requirements and in all credits earned at Andrews University. Both cumulative and Andrews University minimum grade-point averages of 2.00 in all credits used to meet degree requirements, unless a school or department requires higher grade point averages.

2-1:2.7 g. A minimum grade-point average of 2.00 in all credits counted for an associate degree major. Both cumulative and Andrews University minimum grade-point averages of 2.00 in all credits counted for an associate degree

major, unless a school or department requires higher grade point averages.

2-1:2.8 h. A minimum grade-point average of 2.00 in all credits earned at Andrews University that are counted for an associate degree major.

2-1:2.9 ii. A request for graduation, approved by the student's advisor and a designated records office.

**2-2:0 B. General Education Requirements
(Bachelor of Arts and Bachelor of Science Degrees)**

A reduction in stated requirements is based on a grade of B- or above for each course taken on the secondary school level. A student with a course grade slightly lower than a B- or one who feels especially competent in a given area may petition the dean for permission to take a validation examination. The number of credits if any to be waived from a given requirement is based on scores earned in this evaluation examination, a recommendation from the respective department, and approval of the dean.

	BA		BS		
	Maxi-	Mini-	Maxi-	Mini-	Requirements with possible reduc-
	mum	mum	mum	mum	tion criteria based on secondary-
	Req.	Req.	Req.	Req.	school transcripts
RELIGION	18	16	18	16	Because the continuing study of religion year by year is considered desirable and to be encouraged, students taking one religion course each year (before completing 48, 96, 144, and 190 credits) may have their religion requirements reduced to 16 credits. Students seeking SDA denominational certification must take 18 credits.)
COLLEGE					
SUCCESS	2	2	2	2	No reduction given.
COURSE					
BEHAVIORAL	12	8	12	8	*Reduced 4 credits for 1 unit in secondary school with a minimum of a B- average may include government, geography, economics or one of the behavioral sciences.
AND SOCIAL					
SCIENCES					
FINE ARTS	4	3	4	3	*Reduced 1 credit for 1 unit of secondary school music or art with at least a B- average, and must include at least 1/2 unit of art or music appreciation.
HUMANITIES	12	8	12	8	*Reduced 4 credits for 2 units of history and 4 units of English in secondary school, each course with at least a B- average.
LANGUAGE AND					
COMMUNICATION					

1. COMM104	3	0	3	0	Reduced 3 credits for one secondary- Comm. Skills school unit in speech with at least a B- average.
2. COMM306	1	1	1	1	No reduction given. Required of all Oral Comm. Sem. degree students.
3. ENGL111,	6	6	6	6	No reduction given. Required of all 112 degree students.
4. ENGL306	3	3	3	3	No reduction given. Required of all Writing Sem. degree students.
5. Modern Language	15	5	-	-	Reduced 5 or 10 credits on the basis of a proficiency examination. Basically each unit of secondary school language (same language) can reduce the requirement to 5 credits.
HEALTH AND PHYSICAL EDUCATION	4	3	4	3	To encourage a student to recognize the need for maintaining a personal physical fitness program as part of his/her life- style, a student is allowed to reduce this requirement 1 credit by (1) developing and practicing a personal physical fitness program for 3 quarters as approved by the Physical Education Department, or (2) participating for 3 quarters in the University intramural program; to include at least two different activities.
MATH	4	0	4	0	*Reduced 4 credits for 3 units of secondary- school mathematics (not including General Mathematics) with at least a B- average in each unit or by passing a mathematics proficiency examination at the level of high school algebra.
COMPUTER SCIENCE	4	0	4	0	
					*Reduced 4 credits for 1 unit of an approved computer programming courses in secondary school with at least a B- average or by passing a proficiency examination in computer programming.
NATURAL SCIENCE	12	8	12	8	*Reduced 4 credits for 3 secondary- school units of science (not including General Science), each with at least a B- average.
WORK ETHIC/ EXPERIENCE	0	0	0	0	A course discussing the Christian- philosophy of work and documented work experience are required.
TOTALS	100	63	85	58	

(Replace with new requirements voted 95-96 #8)

2-3:0 C. Responsibility of the Student

It is the responsibility of the student. Students are expected to be informed concerning the regulations governing academic matters. The bulletin covers general questions relating to academic policies that are to be observed by the student. Unique problems are referred to the appropriate dean or program coordinator for consideration.

The responsibility for meeting degree requirements rests upon the student. Each is expected to be aware of the various requirements as published in the bulletin under which he/she proposes to graduate. While the bulletin in force at the time of registration is held to be the binding document between the student and the University, a student may, by filing an official petition to his/her dean, choose to meet the requirements of any other, specific bulletin in force during the time of residence, except as indicated under residency requirements below.

The provisions of this bulletin are not to be regarded as an irrevocable contract between the student and the University. The University reserves the right to change any provision or requirement at any time within the student's term of residence. All regulations adopted and published by the Board of Trustees or the faculty subsequent to the publication of this bulletin have the same force as those published here.

2-4:0 D. The Student's Governing Bulletin

A student who after earning at least 12 quarter credits at Andrews University temporarily drops out and upon his/her return presents for transfer not more than 18 newly earned quarter credits (unless more is authorized by the dean of the college in which the student is enrolled) may graduate under the bulletin for any school year he/she attended Andrews University, provided that the chosen bulletin was published not earlier than ten years before the date of his/her graduation, and with the understanding that when a required course is no longer offered, the University reserves the right to require an alternate course. Furthermore, if the student is working for certification by governmental or professional agencies, it may be necessary for him/her to graduate under a recent bulletin.

A student who drops out of Andrews University to earn in some other college more than the amount of credit allowed by the terms of the preceding paragraph is governed by the bulletin for the school year in which he/she returns.

2-5:0 E. Honors Program

2-5:1 1. Purpose

The undergraduate Honors Program, which is an integral part of all four of the undergraduate schools of Andrews University, had its beginnings in 1966. Through the years it has maintained its interdisciplinary nature, recognizing students of high academic achievement from all of the undergraduate programs of the University.

The purpose of the Honors Program at its founding as well as today, is to provide an intellectual and spiritual atmosphere where outstanding students can develop their God-given talents within a stimulating Christian environment where faculty

and students work closely together. Through challenge, enrichment, recognition, service, and research opportunities, Honors students are encouraged to fulfill their potential and to commit themselves to a life of service.

2-5:2 — 2. The Society of Andrews Scholars

Student members accepted into the Honors Program become members of the Society of Andrews Scholars, the student organization dedicated to providing spiritual and social activities where students and faculty may relate outside the classroom.

The Society of Andrews Scholars is identified by the Greek letters ΣΑΣ, the acronym for the Greek words Σοφία Αδελφότης Σωτηρία, which translate "Wisdom, Community, and Salvation." The logo shows the flame of truth with sheltering hands encouraging the search for truth by students and faculty together. "Excellence, Commitment, and Service" appear as a statement of the motto.

2-5:3 — 3. National Honor Societies

The Honors Program works closely with the sixteen departmental national honor societies to coordinate information and encourage their development however possible. It also works especially closely with the prestigious interdisciplinary national honor society, Phi Kappa Phi, which inducts about thirty undergraduates each year from within the upper 5 percent of juniors and upper 10 percent of seniors who are also members of the Honors Program.

2-5:4 — 4. Admissions

The criteria for freshman admission to the Honors Program are (1) an overall grade-point average of 3.50 on all secondary credits; (2) a high percentile on an ACT or SAT test score; (3) a recommendation from a secondary-school teacher; and (4) an essay. Transfer students and current Andrews students with a 3.3 grade-point average on all college work may also apply. Application forms are available in the Honors Office. A \$25 activity fee is charged at the time of application. Application for admission to the Honors Program can be made to the honors office. An activity fee is charged at the time of application.

All Andrews Scholars must maintain a 3.3 grade-point average to remain in the Honors Program. Students whose average falls below 3.3 are dropped from the program each summer, but they may rejoin when a grade-point average of 3.3 is again achieved. Also during the first two years of college, honors students must take a minimum of two scheduled honors courses. Upper division students missing these classes are dropped from the program unless they submit and follow an acceptable proposal to remedy the lack of honors courses.

2-5:5 — 5. Graduation with Honors

Graduation with honors is a recognition which is given outstanding honors

students representing more than mere compliance with academic requirements. A student is recommended for graduation with honors by the Honors Council if he/she (1) shows outstanding scholarship and has minimum overall college and honors grade-point averages of 3.50; (2) has taken a minimum of 16 honors credits including 2-6 credits of HONS497 and 1 credit of HONS498 with a minimum of B- in that course; (3) demonstrates the ability to propose, carry out, and successfully present the results of significant research or project work in an area of specialization; (4) submits the final project paper to the Honors Office for the James White Library collection; (5) demonstrates outstanding ability and competence in the major indicated by good recommendations from the departmental faculty of the student's major. In addition, the Honors Council strongly recommends that an honors section of ENGL/COMM306 be taken to facilitate design and production of the senior honors research project.

2-5:63

63. Graduation Distinctions

Bachelor and Associate degree students who have completed 45 credits at Andrews University at the time of evaluation the quarter before graduation will have the following designations based on their overall grade-point averages:

Summa Cum Laude	3.90-4.00
Magna Cum Laude	3.75-3.899
Cum Laude	3.50-3.749

Students who have completed the requirements for graduation with honors will have the designation "and Honors J. N. Andrews Honors Scholar" in addition to the above.

2-5:74

74. Honors Audits

An honors member enrolled full time (a minimum of 12 regular credits) may honors audit one course free each quarter. In reality, this means that honors audits are free if taken as part of an overload (over 16 credits). The student should get a signed request slip from the Honors Office, get the teacher's signature, and register during regular registration, but in no case later than the regular drop/add date about a week into the quarter. Other regulations for any audited course apply.

2-5:8

8. Summer Scholars

Each summer the honors program also runs a program for highly qualified secondary school students to take college honors courses during a four-week period. These students can transferable honors college credits toward the date when they are actually in college. The courses change from year to year through business, biology, literature, communications, and other related course work which allow a good student to get a major head start on college.

2-6:0

F. Undergraduate Senior Examinations

WP2:465

All seniors in the undergraduate schools are required to take the specified general and

departmental assessment examinations, including objective form of the COMP/ACT examination. This test, the College Outcome Measures Project, has been developed by American College Testing to assess general education knowledge and skills in such areas as the social sciences, natural sciences, fine arts, communication, problem solving, and values clarification. The COMP/ACT test will be administered each quarter at a date set by the director of counseling and testing services and announced in the academic calendar. Since this form of the test evaluates the quality of a general education program rather than primarily an individual student's achievement, the director will only report the results of the examination to each of the undergraduate deans. This information will be studied by the General Education Committee as it reviews general education requirements for all undergraduate degrees. The assessment results will be reviewed by departments and the General Education Committee as part of the University's commitment to the continuous improvement of student learning.

2-7:0 G. Candidacy for Degrees, Graduation WP2:435

After consultation with the department chair or the curriculum coordinator and registrar, the dean of the school in which the student is registered shall decide whether a student who applies for a degree or diploma, has met the requirements for candidacy. The dean shall present the list of acceptable candidates to the appropriate faculty for approval at least three weeks before graduation.

2-8:0 H. Academic Garb UGC:5-13-92

The academic garb for participants in the commencement exercises such as faculty members or graduating students shall without any adornments be limited to the following per person:

- 2-8:1 1. The appropriate academic gown, hood and cap.**
- 2-8:2 2. The following signs of distinction associated with academic societies officially recognized by Andrews University:**
 - 2-8:2.1 a. A total of two cords officially issued either by Andrews University or by the national honor society in question.**
 - 2-8:2.2 b. Medallions officially issued by the national honor society in question.**

ENVIRONMENTAL SCIENCE MAJOR

BACKGROUND

The environmental movement of today, and concern for the biodiversity of life and the survival of the creation, came about in the early 1960's following the publication of Rachel Carson's book *Silent Spring*, and solidified into a movement with the founding of the first Earth Day on 22 April 1970 and the establishment of the Environmental Protection Agency.

Many colleges and universities responded in the 1970's with programs in the areas of conservation and environmental science to meet this challenge. Many of these programs ended with a terminal degree and were without a strong foundation of basic science. As the result, many students found themselves disappointed at being relegated to lower paying jobs in environmental education and were poorly trained in the areas of management, control, environmental quality and testing, and regulation. These latter occupations pay higher salaries and required a more extensive basic and applied background along with a strong liberal arts component

Today, schools like Brown University, Iowa State University, McGill University, Purdue University, Washington State University, and others are/or have set up programs outside of engineering to train young people in the basic sciences to meet the upcoming demand for environmental management, control, testing, quality and regulation (See sample program for Washington State University; Appendix A). Recent projections by various organizations (i.e. U.S. News and World Report; Quintana, D. 1996. *100 Jobs in the Environment*. Macmillan, NY. 218 pp. etc.) place Environmental Science as one of the "hot jobs" along with Social Services, Education, Computers, etc. for the next century.

Within the SDA system only Walla Walla College has attempted to enter this area, but only through an engineering mathematics approach (See: <http://www.wwc.wdu/academics/bulletins/underg/envi.htm>).

Most SDA young people have not been enticed to enter environmental science through this avenue, and therefore the WWC program has remained small. A program like this one however, will place Andrews University at the cutting edge of this type of environmental study within the SDA educational system and

will provide a viable major for those Christian young people who have a desire to preserve "the Creation."

STRATEGIC PLANNING COMMITTEE RECOMMENDATION

Here at Andrews University a group of faculty from various departments have attempted to look at this discipline from an interdepartmental view. We have taken our emphasis from scripture where humans are admonished to be stewards of the earth and the recommendation of the Strategic Planning Vision Statement VII, p.19 where "Environmental studies in a Christian perspective . . . should be developed and maintained" and ". . . are central to the mission of the university." This same feeling was echoed verbally by one of the three members of the Architecture Department evaluating team visiting the Andrews University campus. Recent communication with management of ADRA indicates a willingness to work with us and our environmental science graduates.

CONSULTATION ABOUT MAJOR

Several meetings with faculty from Biology, Behavioral Science, Chemistry, History, and Religion, and invited guests from industry and environmental quality and testing, have helped to solidify the need and a possible academic program to train Christian young people to become environmental stewards of the creation. The following program is a culmination of various inputs from these groups to facilitate a program that Andrews University can be proud to offer.

PROJECTED ENROLLMENT

Projections for the future are based on five new students coming into the program each year and five transfer students from other majors within the university. It is a new major option that most SDA young people have not been exposed to as being a career option. The type of student entering this major would be similar to any student entering the sciences but who would prefer a career in applied science over one in the basic sciences. Students enrolling in the major would still need a background in the high school sciences and having average or better grades. Because of the lack in flexibility in the course scheduling, internship, and kind of courses taken, the students who wish to finish in four years will best advised to enter the program as early as possible, preferably as freshman.

FUNDING AND STAFFING OF MAJOR

See attached budget in Appendix B that covers projected costs of major and specific courses needed for

the program to succeed. Most courses for the major are already being taught within the university. The suggested courses are drawn from ALL SCHOOLS within the university except the Seminary. Approximately six new courses will have to be offered with only two, Environmental Chemistry and Environmental Policy needing to be staffed by adjunct instructor's.

EXAMPLES OF JOBS IN THE ENVIRONMENT

Wildlife

- 1 Wildlife Rescuer/Stranding Coordinator
- 2 Wildlife Rescuer/Rehabilitator
- 3 Field Biologist—Birds
- 4 Species Coordinator
- 5 Exotic Animal Nutritionist—Zoo
- 6 Zookeeper
- 7 Aquarium Keeper
- 8 Marine Mammal Trainer
- 9 Wildlife Biologist
- 10 Wildlife Biologist (Forest Products Company)
- 11 Wildlife Biologist (Private Consulting Firm)
- 12 District Wildlife Manager
- 13 Fisheries Biologist (Federal Government—U.S. Forest Service)
- 14 Field Biologist—"Plankton Police"
- 15 Fish Hatchery Worker
- 16 Nature Preserve Manager

Air Quality

- 17 Air Quality Inspector (State Government)
- 18 Air Quality Engineer (Private Consulting Firm)
- 19 Indoor Air Quality Technical Specialist

Water Quality Management and Conservation

- 20 Drinking-Water Quality Control Director (Municipal Water System)
- 21 City Director of Water Conservation
- 22 Aquatic Environmental Scientist
- 23 Wastewater Engineer
- 24 Wastewater-Treatment Plant Operator
- 25 Water Pollution Investigator
- 26 Water Conservation Consultant
- 27 Hydrologist

Forests

- 28 Forester/Forest Ranger (U.S. Forest Service or Other Federal Agency)
- 29 Forester/Forest Products Company
- 30 Forest Archaeologist

Parks

- 31 Park Ranger/Nature Interpreter (State Government—National Park Service)
- 32 Law Enforcement Park Ranger
- 33 Parks Planner

Natural Resources (Land, Sea, and Wetlands Ecology)

- 34 Soil Scientist
- 35 Seismologist
- 36 Nature Cartographer (Federal Government)
- 37 Nearshore Oceanographer
- 38 Geologist (Oil and Gas Industry)
- 39 Geologist—Economic (Mineral) Specialty
- 40 Geologist—Marine Studies
- 41 Environmental Landscape Architect (Restoration)
- 42 Environmental Consultant
- 43 Wetlands Ecologist

Waste Treatment

- 44 Hazardous-Waste Test Engineer (Private Consulting Firm)
- 45 Environmental Remediation Expert/Recovery Cleanup Technician
- 46 Bioremediation Project Scientist
- 47 Field Sampling Supervisor (Private Laboratory)
- 48 Pollution Enforcement/Field Sampling (Environmental Protection Agency)
- 49 Sanitation Police Officer (City Government)
- 50 Recycling Coordinator
- 51 Recyclable Material Collector/Broker
- 52 Suesperson for Recyclables
- 53 Recycling Products Manager

Energy Sources and Conservation

- 54 Laboratory Research Scientist
- 55 Windtunneler
- 56 Energy Efficiency Consultant
- 57 Energy Auditor
- 58 Solar Power Inventor/Manufacturer of Alternative Energy Devices
- 59 Solar Energy Research Scientist

Botany and Horticulture

- 60 Agricultural Horticulturist
- 61 Horticulturist—Public Garden
- 62 Ecological Horticulturist
- 63 Nursery Plant Manager/Owner
- 64 Greenhouse Care Worker
- 65 Organic Farmer
- 66 Organic Farm Inspector

Finance and Law

- 67 Social Research Analyst (Investment Fund)
- 68 Financial Environmental Consultant
- 69 Environmental Attorney

Education and Communication

- 70 Environmental Journalist/Editor
- 71 Editor—Environmental Newsletter
- 72 Editor—Environmental Book Publishing
- 73 Direct Mail Manager—Environmental Book Publishing
- 74 Environmental Media Associate
- 75 Public Affairs Officer (Nonprofit Organization)
- 76 Environmental Instructor—Public Aquarium
- 77 Environmental Educator
- 78 Independent Documentary Filmmaker
- 79 Nature Photojournalist
- 80 Video Lab Technician

Public Action

- 81 Environmental Activist
- 82 Grassroots Organizer
- 83 Lobbyist
- 84 Canvasser
- 85 Environmental Victims Advocate
- 86 Fund-Raiser

Other Jobs

- 87 Epidemiologist
- 88 Industrial Hygienist
- 89 Meteorologist
- 90 Ecotourism Salesperson
- 91 Ecotour Guide
- 92 Eco-Fashion Designer/Entrepreneur
- 93 Eco-Entrepreneur
- 94 Project Manager (Environmental Consulting Firm)
- 95 Pollution Compliance Manager (Environmental Manager)
- 96 Earthquake Safety Retailer
- 97 Green Architect
- 98 Green Industrial Designer
- 99 Green Interior Designer
- 100 Security Manager (Environmental Compliance and Protection)

Environmental Science Major (Interdisciplinary Program)

Dennis W. Woodland, Coordinator

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 E-mail: woody@andrews.edu
 Web site:

The discipline of environmental science deals with the relationships between humans and nature, or the interaction of humans and natural systems. Some very recent publications have listed environmental science positions as one of the "hot jobs" for the next century. This course of study for the Bachelor of Science (B.S.) in Environmental Science is an interdepartmental degree seeking to develop: an understanding of the relationship between humans and natural systems, expertise in problem solving and communication skills, environmental management, testing and planning abilities, and a strong foundation for advanced study in various professional and basic research fields. This degree promotes "hands on" as well as basic and theoretical training.

PROGRAM

Degree Requirements:

Natural Sciences and Math		Qtr. Credits
AGRI116	Physical Properties of Soil	4
BIOL155,156,157	Foundations of Biology	15
BIOL204,205	Principles of Environmental Science	8
BIOL348	General Ecology	4
CHEM121,122,123	General Chemistry	12
CHEM211,212,213	Organic Chemistry	12
* ENVIXXX,YYY,ZZZ	Environmental Science Seminar	3
* CHEMXXX,YYY	Environmental Chemistry	8
MATH182	Calculus with Applications	4
STAT285	Elementary Statistics (Gen. Ed.)	
Subtotal		70
Philosophy/Ethics		
RELB340	Religion and Ethics in a Modern Society (Gen. Ed.)	
RELB360	Christian and Environment	4
Subtotal		4
Social Sciences		
ANTH123	Introduction to Anthropology (Gen. Ed.)	
BHSC235	Human Cultures, Conflict and Resolution (Gen. Ed.)	
GEOG240	Physical Geography	4
SOCI350	Demography	4
PLSC104	American Government	4
PLSC304	Legislative Process	4
* ENVTXXX	Environmental Policy	4
ECON225	Principles of Macroeconomics or	
ECON226	Principles of Microeconomics	4
Subtotal		24
* = new course		

Internship	(required, three months minimum, but no academic credit)	0
Electives (choose from the following)		
ARCH230	Surveying	4
BIOL371	Genetics	4
BIOL475	Biology of Bacteria	4
BOT474	Flora of the Great Lakes Region	5
CHEM474	Topics in Advanced Chemistry	4
CHEM400	Chemical Separations and Analysis	4
GEOG245	Meteorology & Climatology	4
GEOG455	Environmental Disasters	4
MECT120	Computer-Aided Drawing	4
PHYS151,152,153	General Physics (Gen. Ed.)	4
ZOOL454	Vertebrate Zoology	4
ZOOL459	Entomology	4
ZOOL484	Animal Behavior	4
Subtotal		<u>4</u>
Total Required Credits		98

PROPOSED NEW COURSE DESCRIPTIONS

CHEMXXX,YYY **Environmental Chemistry** (Adjunct staff) **8 credits**

A survey of environmental and energy-related problems and the ways in which chemistry may be applied to them. Important topics include air, soil, and water pollution, energy and other resources, solid wastes and recycling, and toxic chemicals. Three lectures and 4 hours of laboratory each week. Not applicable towards a major in chemistry or biochemistry. Prerequisites: CHEM123; CHEM213 or CHEM200 recommended.

ENVIXXX **Environmental Policy** (Adjunct staff) **4 credits**

A survey of historic and current environmental issues, pending and existing legislation on the state and federal level. Federal land management offices and their differing missions. Competing and non-competing demands from biodiversity to water usage. Prerequisite: BIOL204, 205 or consent of the instructor.

ENVIXXX,YYY,ZZZ **Environmental Science Seminar** (Woodland) **3 credits**

Discussion and presentations dealing with current or historic topics in environmental science.

ENVIXXX **Topics in _____** (Staff) **1-5 credits**

Designed to meet the needs of students with various interests in environmental science. May be repeated in different specialized areas. Regular grades are earned.

ENVIXXX **Indep. Readings/Res. in Environmental Science** (Staff) **1-5 credits**

Independent readings or research in environmental science under the direction of the instructor. Consent of the instructor required.

Program in Environmental Science and Regional Planning

Requirements for the B.S. Degree in Environmental Science

This course of study for the bachelor's degree is organized around the requirements listed below. A sequence will be designed by each student and the major advisor to provide training depth in an optional area of specialization. The Program has identified nine optional areas of specialization: agricultural ecology, biological science, hazardous waste management, human ecology, environmental education, environmental quality (air & water), natural resource management, systems, and environmental/land use planning. (Fact sheets on each option are available from the ES/RP Program Office.) Students may also, in consultation with their advisors, develop an area of specialization outside of those identified. At least 40 of the total hours required for the Bachelor of Science in Environmental Science must be in upper-division courses, 18 of which are in the chosen area of specialization (normally in not more than two departments). Majors in Environmental Science must satisfy General University Requirements as specified for majors in the College of Sciences. Many of these requirements are built into the curriculum below. Students should note the requirements with respect to Tier I, II, and III courses and also Areas of Coherence. Each major must also complete 8 hours in a modern foreign language unless he/she has completed two years of such language in high school (or one year in high school and four hours in the same language at WSU). The Program provides a strong foundation for advanced study in many professional and basic research fields. The departmental office for the Program in Environmental Science is located in TROY HALL, Room 305. The telephone number is (509) 335-8536. If you have further questions on this degree program, please do not hesitate to speak with or write to one of the faculty.

Certification Requirements

Requirements for certification into the Bachelor of Science Program in Environmental Science:

- 1) completion of 30 semester hours of course work with a gpa of 2.00 and
- 2) completion of the courses listed in the catalog in the freshman year of the environmental science curriculum with a grade of C- or better. (Courses not required to fulfill university requirements for graduation may be waived for certification.

FRESHMAN YEAR

FIRST SEMESTER HOURS

CHEM 105 Principles of Chemistry I [P] (GER) 4
 ENGL 101 Introductory Writing [W] (GER) 3
 ES/RP 101 Environment and Human Life [B] or
 ES/RP 150 Natural Sci and the Environment [Q] (GER) 4/3
 MATH 140 Mathematics for Life Sciences [N] or
 171 Calculus I [N] (GER) 4
 Total 14/15

SECOND SEMESTER HOURS

ANTH 101 General Anthropology [S] or

SOC 101 Introduction to Sociology [S] (GER) 3
CHEM 106 Principles of Chemistry II [P] (GER) 4
ARTS & HUMANITIES [H,G] (GER) 3
ECON 101 Fundamentals of Microeconomics [S] (GER) 3
GENED 110 World Civilization I [A] (GER) 3
Total 16

SOPHOMORE YEAR

FIRST SEMESTER HOURS

ARTS & HUMANITIES [H,G] or
SOCIAL SCIENCES [S,K] (GER) 3
BIO S 103 Introductory Biology [B] (GER) 4
ENGL 201 Writing & Research [W] or
402 Technical & Professional Writing [W] (GER) 3
ES/RP 210 Microcomputer Models of Environmental Systems 3
PHYS 101 General Physics [P] or
201 Physics for Scientists & Engineers [P] (GER) 4
Total 17

SECOND SEMESTER HOURS

BIO S 104 Introductory Biology [B] (GER) 4
CHEM 240 Elementary Organic Chemistry or
340 Organic Chemistry & Organic Chem Lab 4/5
GENED 111 World Civilization II [A] or
GEOL 102 Physical Geology [P] (GER) 3/4
PHYS 102 General Physics [P] or
202 Physics for Scientists & Engineers [P] (GER) 4
Total 15/17

JUNIOR YEAR

FIRST SEMESTER HOURS

BC/BP 364 Introductory Biochemistry 4
ES/RP 335 Environmental Policy [M] 3
GEN CB 301 General Genetics or
MICRO 301 General Microbiology 4
GENED 111 World Civilization II [A] or
SOILS 201 Growth & Development of World Crop Plants[B] (GER) 3
ELECTIVE 3
(COMPLETE WRITING PORTFOLIO)
Total 17

SECOND SEMESTER HOURS

ANTH 309 Cultural Ecology [K.] (GER)(1) 3
BIO S 372 General Ecology 4
ES/RP 490 Special Topics in Environmental Science (2) 1
STAT 212 Introduction to Statistical Methods [N] (GER) or
412 Biometry 4/3
ELECTIVE 3
Total 14/15

SENIOR YEAR

FIRST SEMESTER HOURS

BIO S 474 Human Ecology 3
ES/RP 404 The Ecosystem [M] 3
ES/RP 491 Senior Seminar in Environmental Science 1
300-400 LEVEL SOC [S,K] (GER)(3) 3
ELECTIVES 6
Total 16

SECOND SEMESTER HOURS

300-400 LEVEL ECON (4) 3
ES/RP 444 Environmental Assessment 3
TIER III CAPSTONE (GER) 3
ELECTIVES 6
Total 15

- (1) or other 300-400 level ANTH with [I] or [K] designation with advisor's approval
- (2) one hour of ES/RP 490, 492, or 493, Special Topics is required
- (3) one of the following is suggested: SOC 315, 331, 430
- (4) one of the following is suggested: AG EC 311, 425, 480 or ECON 472, 481

NOTES:

- Courses taken to fulfill the above requirements, as listed, cannot be taken to satisfy requirement for the option.
- Beyond those options listed, students are encouraged, in close consultation with an advisor, to create their own options, ones more closely fitted to their specific needs; such option alternatives must be approved by the Program advisor.
- Students with a dual major or who already have a Bachelor's degree may use the other degree program as a substitution for the required option, subject to advisor's approval.
- Students should check Tier I, II, and III and Areas of Coherence requirements.

8/97

[Return to Program in Environmental Science and Regional Planning Home Page](#)

01/20/98

PROPOSED ENVIRONMENTAL SCIENCES DEGREE

- 1 Assumptions: 5 new students/year added to campus; In each year, 5 continuing students shift majors and take new lab courses required.
- 2 Only new courses are listed under expenses. Assume half of credits taken/qtr are in major; thus 24 cr/year.
- 3 Of these 24 credits, assume 62% are science courses & 38% lecture-intensive courses.
- 4 Non-faculty operational costs for science courses = \$ 11.33/credit labor; \$ 7.06/credit supplies. Non-faculty operational costs for lecture-intensive courses = \$ 4.15/credit labor; \$ 1.62/credit supplies.
- 5 Financial aid costs are estimated at 20% of tuition income.
- 6 Faculty costs calculated as 1 FTE undergraduate load = 36 credits; total personnel cost = \$ 49,386 (Associate D3)
Per credit costs to offer course = \$49,386 costs/36 credits = \$ 1,372/credit.

	Year 1 1998-99			year 2 1999-2000			Year 3 2000-2001		
	Credits	Budget	Totals	Credits	Budget	Totals	Credits	Budget	Totals
	5 new + 5 chng			10 new + 5 chng			15 new + 5 chng		
INCOME									
Tuition net increase:			16926			33177			49428
50% package plan x \$3894	24	19470			38940			58410	
x 3 qtrs = \$ 5841/new stud.	New = 5			New = 10			New = 15		
Lab Fees	n=10 st	1350		n=15	2025		n=20	2700	
3 new course lab fees @ 45							Assume 20 total		
Less 20% discount financ aid		15576			31152			46728	
NEW EXPENSES									
Faculty Costs			27420			27420			27420
Envir Science Seminar	3	4116		3	4116		3	4116	
Envir. Chemistry II	4	5488		4	5488		4	5488	
Dept. substitutes Environ Chem I for Consumer Chemistry									
Envir. Biology II	4	5488		4	5488		4	5488	
Envir. Policy	4	5488		4	5488		4	5488	
Program Coordinator		6840			6840			6840	
Release time in contracts									
Operational Costs	credits		6185	20 students x 24 cr		11270	20 x 24		12070
10 students x 24 credits=240									
Science courses	149			298			298		
Lecture-intensive courses	91			182			182		
Student labor increase		2066			4132			4132	
Science = 1688; Lecture = 378									
Supplies increase		1199			2398			2398	
Science=1052; Lecture=147									
Duplicating @ 0.50/credit		120			240			240	
Equipment, year 1		2000			3000			3000	
Faculty convention travel		800			800			1600	
Faculty admin. travel		200			200			200	
Promotional brochure		500							
Promotional travel		500			500			500	
TOTAL COSTS			34805			38690			39490
MAJOR'S PRODUCTIVITY			0.5			0.9			1.3
Additional Univ. benefit = 24 credits x new x 0.8			15576			31152			46728
Additional Univ. cost = tuition x 0.6			9346			18691			28037
Balance for non-major courses			6230			12461			18691
UNIVERSITY PRODUCTIVITY			0.7			1.2			1.7

Bachelor of Science

Major in Animal Science

Major		56	General Education		73
AGRI 115	Intro to Agriculture	2	Religion		16
AGRI 214	Animal Science	4	Arts & Humanities		12
AGRI 305	Animal Nutrition	4	Natural Science		0
AGRI 425	Issues in Animal Science, Agriculture & Medicine	4	Social Science		8
AGRI 405	Agriculture Seminar	2	Language & Communication		12
	Major Electives	4-9	Mathematics & Computer Science		12
	Pre-vet Emphasis	36	Wellness		3
	OR		Service		2
	Management Emphasis	31	Breadth		8

Cognate		27
BIOL 155	Foundations of Biology	5
BIOL 156	Foundations of Biology	5
BIOL 157	Foundations of Biology	5
CHEM 121	General Chemistry	4
CHEM 122	General Chemistry	4
CHEM 123	General Chemistry	4

Emphasis in Pre-Vet		36
AGRI 137	Practicum - Animal Science	2
	Practicum - Clinical Experience	2
AGRI 340	Production/Mgmt (3 species)	12
AGRI 379	Small Animal Hlth & Disease	4
AGRI 421	Canine Gross Anatomy I	4
AGRI 422	Canine Gross Anatomy II	4
AGRI 440	Animal Reproduction	4
AGRI 445	Physiology of Farm Animals	4
*BCHM 401	Biochemistry I	3
*BCHM 402	Biochemistry II	3
*CHEM 211	Organic Chemistry	4
*CHEM 212	Organic Chemistry	4
*CHEM 213	Organic Chemistry	4
*MATH 162	Technical Math	4
*PHYS 151	General Physics	4
*PHYS 152	General Physics	4
*PHYS 153	General Physics	4

*These requirements may vary depending on entrance requirements of the veterinary college of your choice.

Emphasis in Management		31
AGRI 137	Practicum - Animal Husbandry (2 species)	4
AGRI 321	Management of Ag Enterprises	4
AGRI 340	Production/Management (5 species)	20
ACCT 111	Fundamentals of Accounting	3

RELATIONSHIP TO THE UNIVERSITY MISSION STATEMENT

A. *The Proposed Program as an Outgrowth of the University Mission Statement*

Andrews University is the only institution in North America sponsored by the SDA church that offers programs in the field of Agriculture. Therefore, all programs offered through this department are unique to Andrews University; and the University may be viewed as an institution providing one-of-a-kind educational experience for SDA young people in North America.

The proposed baccalaureate degree in Animal Science is not offered by other SDA colleges or universities in the United States or Canada. The degree has been developed with pre-veterinarian medical students in mind to provide structured alternative curriculum for students who appear to be unable to maintain a high enough level of performance to enter a veterinary college.

The curriculum is rigorous, requiring a similar foundation in the sciences as a pre-medicine program, and meets all general education requirements as well as a 57-credit concentration in Animal Science. The course work in Animal Science covers traditional courses in livestock management, and also includes a number of classes specifically for pre-veterinarian students that are designed to challenge them academically. Research classes and independent study opportunities are designed to enrich the learning process.

Similar Animal Science programs exist at a number of private colleges and at virtually all land grant universities across the country. Of 11 schools surveyed, all indicated a growing enrollment in Animal Science programs. Veterinary colleges report an increase in enrollment over the past several years and projected growth for the future. Research classes and independent study opportunities are designed to enrich the learning process.

B. *The Academic Integrity of the Proposed Program*

The Animal Science program is supported by one full-time faculty member as well as three part-time instructors that teach on a contract basis. This exceeds the minimum standard on department size as requested by the Undergraduate Council.

Number of Graduates by Program					
	1993	1994	1995	1996	1997
BS - Agriculture		1*	1	3*	3*
BS - Horticulture					1
BT- Agriculture		2	2	4	2
BT - Horticulture	2	1	3	4	5
AT - Agriculture				1	
AT - Horticulture			2	3	1
Total Graduates	2	4	8	14	12

* Animal Science graduates are included in the number of students graduating with a BS in Agriculture.

B. Continued

Courses Offered by Andrews University	Comparable Courses at Michigan State University	Comparable Courses at Iowa State University	Andrews University Instructor
AGRI 115 Intro to Agriculture	X	X	Kathy Koudele-Joslin
AGRI 214 Animal Science	X	X	Kathy Koudele-Joslin
AGRI 137 Practicum: Vet Clinical Animal Science			Kathy Koudele-Joslin
AGRI 305 Animal Nutrition	X	X	Kathy Koudele-Joslin
AGRI 340 Production/Management (of farm species)			
Beef	X	X	Ron Hayden
Dairy	X	X	Kathy Koudele-Joslin
Horse	X	X	Kathy Koudele-Joslin
Porcine	X	X	Ron Hayden
Avian	X	X	Kathy Koudele-Joslin
Wool & Lamb	X	X	Kathy Koudele-Joslin
AGRI 379 Small Animal Health & Disease			Phil Hecht, DVM
AGRI 421, 422 Canine Gross Anatomy I & II	X (in veterinary college)	X (in veterinary college)	Kathy Koudele-Joslin
AGRI 425 Issues in Animal Science Agriculture, Medicine	X	X	Kathy Koudele-Joslin

Courses Offered by Andrews University	Comparable Courses at Michigan State University	Comparable Courses at Iowa State University	Andrews University Instructor
AGRI 440 Animal Reproduction	X	X	Kathy Koudele-Joslin
AGRI 445 Physiology of Farm Animals	X	X	Kathy Koudele-Joslin
AGRI 380 Horse Judging & Evaluation	X	X	Debbie Smith
AGRI 385 Livestock Judging	X	X	Ron Hayden
AGRI 345 Lactation Physiology	X	X	Kathy Koudele-Joslin
AGRI 345 Wildlife & Fisheries	X	X	Kathy Koudele-Joslin
AGRI 321 Management of Ag Enterprises	X	X	Tom Chittick
ACCT 111 Fundamentals of Accounting	X	X	School of Business

The state universities surveyed have courses in meat science, toxicology, and advanced animal breeding/genetics. The AU Agriculture Department does not offer these classes and has no immediate plans to add them to our curriculum. No new faculty will need to be hired.

C. *Benefits of the Proposed Program on Students*

The students that are interested in Animal Science fall rather neatly in 2 categories: (a) the above-average student who wishes to pursue a professional or academic degree, i.e., DVM, MA, PhD, and (b) the average student who loves working with animals and has a real aptitude for it but does not want to follow a science-based curriculum.

Job opportunities are plentiful for both types of students. Projections for the next 5-10 years predict that there will be more positions available than qualified applicants in the areas of Animal Production (feed manufacturing, nutrition, county extension agents, breed associations, herdsman, zoo keepers, etc.), Animal Science (research technicians, graduate school, veterinary medicine, college teaching, etc.), and Agribusiness (pharmaceutical & equipment companies, foreign agriculture, technical sales & service).

Andrews is the only SDA college/university that still has an operating farm or dairy and a viable Agriculture Department. This attracts students from all quarters of the Adventist church. Most of them start with us, but we do have several transfer students every year.

It is preferable for the Animal Science students to remain steadily involved with their academic major for the entire duration of their program. It is recommended that they take one or two major classes, one cognate class, and one or two general education classes each quarter to ensure they complete their degree in four years. Practicums, honors research, special projects and internships are completed at veterinary clinics and farms during the summer, but some are done during the school year at the University Dairy or cooperating veterinarian offices.

D. *The Proposed Program's Relationship to the Need of Society and the Church*

Andrews University is the only SDA institution offering a pre-veterinary program with a concentration in Animal Science. While veterinary colleges accept students from a wide array of disciplines, they recognize the value of Animal Science as a major and require experience in animal husbandry for candidates to veterinary programs.

E. *The Adequacy of Existing and Proposed Physical Facilities*

The classroom and laboratory space currently occupied by the Agriculture Department in Smith Hall and the Agriculture building provide adequate space and facilities for the foreseeable future.

F. *Establishing Financial Viability of the Program*

DEPARTMENTAL OPERATING ANALYSIS

Agriculture Department

Year	#Credits Generated @206.98	Tuition Income	Non-Tuition Income	Total Income	Total Operating Expense	Net Contributed Toward Overhead	Per Credit Contributed Toward Overhead
1992-93	780	161,444	11,066	172,510	107,178	65,334	83.76
1993-94	1,145	248,144	6,792	254,936	145,491	109,445	95.59
1994-95	1,581	334,041	12,886	356,927	165,920	191,007	120.81
1995-96	973	226,514	4,687	231,201	186,112	45,089	46.34
1996-97	1,086	262,953	8,906	271,859	172,262	99,597	91.71

1.64
1.75
2.15
1.24
1.58

The proposed BS in Animal Science has been offered for the past 4 years through an individualized degree. This not only established a track record for the program but also obviates the need for additional staff or facilities at this time.

CURRICULUM VITA

Katherine Koudele-Joslin
13844 Rangeline Road
Niles, MI 49120
(616) 695-1873

EDUCATION

- Doctor of Philosophy Department of Animal Science, Michigan State University, E. Lansing, MI. 1988. Dissertation title: The Effect of the Ability to Perceive Photoperiod on Puberty and Recurring Cycle in Mink, Mustela vison.
Major professor: Dr. Richard Aulerich
- Master of Science Department of Biology, Andrews University, Berrien Springs, MI. 1982. Thesis title: Factors Effecting Phonotaxic and Sexual Responsiveness in the Female House Cricket, Acheta domesticus.
Major professor: Dr. John Stout
- Bachelor of Arts Biology/Chemistry, Andrews University, Berrien Springs, MI. 1979. Member of Andrews Scholars.

PROFESSIONAL EXPERIENCE

- 1996-present Co-manager of Andrews University's 750-head dairy cattle farm
- 1995-present Associate Professor of Animal Science and coordinator of Animal Science curriculum, Agriculture Department, Andrews University.
- 1986-1995 Co-owner/operator of Grade A dairy operation and large purebred sheep flock, Blanchard, MI. 4-H (youth group) sheep section leader/instructor.
- 1982-1986 Graduate Research and Teaching Assistant in Animal Science at Michigan State University.
Research experience: Designed, conducted and analyzed reproductive physiology research on dairy heifers (control of ovarian follicular growth) and mink (photoperiodic effects on puberty). Analysis involved radioimmunoassay of serum samples for protein and steroid hormones levels, statistical analysis of data by computer, graphically representing results. Involved in conducting research with bovine growth hormone (lactating dairy cows) and cortisol (lactating beef cows). Prepared and submitted successful grant proposals to granting agencies in government and industry.

Teaching experience: Taught undergraduate labs on dairy cattle reproduction, general anatomy and physiology, management, including artificial insemination, reproductive tract palpation, parturition assistance. Presented classroom lectures on animal reproductive physiology and behavior, hormone action at cellular level. Conducted pre-test review sessions. Prepared test questions, administered and graded tests. Presented quarterly seminars to department and research group.

1979-1982

Graduate Research Assistant and Laboratory Instructor in Biology at Andrews University.

Research Experience: Conducted research on hormonal control and acoustic factors involving sexual responsiveness in female house crickets. Techniques used included microscopic dissection, oscilloscope monitoring, data entry and analysis by computer, darkroom photographic developing.

Teaching experience: Taught labs for Foundations of Biology and Systematic Botany including preparing and grading written and lab tests.

VETERINARY EXPERIENCE

- a) Blood collection from cattle by indwelling jugular cannula and tail vein, and by jugular venipuncture in mink.
- b) Large and small animal surgical techniques and post-operative care.
- c) Obstetrical assistance: dairy cattle, sheep, dairy goats.
- d) Daily care and treatment of neonatal calves, lambs, kids, and mature animals.
- e) Veterinarian assistant, Dowagiac Animal Hospital, Dowagiac, MI.

OTHER TEACHING EXPERIENCE AND CONSULTATIONS

- a) Technical Advisor, "Wonders of Birth" exhibit at Berrien County Youth Fair.
- b) Presented labs/lectures on dairy cattle reproduction to visiting 4-H groups at MSU.
- c) Youth instructor at Fenner Arboretum Nature Center, Lansing, MI.
- d) Recreational instructor, summer youth programs, Lansing, MI.
- e) Horsemanship instructor, Camp Au Sable, Grayling, MI.

PROFESSIONAL MEMBERSHIPS

American Association of Animal Science
American Association of Dairy Science
American Veterinary Medical Association

PUBLICATIONS AND PRESENTATIONS

Stout, J. and K. Koudele. 1982. Factors that influence the phonotactic responsiveness and selectivity of female Acheta domesticus. The IV International Meeting on Insect Sound and Vibration, Windsor, Ontario. pg. 6.

Aulerich, R.J., S.J. Burian, R.F. Nachreiner, M. Evans, B.A. Olson, J.R. Hochstein, T.C. Hornshaw and K.A. Koudele. 1985. Toxicological manifestations of dietary exposures to 3,4,5,3',4',5' -hexachlorobiphenyl in mink. The Toxicologist 5(1):266.

Koudele, K.A., A.C. Napolitano and R.J. Aulerich. 1986. Inability to perceive photoperiod affects testes size and testosterone secretion in mink. Biol Reprod 34 (suppl. 1):66.

Koudele, K.A. and R.J. Aulerich. 1986. What tells Ms. Mink that its time to mate? Fur Rancher 66(11):4,27. Reprinted in Fur Farmers Gazette of the United Kingdom. 1987. 37(1):4.

Aulerich, R.J., S.J. Bursian, M.G. Evans, J.R. Hochstein, K.A. Koudele, B.A. Olson and A.C. Napolitano. 1987. Toxicity of 3,4,5,3',4',5' -hexachlorobiphenyl to mink. Arch Environ Contam Toxicol 16:53-60.

Koudele, K.A., J. Stout and D. Reichert. 1987. Factors which influence female cricket (Acheta domesticus) phonotactic and sexual responsiveness to males. Physiological Entomology 12:67-80.

RONALD G. HAYDEN

12499 Hay Bar Drive
Buchanan, Michigan 49107
(616) 695-3017
October 1, 1989

CAREER OBJECTIVE:

To be employed by a modern, progressive agricultural based company, with advancement opportunities leading to management.

QUALIFICATIONS:

Possess very diversified educational and employment background. Competent, energetic, and have the ability to communicate, interact, and talk effectively to people of varying levels of knowledge. Problem solving, deductive reasoning and practical common sense are major resources.

EDUCATION:

Master of Science, Animal Science: Major; Meat Animal Production and Management, Minor; Agricultural Economics and Statistics.
GPA: 3.56. The University of Tennessee, Knoxville, TN 37901.
December 1989.

Thesis: "Evaluation of Factors Affecting the Sale Price of Performance Tested Bulls". A study conducted on performance tested bull data including junior and senior bulls from years 1982 through 1988 at the University of Tennessee bull testing facilities at the Middle Tennessee Experiment Station. This study partitioned out the total variability of sale price to that which can be explained by performance factors made available to prospective bull buyers on sale day.

Bachelor of Science, Animal Science: Major emphasis in economics and meat animal production. GPA: 3.02. Michigan State University, East Lansing, Michigan 48824. March 1986.

Associate of Science: Southwestern Michigan College, Dowagiac, Michigan 49047. June 1983.

Diploma: Buchanan High School, Buchanan, Michigan 49107. June 1981.

Financed 80% of educational costs through scholarships, summer employment and part-time school year employment.

SELECTED EMPLOYMENT:

Owner/Manager: Southwest Feed Company, Berrien Springs, Michigan 49103. June 1988 to present.

Co-ordinate all aspects of business operation to include ordering, purchasing, pricing, accounting, sales, taxes, community support, and everyday decision making.

Ronald G. Hayden
Resume Page 2

Graduate Teaching Assistant: Department of Animal Science, The University of Tennessee, Knoxville, Tennessee 37901. September 1986 to June 1988.

Primary responsibilities included: active involvement in several research projects, enrollment in several graduate courses each term, teaching of undergraduate courses, and coaching of the 1987 and 1988 Livestock Judging Teams.

Teaching responsibilities in the following courses: Farm Animal Management Practices, Feeds and Rations, Fundamentals of Food Animal Evaluation, Meat Animal Selection, Advanced Livestock Judging, Beef Cattle, Pork and Sheep Production, and Reproduction in Farm Animals.

Animal Caretaker: Department of Animal Science, Michigan State University, East Lansing, Michigan 48824.

General feeding, health maintenance and overseeing of the university cattle.

Further employment history available upon request.

VOLUNTEER WORK:

State 4H Livestock Assistant: Agricultural Extension Department, The University of Tennessee, Knoxville, Tennessee 37901. September 1986 to June 1988.

Assisted with several 4H and FFA livestock programs and activities at both county and state events.

Berrien County Youth Fair Volunteer: Berrien Springs, Michigan 49103. 1983 to present.

Assist with livestock shows preparations, commencement activities and clean up each year.

ACTIVITIES, INTERESTS, AND AWARDS:

Judging livestock of all species, Working with youth livestock activities, Promoting livestock events, Improving purebred livestock of all species, Sports, Hunting, Fishing, Environmental ecology, Reading, Keeping up to date on new technology within the meat animal industry. Eagle Scout; Boy Scouts of America, 1987 Teaching Assistant Award, Dean's List, and Dean's Advisory Council.

REFERENCES AND CREDENTIALS AVAILABLE UPON REQUEST

DEBRA KAY SMITH

1170 West Glendora Road, Buchanan, MI 49107, (616) 695-6746

EDUCATION

December 1991

Michigan State University, East Lansing, MI, **Master of Arts**, Major: College & University Administration, Cognate: Adult & Continuing Education.

June 1987

Michigan State University (MSU), **Bachelor of Science**, Major: Animal Science, Emphasis: Equine Management.

WORK

EXPERIENCE

October 1995 to
Present

4-H Program Assistant, Michigan State University Extension - Berrien County, Stevensville, MI. Recruit, train, manage, & retain more than 300 4-H leaders; recruit 4-H members; coordinate, facilitate, and evaluate 4-H programs/ events for more than 2200 Berrien County youth; promote 4-H through written material including press releases, and radio programs; serve as a liaison between the Extension 4-H Youth Agent and club leaders; resolve conflicts between and among leaders and their members; editor of 4-H Spotlight newsletter; generate correspondence to leaders and members; monitor 4-H budget; select, train and supervise the Summer 4-H Program Assistant; supervise the 4-H VISTA Americorp worker; serve on the following committees in a professional capacity: Berrien County Gender Equity Advisory Committee, Michigan State 4-H Science & Technology Programming Committee, and MSU Museum Planning Committee for the July 1999 exhibition "FAIR TIME! Fairs -- Educating Communities"; member of the following professional/community organizations: DOVIA - Directors of Volunteers in Agencies, Michigan & National Association of Extension 4-H Youth Agents, and SAIL - Substance Abuse Impairs Living; assist with maintenance of 4-H files on more than 50 clubs and preparation of reports through Blue Ribbon Enrollment software; complete other assignments as requested.

April 1993 to
September 1995

Admissions Counselor & Instructor, Agriculture Department, Andrews University, Berrien Springs, MI. Developed and taught four undergraduate courses; implemented and monitored recruitment system; revised and developed recruitment brochures and correspondence; advised prospective students; created display and hands-on educational activities for the annual Berrien County Youth Fair exhibit; developed and edited quarterly newsletter; increased community awareness of department offerings; assisted students with resume building, internship, and job placement; initiated and trained student ambassadors.

February 1993 to
September 1995

Educator/Volunteer Coordinator, Southwestern Michigan College Museum, Dowagiac, MI. Recruited, trained and managed approximately 40 museum volunteers; developed educational programs/activities for museum visitors; promoted museum through radio talk shows, television show, and community awareness exhibits; liaison between museum and Cass County teachers; coordinated the museum's first school/museum partnership exhibit "Dowagiac A-Z, Past, Present and Future" which included the work of 100 youth; coordinated District 6 Michigan History Day Competition; developed, coordinated and facilitated Badge-Mania for Girl Scouts of Singing Sands Council, Inc.; supervised student employees; monitored both the education and volunteer budgets.

RELATED WORK EXPERIENCE

- ❖ **Program Assistant**, April-August 1992, Michigan State 4-H Youth Programs, MSU.
- ❖ **Project Consultant**, May-September, 1992, State Fair Grant Project, Museum, MSU.
- ❖ **Recruitment Coordinator/Assistant**, September 1988-December 1991, College of Agriculture & Natural Resources, MSU.
- ❖ **Admissions Assistant**, September 1987-August 1988, Office of Admissions & Scholarships, (OAS), MSU.
- ❖ **Assistant Director**, Summers 1983-1988, Academic Orientation Program, OAS, MSU.
- ❖ **Departmental Aide**, March 1983-June 1987, OAS, MSU.

LEADERSHIP ACTIVITIES

- ❖ 1996 to present, Advisor to the Berrien County Youth Fair (BCYF)
- ❖ 1996 to present, Ag-Expo/USA Building Committee Member, BCYF.
- ❖ 1995 Co-Chairperson, Historical and Ag-Expo Building, BCYF.
- ❖ 1994 to present, Berrien County 4-H Resource Leader and Horse Judging Coach.
- ❖ 1989 & 1990 Assistant Horse Judging Coach, MSU.
- ❖ 1989, Co-taught undergraduate course - Project LEAD, ANR 350, MSU, Spring Quarter.
- ❖ 1988, Co-taught undergraduate course -Leadership Development, EAD 415A, MSU, Fall Quarter.
- ❖ 1988 MSU Homecoming Committee.
- ❖ 1987 Open House Student Committee Volunteer, MSU.
- ❖ 1983-1987 Open House Student Volunteer, MSU.
- ❖ 1986 MSU Horse Judging Team Member.

PERSONAL MEMBERSHIPS

- ❖ Michigan Farm Bureau
- ❖ Michigan Horse Council
- ❖ Michigan Cattlemen's Association
- ❖ National Arbor Day Foundation

HONORS

Honorary Alum of Sigma Alpha Sorority, Gamma Chapter.

INTERESTS

Owning and operating beef cattle/swine/field-crop farm, owning and training horses, fitness and travel.

PROFESSIONAL REFERENCES:

Ms. Mary Lou Long
Extension 4-H Youth Agent
MSU Extension - Berrien County
5060 St. Joseph Avenue
Stevensville, MI 49127
(616) 429-2425 wk
(616) 463-4879 hm

Dr. Thomas N. Chittick
Chairperson
Agriculture Department
Andrews University
Berrien Springs, MI 49104
(616) 471-6312 wk
(616) 473-6008 hm

Ms. Julie Chapin
Program Leader
Michigan State 4-H Youth Programs
6H Berkey Hall
Michigan State University
East Lansing, MI 48824
(517) 355-0180

Mr. Craig R. Olson
Director
Sioux City Public Museum
2901 Jackson Street
Sioux City, IA 51104
(712) 279-6174 wk

ADDITIONAL REFERENCES AVAILABLE UPON REQUEST