North Carolina State University

Department of Crop Science
College of Agriculture and Life Sciences

Box 7620
Raleigh, NC 27695-7620
(919) 737-2647
FAX: (919) 737-7959

MEMORANDUM

TO: Core International Faculty
FROM: Cecilia Bianchi-Hall
DATE: December 6, 1990
SUBJECT: On-campus Spanish classes. Spring Semester 1991.

****

I am currently reviewing the schedule and curricula needs for the weekly Spanish Language Courses sponsored by the **CALS International Program** for the spring semester 1991. To help me with this process I am requesting, if possible, advance registration from any faculty, staff or graduate students interested in learning or improving Spanish language skills, who can commit to regularly attend and participate in the courses.

Classes for each level will be held once a week and will be one hour long. There is no tuition charge, but a limit of ten participants per course is recommended. Classes will begin/resume on the week of January 7, 1991.

I know that balancing the variable demands of work with a regularly scheduled course is not easy, but the commitment to attend and participate every week is crucial for the benefit of all and each one in the class.

Please return the attached form to Barbara Fanning, Crop Science, Box 7620 (1239 Williams Hall) by Friday December 21, 1990. Also, please make this memo available to any others who may be interested.

Tentative Schedule:

Beginners I:	Wednesday	12:15-1:15 PM
	-or-	
	Wednesday	5:00-6:00 PM
Beginners II:	Monday	12:15-1:15 PM
Intermediate: and Advanced	To be set upon response	

PLEASE COMPLETE AND RETURN BY DECEMBER 21, 1990

NAME: _____

COURSE LEVEL: _____

DEPARTMENT OR PROGRAM: _____

OFFICE TELEPHONE NUMBER: _____

THE SCHEDULE FOR MY COURSE LEVEL IS CONVENIENT: _____

(PLEASE SPECIFY FOR BEGINNERS I): _____

IF INCONVENIENT; PLEASE WRITE DAY AND TIME OF BEST FIT: _____

_____

North Carolina State University

Academic Affairs
Office of the Director
College of Agriculture and Life Sciences

Box 7642, 115 Patterson Hall
Raleigh, NC 27695-7642
(919) 737-2614

November 1, 1990

MEMORANDUM

TO: Advisers

FROM: William C. Grant

SUBJECT: Announcement

I would appreciate your informing students that Physician's Assistant career information will be presented during the next meeting of the African-American Science and Health Society.

PHYSICIAN'S ASSISTANT CAREER INFORMATION

Speaker: **Mr. L. T. Alexander**
Physician's Assistant Program
Duke University Medical Center
Durham, NC

Date and Time: **November 8 at 6:30 p.m.**
(Meeting of the African-American Science and Health Society)

Location: **3533 Gardner Hall**

For additional information, contact:

Dr. William C. Grant
737-2614

North Carolina State University

Academic Affairs
Office of the Director
College of Agriculture and Life Sciences

Box 7642, 115 Patterson Hall
Raleigh, NC 27695-7642
(919) 737-2614

November 1, 1990

MEMORANDUM

TO: African-American Coordinators

FROM: William C. Grant

SUBJECT: Announcement

Please inform students of the following medical career information session:

MEDICAL CAREER SEMINAR

Speaker: **Mr. Leroy Moore**
Assistant Vice Chancellor
The Medical School
University of Tennessee
Memphis, TN

Date and Time: **November 7 at 3:00 p.m.**

Location: **Room 2, Patterson Hall, NCSU**

For additional information, contact:

Dr. William Grant
737-2614

AGRICULTURAL
EXTENSION
SERVICE

North Carolina State University
College of Agriculture and Life Sciences

Office of 4-H and Youth Development
Box 7606
Raleigh, N.C. 27695-7606
Telephone: 919/737-3242

June 14, 1990

lmc
no nomination

MEMORANDUM:

TO: Dr. Lawrence M. Clark

FROM: Dr. Michael A. Davis
Michael A. Davis
Associate State 4-H Leader
Extension Specialist In Charge

RE: **Agricultural Sciences Career Institute Nominations**

The Agricultural Sciences Career Institute is a dynamic new statewide program for high school students (ages 15-18) to learn more about the diverse career opportunities available in agriculture. The program was piloted in 1988-89 under the name, "Farm Family Stability Program." This program is being implemented by North Carolina Agricultural Extension 4-H Program in cooperation with North Carolina State University. The enclosed packet describes the program more fully. We are requesting nominations of students with career interests in agriculture including science, business and production. This program requires a two year committment on the behalf of the students. Tentatively, this will include four, 2-3 day weekend sessions and one week long session each summer. In addition, the students will work on short and long term projects over the two year period. The program will be partially funded by support from agriculture groups. The participants will be asked to pay a small fee for each session to help defray costs ($10.00 per instructional day).

Please share this information with with anyone you think might have contact with interested students. The completed nomination forms should be mailed to Dr. H. B. Craig, 4-H and Youth & Development, NCSU, Box 7606, Raleigh, NC 27695-7606, by July 15, 1990. If you have any questions feel free to call Dr. Craig at (919) 737-3242.

MAD:pdj

enclosures

Nomination Form

AGRICULTURAL SCIENCES CAREER INSTITUTE

I. Name of Nominee_____

Address_____Zip_____

Home Telephone #(___)_____ Age_____ Sex_____

Names and Ages of Siblings_____

Parents' Names: Father_____

Mother_____

School Attending_____

Grade in School_____ Class Rank_____Out of_____

Number of Years Membership in: 4-H_____ FFA_____ FHA_____

Beta Club____ FBLA____ DECA_____ HOSA____

Student Council_____ Honors Society_____

Church Youth Organization_____

Other_____

(membership in these organizations is not required for this program)

Leadership Positions and Offices Held:_____

_____

_____

_____

Acheivements and Recognition :_____

_____

_____

_____

II. Demographics:

Farm____ Town or city less than 50,000_____

Rural, non-farm_____ Urban_____

Complete only the sections that apply:

Farm Total Acres Owned_____ Rented_____

Acres of: Corn_____Peanuts_____Cotton_____

Tobacco_____Small Grain_____Soybeans_____

Other_____

Number of Livestock:

Beef Cattle_____ Dairy Cattle_____

Horses_____ Sheep_____Swine_____

Poultry_____Other_____

Agri-business

Computer Experience: Some_____ None_____

List any business experience. Include the nature of the business (example: retail farm supply, crop management, livestock management, nursery, etc...), and your responsibilities (example: stock person, cashier, assistant manager, etc...). _____

_____

_____

_____

_____

III. Interest in Agriculture: Attach the nominee's statement explaining their interests in any aspect of agricultural careers and how this program could benefit them. Maximum of two pages.

IV. Statement of Nominee:

I have read the statement of the Agricultural Sciences Career Institute Program, and am willing to be nominated for participation in this program. I have an interest in learning more about career opportunities in agriculture in hopes of establishing career goals for myself. Except for any period of illness or other extreme emergency, I agree to attend all sessions scheduled in this program.

Signed_____ Date_____

V. Statement of Parent/Guardian:

We are willing for our child to be a nominee for the Agricultural Sciences Career Institute Program. Further we are willing to cooperate and provide encouragement and guidance for our child as she/he completes this learning program.

Signed_____ Date_____

Signed_____ Date_____

VI. Letters of Reference:

Please ask two people who know the nominee well to submit letters to Dr. H. B. Craig, 4-H and Youth Development, Box 7606, NCSU, Raleigh, NC 27695-7606, by July 15,1990. The completed nomination form and the student's statement are to be sent to this address as well. If you have any questions call (919) 737-3243.

AGRICULTURAL SCIENCES CAREER INSTITUTE

PURPOSE

The Agricultural Sciences Career Institute is an intensive, two-year educational program for fifteen to eighteen year old youth, designed to enhance the capabilities of these youths to have productive employment futures in the far reaching agricultural science fields. The experience will broaden the agricultural perspective of the young people of various backgrounds and career interests to include agribusiness, agriscience, and agricultural production. Knowledge and practical skills will be developed through group experiences, individual learning projects conducted by the youths under the guidance of adult mentors, and involvement of families.

Outlook on North Carolina Agriculture

Trends

Currently there are 59,284 farms in North Carolina.

The average size of a farm is 159 acres.

The average age of farmers in North Carolina is 53.3 years.

North Carolina's agriculture, food, fiber and forestry industries account for 34% of North Carolina's total income on a value-added basis.

Eighteen and a half percent of North Carolina's workforce, or 502,113 people, are employed by the agriculture, food and forestry industries.

In North Carolina, there is a tremendous shortage of labor available for farm jobs.

Currently there is a shortage in the United States of 2,400 scientists and engineers, related to the agriculture industry, each year.

The need for persons with a masters degree in finance and business management is continuing to grow.

In the areas of marketing and sales, there is currently a shortage of 2,800 people per year.

ATTITUDES

Many high school teachers, counselors, and students are at least one generation removed from the farm.

Parents and teachers often equate agriculture with low achievement and low salary.

Many people don't see agriculture and science or business as being related.

FUTURE

Future adults, regardless of their training, are going to make decisions related to issues affecting agriculture.

Young people who choose production agriculture as a career will need enhanced skills in financial management, environmental management, marketing, policy, labor, and international issues, as well as networks for getting information.

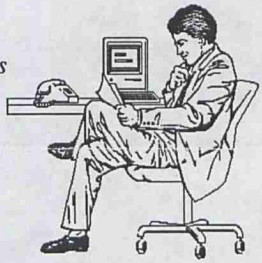
It is important that young people who choose careers that support production agriculture be knowledgeable of farming.

RECRUITMENT

Recruitment: Nominations from commodity groups, farm organizations, extension agents, parents, teachers, counselors, agri- businesses, etc.

CURRICULUM

AGRI-BUSINESS



- Business management
- Career options
- Economics and policy
  - *Alternative business structures*
  - *Consumer demands*
- Marketing
  - *Commodity associations*
  - *International trade*
  - *Product marketing*

AGRICULTURE PRODUCTION

- Alternative enterprises and production techniques
- Economics and policy
  - *Environmental and health ethics*
  - *Marketing strategies*
- Farm management
  - *Conservation*
  - *Resource analysis (land, machinery, labor, finances)*
  - *Record keeping*

AGRI-SCIENCE

- Animal welfare
- Bio-technology
- Environmental protection
- Networking
- Nutrition
- Pharmaceuticals
- Product testing and development
- Robotics

PERSONAL DEVELOPMENT

- Career exploration
- Communication skills
- Community involvement
- Leadership

INSTRUCTIONAL METHODS

- Seminars
- Family involvement
- Mentor relationships
- Computer applications
- Long term learning projects
- Short term learning projects
- Career Exploration Interviews
- Career shadowing and/or internships
- Presentations about modern agriculture and career opportunites to youth and civic groups
- Tours of college campuses, expositions, agribusinesses, ports, corporations, farms, and research stations
- Micro-computer instruction using software related to decision making programs such as enterprise analysis, least-cost production, business records, production and management simulation programs

These are a few comments that people have made about the the Agricultural Sciences Career Institute, formerly called the Farm Family Stability Program.

"Before my daughter's involvement in this program, she had a very limited, slightly negative view of agriculture. She had no idea of the scope, opportunities or magnitude of agriculture in North Carolina."

Parent

"This was one of the greatest experiences of my son's life. He has computerized our farm records and has gained the confidence needed to operate the farm."

Parent

"I can not personally imagine another way a donor could better spend money to benefit agriculturally oriented youth, than with this program. The program is exucuted in a most professional manner, the staff is totally committed, the material is challenging, timely, and appropriate."

Mentor

"As I look back on my participation in the Farm Family Stability Program I remember most,the close friends I made, the concerns of others dealing with agriculture, and the hope that lies in the future for agriculture."

Participant

"My son has learned so very much through this program. He has been enriched by what he has seen and the wonderful people he has met. Most importantly he has learned confidence. He can speak before people and is not afraid to try new things."

Parent

AGRICULTURAL EXTENSION SERVICE

North Carolina State University
College of Agriculture and Life Sciences

Agricultural Extension Service
Office of the Director
Box 7602
Raleigh, N. C. 27695-7602

VACANCY LISTING # 04-17-90

DEADLINE FOR APPLICATION: MAY 17, 1990 or until a suitable candidate applies, whichever is later.

POSITION	AREA(S) OF RESPONSIBILITY	COUNTY LOCATION	AVAILABLE
Ext. Agent, 4-H	4-H & Youth	Caldwell	05-17-90
Ext. Agent, Agr.	Horticulture, Community & Rural Development (CRD)	Dare	05-17-90
County Extension Director	Administration & Appropriate Subject Matter	Mitchell	06-01-90
Ext. Agent, 4-H	4-H & Youth	New Hanover	05-17-90

See reverse for position description and requirements.
If you wish to apply for any positions, follow one of these procedures:

NEW CANDIDATES: Contact Susan Y. Lyday, Extension Personnel Development Specialist, Box 7602, Raleigh, NC 27695-7602.

APPLICANTS IN 6-MONTH ACTIVE STATUS: Indicate your interest in particular positions in writing to the above address.

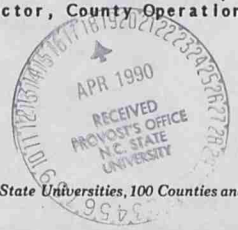
APPLICANTS IN POST 6-MONTH STATUS: Call Extension TELETIP 1-800-662-7301 (N.C.) or 1-919-737-3737 (out-of-state) to receive information about currently available positions. Request tape #P-85. New vacancies will be placed on TELETIP by the 20th of each month. Indicate your interest in particular positions in writing to the above address.

CURRENT EMPLOYEES: Contact your County or District Director prior to writing Dr. Paul Dew, Assistant Director, County Operations.

Sincerely,

Susan Y. Lyday

Susan Y. Lyday
Extension Personnel Development Specialist



POSITION DESCRIPTION

Requirements for available positions in the N. C. Agricultural Extension Service are listed below. Please DO NOT apply for positions for which you are not academically or otherwise qualified.

POSITION CATEGORIES	BASIC REQUIREMENTS[1]/	GENERAL DUTIES
County Extension Director	Bachelor's degree in relevant field; must have received associate Extension agent appointment and completed two years of service with the N.C. Agricultural Extension Service; M.S. highly preferred. *A Master's degree may substitute for 1 year of experience; a Ph.D for 2 years.	Provides administrative and supervisory leadership for the development, organization and implementation of an effective total Extension program in agriculture, home economics, 4-H, and community and rural development to meet the needs of the people in the county. Has program responsibility in assigned areas.
County Extension Agent, Home Economics	Bachelor's degree in Home Economics-related concentration or Home Economics Education; M.S. preferred. Significant course work in the area of responsibility listed.	Provides leadership for the development and implementation of an effective educational program within assigned areas of home economics and related areas to meet the needs of the people in the county.
County Extension Agent, Agriculture	Bachelor's degree in Agricultural-related concentration or Agricultural Education; M.S. preferred. Significant course work in the area of responsibility listed.	Provides leadership for the development and implementation of an effective educational program within assigned areas of agricultural responsibility and related areas to meet the needs of the people in the county.
County Extension Agent, 4-H	Bachelor's degree in Home Economics or Agriculture, related Behavioral Sciences, or Education; M.S. degree preferred.	Provides leadership for the development, organization and implementation of effective 4-H programs that will meet the needs of the people in the county.

[1]/All positions require: a minimum cumulative grade point average of 2.5 overall or a 3.0 in the major field of study (based on 4.0 scale), or completion of a Master's degree; personal automobile; valid driver's license; skill in oral and written communications; interest in and ability to work effectively with people.

THE NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE
PROVIDES EQUAL OPPORTUNITIES IN PROGRAMS AND EMPLOYMENT

11/01/88

TELEPHONE LIST - COLLEGE OF AGRICULTURE & LIFE SCIENCES - JULY, 1989

DEPARTMENT			ADDRESS	TELEPHONE
ADULT & COMM. COLL. ED.	E. J. Boone, Head	Ruth Shultz	Box 7607 120 Ricks	2707, 2819
AG COMMUNICATIONS	D. M. Jenkins, Head	Pat Robertson	Box 7603 118 Ricks	2800, 2804
ANIMAL SCIENCE	L. S. Bull, Head	Joan Little	Box 7621 123 Polk	2755, 2756
	Roger McCraw, Acting Ext. Spec.	Animal Husbandry	117 Polk	2761
	D. P. Wesen, Acting Ext. Spec.	Dairy Husbandry	102 Polk	2771
	J. R. Jones, Ext. Spec.	Swine Husbandry	201 Polk	2566
BIOCHEMISTRY	P. F. Agris, Head	Joan Johnson	Box 7622 126 Polk	2581
BIOL. & AG. ENGINEERING	J. H. Ruff, Head	Brenda Butts	Box 7625 100 Weaver	2694, 2695
	F. J. Humenik, Ext. Spec.		200 Weaver	2675
BOTANY	E. D. Seneca, Head	Joyce Bruffey	Box 7612 2214 Gardner	2727
CROP SCIENCE	J. C. Wynne, Head	Jeane Koleno	Box 7620 2207 Williams	2647, 2648
	W. K. Collins, Ext. Spec.		2212 Williams	2653
ECONOMICS & BUSINESS	D. M. Hoover, Head	Barbara Holland	Box 8109 201 Patterson	3273
	C. L. Moore, Ext. Spec.		212 Patterson	3107
ENTOMOLOGY	J. D. Harper, Head	Rita Reynolds	Box 7613 2301 Gardner	2746
	P. S. Southern, Ext. Spec.		2309 Gardner	2697, 2703
FOOD SCIENCE	D. R. Lineback, Head	Donna Sartain	Box 7624 100 Schaub	2951
	D. Ward, Ext. Spec.		129 Schaub	2956

EXT. FOREST RESOURCES	Ext. Spec.	Laura Terry	Box 8003 3036 Biltmore	3386
4-H & YOUTH DEVELOPMENT	D. R. Proctor, Head	Helen Thompson	Box 7606 201 Ricks	2801
GENETICS	W. R. Atchley, Head	Janet Wilson	Box 7614 3513 Gardner	2292
HOME ECONOMICS EXT.	M. R. Johnson, Head	Charlotte Hinton	Box 7605 107 Ricks	2781
HORTICULTURAL SCIENCE	T. J. Monaco, Head M. A. Powell, Jr., Ext. Spec.	Barbara Amos	Box 7609 120 Kilgore 160 Kilgore	3131 3321
MICROBIOLOGY	L. W. Parks, Head	Jerry Boles	Box 7615 4515 Gardner	2391
PLANT PATHOLOGY	W. L. Klarman, Head H. E. Duncan, Ext. Spec.	Joyce Johnson	Box 7616 2518 Gardner 1410 Gardner	2730 2711, 2712
POULTRY SCIENCE	G. B. Havenstein T. A. Carter, Ext. Spec.	Marie Cummings	Box 7608 120 Scott 208 Scott	2626, 2627 2621
SOCIOLOGY, ANTHROPOLOGY & SOCIAL WORK	L. B. Otto, Head S. K. Garber, Ext. Spec.	Penny Lewter	Box 8107 301-1911 237-1911	3180 2670
SOIL SCIENCE	Eugene Kamprath, Acting Head J. P. Zublena, Ext. Spec.	Carolyn Balickie	Box 7619 2234 Williams 1225 Williams	2655, 2656 3285
STATISTICS	D. L. Solomon, Head	Rachel Dupree	Box 8203 110 Cox	2420
TOXICOLOGY	Ernest Hodgson, Head	Faye Llyod	Box 7633	2274
ZOOLOGY	J. G. Vandenbergh, Head G. J. San Julian, Ext. Spec.	Shirley Waters	Box 7617 2123 Gardner 3112 Gardner	2741 2741

ADMINISTRATION		Box	Room	Phone
OFFICE OF THE DEAN				
Dean D. F. Bateman	Billie Frazier Bee Smith	7601	112 Patterson	2668 2641
Assistant Dean				
R. E. Cook	Sherlyn Harrell	7601	110 Patterson	7222
Administrative Offices				
R. W. Gay, Jr.	Wanda Dupree	7644	1 Patterson	2710
Accounting: Penny Dixon, Research/Academic				2714
Carolyn Phillips, Extension				3158
Kathy Woodson, Research/Academic/Extension				2716
Development Officer				
D. G. Harwood, Acting	Paula Oxendine	7645	120-C Patterson	2000
DIRECTOR OF ACADEMIC AFFAIRS				
J. L. Oblinger	Pam Morton	7642	115 Patterson	2614
Student Records: P. Warrick				2615
BS Teaching Coord.: C. F. Lytle	Barbara Howard	7611	2717-A Bostian	3341
Assistant Director				
Ag. Institute: Jon F. Ort	Marie Holt	7642	107 Patterson	3248
Placement: M. Moore	Rosalee Thomas		111 Patterson	3249
DIRECTOR OF EXTENSION				
Director C. D. Black	Dot Kennihan	7602	104 Ricks	2811
Associate Director				
R. C. Wells	Marjorie Russell		108 Ricks	2812
Assistant Directors				
Support Systems: V. E. Hamilton	Sylvia Edwards		302 Ricks	2788
State Leader, ANR: B. E. Caldwell	Carolyn Bunn		214 Ricks	3252
County Operations: P. E. Dew	Sue Mills		108 Ricks	2813
4-H & Youth Dev.: D. R. Proctor	Helen Thompson	7606	201 Ricks	2801
Ext. Home Econ.: M. R. Johnson	Charlotte Hinton	7605	107 Ricks	2781
Training: E. J. Boone	Ruth Shultz	7607	120 Ricks	2707

DIRECTOR OF RESEARCH

R. J. Kuhr	Eleanor Hart	7643	100-C Patterson	2718
Adm. Officer: A. Caldwell	Shirley Morgan		106 Patterson	2666

Associate Director

J. L. Apple	Jane Beard	7112	209 Daniels	2665
G. J. Kriz	Eleanor Hart	7643	100-A Patterson	2718

Assistant Directors

L. E. Saylor	Charlotte Swart	8001	2028-C Biltmore	2883
W. H. Johnson	Gayle Peacock	7643	100-B Patterson	2718
C. E. Stevens	Sally Patterson	8401	SVM	829-4213
J. Voss, Dean, School of Human Environmental Sciences, UNC-Greensboro	Sylvia Lippard	Courier 214		919-334-5980

Other Research Offices

Univ. Farms: W. Baker	Judy Coley	7643	3720 Lake Wheeler Rd.	2823
Phytotron: R. J. Down	Vickie Vick	7618	2003 Gardner	2778
Research Stations, NC Dept. of Agr.: P. H. Kelley	Alice Honeycutt	7601	NCDA, Raleigh	733-3236

NCSU ADMINISTRATIVE COUNCIL

Chancellor

B. R. Poulton	Tommie Bennett	7001	A Holladay	2191
	Sue West		A Holladay	2191
University Attorney: B. French	Patrice Hill		A Holladay	2319
Sec. of the Univ.: W. H. Simpson	Vickie Myers		A Holladay	2200

Vice Chancellor & Provost

N. N. Winstead	Gloria Johnson	7101	109 Holladay	2195
Assoc. Provost: M. S. Downs	Becky Ingle		1-B Holladay	2194
Assoc. Provost: L. M. Clark	Carol Ingram		201 Holladay	3148
	Karin Wolfe		208 Holladay	3409
Personnel	Linda Tolson		201-A Holladay	2193
Undergraduate Courses & Curricula	Connie Steed		1-B Hollday	2931

Vice Provost & Dean of the Graduate School D. Stewart	Pat Lineback	7102	103 Peele	2394
Vice Chancellor for Research F. Hart	Anne Canady	7003	103 Holladay	2117
Vice Chancellor for Extension & Public Service - Art White, Interim	Gerda Ellison	7401	200 McKimmon	2145
Vice Chancellor for Student Affairs T. H. Stafford, Jr.	Deborah Henderson	7301	101 Holladay	2446
Coordinator of International Programs - J. L. Apple	Jane Beard	7112	209 Daniels	2665
Vice Chancellor for Finance & Business - G. L. Worsley	Margaret Mills	7201	B Holladay	2155
Vice Chancellor for Development J. T. Kanipe, Jr.	Anne Holland	7501	12 Holladay	2846
Chairman, Faculty Senate Ray Long	Pat Cellini	7111	2319 D. H. Hill Library	2279
Dean, Agriculture & Life Sciences D. F. Bateman	Billie Frazier	7601	112 Patterson	2668
Dean, Design D. Dalton, Acting Dean	Jackie Robertson	7701	200 Brooks	2201
Dean, Education Joan Michael	Winnie Peoples	7801	208-C Poe	2231
Dean, Engineering L. K. Monteith	Fran Coats	7901	109 Page	2311
Dean, Forest Resources L. W. Tombaugh	Nancy Roberts	8001	2028-H Biltmore	2883
Dean, Humanities & Social Sciences - W. B. Toole, III	Joyce Barbour	8101	106 Caldwell	2467

Dean, Phys. and Math. Sciences				
Jerry L. Whitten	Wanda Murray	8201	115 Cox	2501
Dean, Textiles				
R. A. Barnhardt	Nancy Martin	8301	101 Nelson	3231
Dean, Veterinary Medicine				
T. M. Curtin	Sandra Owens	8401	4700 Hillsborough	829-4210

North Carolina State University

Department of Biological and Agricultural Engineering
College of Agriculture and Life Sciences

Box 7625
Raleigh 27695-7625
FAX: (919) 737-7760

January 31, 1990

Memorandum

To: Larry Clark
Ray Long
Art Cooper
Murray Downs
Bob Bereman

From: Frank Abrams

Subject: UNC-CH Faculty report on athletics

You may be interested in having a readable copy of the report of the UNC-CH faculty committee chaired by Professor Doris Betts. The copy which had been distributed to some of us earlier was of poor quality, and it had significant strikeouts which resulted from an unfortunate interaction of some reader's highlighting pen color and the photocopier. This copy was provided me by Professor Harry Gooder, UNC-CH Faculty Chair. You may want to share it with members of the groups you chair, as well which have interest or responsibility relative to athletics.

The UNC-CH Faculty Council is now in the process of considering this report. At its Jnauary 19, 1990 meeting it debated and endorsed the "Recommendations for National and Local Reform' (see page 7). They will debate the "Recommendations for local reform at their next meeting (in March, I think).

Encl.

REPORT OF THE AD HOC COMMITTEE ON ATHLETICS AND THE UNIVERSITY

December 15, 1989 Faculty Council Meeting

This committee was appointed in response to a resolution adopted by the Faculty Council on February 19, 1988. Its charge, as formulated in that resolution, is the following:

> . . . to (1) examine all relevant aspects of the University's intercollegiate athletics program, its scope, procedures, financing and other resources, and its relations to private entities operating under the aegis of the University, (2) report to the Faculty the facts with respect to the foregoing, and in what ways and to what extent, if any, these may be at variance with the University's purposes and standards of conduct, and (3) make recommendations for action by the Faculty and the administration, as appropriate.

We have carried out the investigations called for in this charge and are pleased to report that the Department of Athletics, the Educational Foundation, and other offices and agencies of the University have provided all the data for which we have asked and have been frank, cooperative, and helpful. We began our inquiries with two meetings that were open to all members of the faculty. As a committee we have met with the Chancellor, two former chancellors, five former chairmen of the Board of Trustees, the President Emeritus of the University of North Carolina, the President of the Student Body, several of the coaches, and other knowledgeable persons. Our subcommittees have independently consulted many additional people. We have solicited the experience and opinions of randomly selected student-athletes by means of a questionnaire and have interviewed student-athletes chosen at random from teams in a variety of sports, including football and basketball. Some of our subcommittees and members have conducted special studies and inquiries in their own lines of interest. Our efforts, in short, have been laborious. We hope the report will be useful to the University.

The authors of the resolution under which this committee was appointed wrote that ". . . the University should . . . strive to set, and to be seen as setting, the highest standards in the conduct of all its undertakings." We have tried in our work to observe that precept and to apply it in the judgments we have made.

The information we have accumulated is contained in several subcommittee reports and other documents. As a whole, these are too voluminous to be circulated with this report, so we have filed them with the Secretary of the Faculty so that he can make them available, as and when requested, to those members of the University community who wish to study them. They are, in effect, appendices to this report.

Our recommendations appear in the pages that follow, beginning on page 7. There are thirty-two of them. Because their content and arrangement can be correctly understood only in the light of the introduction that follows, we ask our colleagues to read the introduction before passing to the recommendations.

We are deeply grateful for the help given us by Professor Joseph H. Bylinski, who analysed for us the financial information provided by the Department of Athletics and the Educational Foundation. Professor Lawrence B. Rosenfeld formulated the original design of our questionnaires and gave us an analysis of the results. Finally, we are greatly indebted to our secretary, Ms. Ann R. Zappa, of the Chancellor's Office, for indispensable aid of many kinds.

I. INTRODUCTION

Three features of our program of intercollegiate athletics deserve notice at the head of this report. The first is the Faculty Committee on Athletics, which, two years ago, was changed from an appointive committee to an elective one. Under the leadership of Alumni Distinguished Professor Richard G. Hiskey, that committee has developed excellent procedures for monitoring and evaluating the admission of student-athletes and their academic achievements and problems. One of our recommendations (No. 32) is that the purview of this committee be broadened. The second is the establishment by the Department of Athletics of an academic support center for student-athletes, directed by Mr. John G. Blanchard. This center is well equipped and well directed. It has long been needed. It will be a vital component of all efforts to improve and enrich the educational side of our program of intercollegiate athletics.

Third: In the course of our inquiries we have perceived no indications that our program of intercollegiate athletics is in conflict with the Constitution and Bylaws of the National Collegiate Athletic Association, and we have been impressed with the care taken in our Athletic Department, and by the coaches and their staffs, to avoid such conflict. If we take the NCAA regulations as a standard of judgment, we believe our program is one of the best in the country. All this reflects credit on the Department of Athletics, under the leadership of its Director, John Swofford, and his staff, the coaches and their staffs, and all those agencies of the University administration and faculty that interact with our program of intercollegiate sports.

Our charge, however, is to determine how, and to what extent, our intercollegiate athletics program "... may be at variance with the University's purposes and standards of conduct." On that issue our finding is that all intercollegiate athletic programs of NCAA Division I-A,[1] including our own, are in varying degrees in conflict with the purposes and standards of universities in general. That is to say, the intercollegiate athletic programs of The University of North Carolina at Chapel Hill, and all other I-A universities are part of a nationally competitive athletic system which, in its current state, is in conflict with university principles and priorities. Every university, in its athletic programs, exploits the maximum competitive options the system allows. No university will reform its programs until the system itself is reformed and the reforms are made obligatory for all. And the system, as regulated by the NCAA, strongly resists reform. The result is a deadlock between reform and opposition to reform. Either that deadlock is resolved, or the troubled partnership of universities and intercollegiate athletics will sooner or later be terminated.

This perception, and others to which our investigations and studies have led us, are widely held in public opinion. The exceptional degree of public distrust and discontent with intercollegiate athletics shown recently in polls[2] and in the press reflects a growing sense, inside and outside the universities, that intercollegiate sports programs are out of proportion to their functional place in the academic world, that some student-athletes are not students and do not genuinely represent the student bodies of which they are nominally members, that the effort to enroll them and keep them eligible results frequently in a corruption of the academic process, and that the ideal of amateur collegiate sportsmanship engraved in the NCAA constitution[3] has been overwhelmed by an abundance of money and an intensity of competition and publicity that drive intercollegiate sports toward professionalism.

Some of this public discontent is caused by publicized violations of NCAA standards in which boosters provide money, cars, and rent-free apartments to athletes,[4] universities enroll heavily recruited athletes who have neither the ability nor the inclination to study, and administrative officers and faculty members favor athletes with exceptions that are not available to other students, so that the athletes can maintain their academic eligibility to compete. But the NCAA standards themselves are inconsistent with academic values. The playing and practice seasons and game schedules allowed in the NCAA bylaws are excessive. Hours of practice, which the NCAA does not try to limit, have risen in some universities and in some sports to levels that deny student-athletes the time and energy they need to earn their degrees. In their present form, in fact, the NCAA bylaws offer student-athletes no protection against demands of practice, travel, and play that impede their efforts to succeed as students and prepare themselves for careers other than those of professional sports.

We think it obligatory to say in this report that intercollegiate athletics – for all the drama, enjoyment, and sociability it provides -- is a university function of secondary importance. The primary functions are teaching and learning, research, and public service. But intercollegiate sports, except for those who participate in it, is primarily entertainment. Aside from the two hundred to four hundred student-athletes each Division I university recruits, students learn nothing from intercollegiate athletics that they could not learn from watching professional sports on television or attending analytical courses on sports. The NCAA itself declares that student-athletes are students first and athletes second.[5] It classifies intercollegiate athletics as an avocation or a recreational pursuit.[6] Although it insists that athletic programs must be "maintained as a vital component of the educational program . . . ,"[7] we have discovered no meaningful sense in which that is accomplished except by subsidizing the education of the student-athletes themselves, which, in many athletic programs, is overwhelmed by requirements of practice and play that obstruct the education of student-athletes and prevent some of them from earning their degrees.

The scale on which Division I-A athletic programs operate obliges them to solicit donations on a large scale, year after year, to pay operating costs, build and amortize facilities, and constitute endowments for sports programs. It drives universities that cannot fund these efforts into debt. It compels all Division I-A revenue sports programs to pursue opportunities to play in bowl games and post-season tournaments in order to secure big television fees. The size and extent of athletic facilities on the campus and the excessive exposure intercollegiate sport receives in the media nourish a public misunderstanding of the purposes and priorities of higher education. That misunderstanding takes root in the minds of many students and remains rooted when they become alumni. Here and there, the system of competitive intercollegiate sports has generated coalitions of coaches, administrators, faculty members, trustees, and boosters who intimidate or manipulate administrators and faculty members, reward some student-athletes in ways the NCAA prohibits, and maintain by illicit methods the eligibility of student-athletes who would otherwise have become ineligible to play. Finally, while university administrations and athletic staffs are mortal, the competitive pressures under which they work are eternal. Accordingly, a program that has for years been responsible and constructive may become corrupt, as responsible administrators and coaches are succeeded by others more responsive to the mandate to win at all costs.

Efforts to correct the anomalies presented by intercollegiate sports have been resisted in the universities and in the NCAA. One theme in the history of American intercollegiate sports is that of a continuous struggle between the partisans of wide competitive freedom and those of restraint and reform. This has never been a struggle purely of athletes against academics. In all the major groups involved -- university administrators, faculty members, students, alumni, directors of athletics, conference officials, coaches, players, former players, and journalists – there are, and have been, both libertarians and reformers. Some of the reformers are coaches: although the amplitude of achievement and reward in their profession is on the line, most of them care about their players and the players' future, and some coaches are outspoken critics of the inability of the NCAA to sustain its principles and enforce its regulations.[8] Correspondingly, while some university administrators and faculty members are partisans of reform, others are libertarians. Most, however, are simply indifferent to the effect of unbridled athletic competition on their institutions.

These divisions are apparent in the proceedings of the NCAA. In the Annual Convention of that organization, each of the 791 participating colleges and universities and each of the 79 member conferences casts one vote. A representative who casts the vote of a college or university is appointed by his or her institution to do so and presumably votes according to instructions of his or her administration. But the fact that the efforts of reformers on significant issues have been so often blocked indicates that many presidents and chancellors are either disinterested in or misinformed on the issues, or hostile to regulation and restraint. Why is this so?

The American system of competitive intercollegiate sports is driven by motivations that are deeply rooted in the society and the culture and very difficult for universities to resist. There is the academic tribalism by which fans and boosters choose an institution and support its teams with fervor, money, and loyalty to the death. There are the compulsions of competition, under which winning is not everything, it's the only thing, and nice guys finish last.[9] There is the unremitting pressure to win that bears constantly on coaches, athletic directors, presidents, and chancellors. (In the eyes of the press and the fans, every loss is a humiliation, and must be accepted as such.) There is the irresistible

dogma, which was foreshadowed as early as the 1880s,[10] that the status and growth of academic institutions are somehow linked to the performance of their athletic teams in the revenue sports (football and men's basketball), the conference championships they win, and their prominence in post-season play. Most university administrative officers and faculty members seem to have assumed that winning teams in the revenue sports are essential to alumni loyalty and the success of funding drives. Some of them have been intimidated by coalitions of boosters represented in boards of trustees, and, in fact, some presidents have had to resign for trying to reform their academic programs against the will of such coalitions.

Faculties, also, have not given the reform of intercollegiate athletics the active support it requires. The reason is that faculty efforts to investigate and reform athletic programs have until recently received little support from the administrations or even from the faculties themselves, and further efforts have seemed like a poor investment of time. Most faculty members, we surmise, have reasonably concluded that sports programs carried to excess are necessary evils that should be left in the discreet care of the administrators, who are paid well enough to assume responsibility for them. These and other reasons account for the success with which reform has been opposed in the NCAA and in the institutions themselves.

One of the major obstacles to reform is the disadvantage any university faces when it tries unilaterally to reform its own athletic programs. Being under formidable pressure to have its teams compete at the limit of opportunity the intercollegiate system allows, it cannot sustain for long, against that pressure, reforms that reduce the competitive strength of its teams, as most desirable reforms would do. To cut schedules and practice time at any university, for example, would give its student-athletes more time for study. But it would also leave them at a disadvantage against teams and squads that had acquired the greater experience of longer schedules and the benefits of more extensive and intensive practice and conditioning. Athletes who compete consistently under handicaps not of their own making and endure losing seasons year after year are likely to become chronically discouraged and bitter, losing their morale and their regard for their institutions. Under those circumstances, it becomes difficult or impossible for coaches to recruit the talent needed to achieve any success at all. The trouble with unilateral reform, therefore, is that it violates what the NCAA calls the principle of equity in competition[11] by denying athletes under a unilaterally reformed program the so-called "level playing field."

There are, of course, alternatives to unilateral reform, and we have considered them at some length. One is to persuade the Atlantic Coast Conference to accept the reforms this University considers necessary and to schedule non-conference games only against other schools subject to the same reforms and restraints. Given the aspirations of some ACC members for national primacy in the revenue sports, that hope may be utopian. Other options would be to organize and affiliate with a new conference composed of schools that would adopt the reforms we propose for ourselves, or to drop to a less demanding level of competition in the NCAA classifications, such as Division I-AA (which is that of the Ivy League) or Division II. One difficulty in that approach is that it would take several years to rearrange the scheduled games for which we have already contracted. Another is that it would be hard to detach the schools with which we like to be affiliated from their current schedules and conference memberships. Finally, it would distress our alumni and other fans to deprive them of their annual reckonings with the hereditary enemies in the ACC.

A final option, which has not received the public discussion and institutional consideration it deserves, is for this university and others to withdraw completely from intercollegiate athletic competition. This is the simplest and most decisive solution to the problems of intercollegiate athletics, the one most likely, if instituted, to settle those problems once and for all. It is also the solution that is most likely, wherever proposed, to shake the foundations of the Republic. Recommendations to abolish Congress, or rescind the Louisiana Purchase, would be less controversial than the proposal that any major university renounce intercollegiate athletics. Nevertheless, we regard withdrawal from intercollegiate athletics as a serious alternative to the present state of things, which is intolerable, and we think that unless major national reforms are enacted and enforced the withdrawal of colleges and universities from intercollegiate competition, singly or in groups, is a valid and realistic option.

In consideration of the foregoing, your committee has chosen as a basis for its recommendations the following strategy of reform: (1) that the University should immediately and unilaterally implement all those reforms it approves that do not place its athletes at a competitive disadvantage; (2) that for a period of five years thereafter the University should join the leadership of current reform efforts in the NCAA and vigorously press for the adoption, by the NCAA or any agency that may displace it, of the remaining reforms that this University has approved; (3) that at the expiry of five years the University should consider, in the light of conditions then prevailing, implementing those remaining reforms that this University has approved that have not been accepted by the NCAA, however they may affect the competitiveness of our athletes and their teams.

Although we have no illusions about the prospects of achieving decisive reforms in an organization so divided as the NCAA, we are encouraged by the appearance, in 1984, of a serious reform effort that has recently begun to accelerate. That effort began with the adoption by the NCAA of Proposition 48, which requires, as a minimum for awarding an athletic grant-in-aid to an incoming freshman, that he or she have graduated from a secondary school with at least a 2.0 average in a stipulated 13-course core curriculum. But no recipient of such an award may play or practice in a varsity sport during his freshman year unless he has scored 700 (out of a possible 1600) on the Scholastic Aptitude Test or 15 (out of a possible 36) on the American College Test. Although these requirements are modest, they exclude the possibility that any NCAA institution will again, to its embarrassment, be found to have admitted an illiterate on a grant-in-aid and retained him during his four years of eligibility, as has occasionally happened.[12]

Proposition 48 was initiated and promoted by a group of college presidents. In the course of the struggle over Proposition 48, the NCAA created a Presidents Commission, to be elected by the chief executive officers of all member institutions, which has the right to review activities of the Association, put matters of concern on the agenda of the Annual Convention, order the agenda, and call special meetings of the Association.[13] That Commission continues to be active. Recently it has proposed that the NCAA reduce the length of the basketball season of Division I, by a month, reduce spring football practice, and require publication of the graduation rates of student athletes. These matters will be referred to the Annual Convention in January, 1990.

To this evidence of progress must now be added the recent formation of a blue-ribbon national commission to serve for two years under the chairmanship of Rev. Theodore Hesburgh, former president of Notre Dame University, to define and study the problems of intercollegiate sports and make major recommendations to remedy them. The vice chairman and one of the organizers of this commission is President Emeritus William C. Friday of the University of North Carolina. Richard Schultz, Executive Director of the NCAA, will also be a member. The Knight Foundation of Akron, Ohio, has provided two million dollars to support the committee and its work.[14]

Finally, we observe that the NCAA in January of this year added to its constitution (Art. 2, Principles for Conduct of Intercollegiate Athletics) some progressive commitments that had not appeared there before.[15] It remains to be seen, of course, when and how they will be embodied into specific, enforceable bylaws. Among them are the following:

> 2.2 The Principle of Student-Athlete Welfare. Intercollegiate athletics programs shall be conducted in a manner designed to protect and enhance the physical and educational welfare of student-athletes.
>
> 2.8 The Principle Governing Recruiting. The recruiting process involves a balancing of the interests of prospective student-athletes, their educational institutions and the Association's member institutions. Recruiting regulations shall be designed to promote equity among member institutions in their recruiting of prospects and to shield them from undue pressures that may interfere with the scholastic or athletics interests of the prospects of their educational institutions.
>
> 2.9 The Principle Governing Eligibility. Eligibility requirements shall be designed to assure proper emphasis on educational objectives, to promote competitive equity among institutions and to prevent exploitation of student-athletes.

2.11 The Principle Governing Playing and Practice Seasons. The time required of student-athletes for participation in intercollegiate athletics shall be regulated to minimize interference with their opportunities for acquiring a quality education in a manner consistent with that afforded the general student body.

These are promising signs. But your committee believes that these and other efforts to solve the problems presented by the conflicts between intercollegiate athletics and American higher education will be strongly opposed by large and powerful groups motivated by strong currents in the culture. We seriously advise the Faculty Council and the General Faculty to give organized and concerted support to all movements likely to result in the adoption by the NCAA of the general reforms the Council may choose to recommend to the Chancellor. Unless the Council is prepared to recommend the road of immediate unilateral reform, it should persuade the Faculty to encourage other faculties across the country, and organizations like the American Association of University Professors, to support national reforms, whether the Presidents' Commission of the NCAA and the new national commission recommend them or not.[16]

To conclude: The character and scale intercollegiate sports has assumed, and the resources it has acquired, in the last twenty years make it necessary for all faculties to assure that their athletic programs are subordinated to the educational purposes and values of their institutions and that the educational integrity of their institutions is maintained. We hope the Faculty and Administration will see fit to enact the reforms recommended in this report and approve other measures as the need for them becomes apparent. It is our conviction, in any case, that a massive national movement for the reform of athletics in all American universities is now required. And the proper place of this University in that movement is in the vanguard, where its leadership will be useful.

* * *

In this report we recommend many additional improvements in the regime of intercollegiate athletics at Chapel Hill. Some of them are specific to this University and, if approved, can be enacted immediately. Others will benefit from adoption on the national level, during the next five years. All are listed and discussed in the pages that follow. It is now the task of the Faculty Council to evaluate them and, on the basis of its deliberations, to make its own recommendations to the Chancellor.

II. RECOMMENDATIONS

A. RECOMMENDATIONS FOR NATIONAL AND LOCAL REFORM

The first nine recommendations are for national reforms in intercollegiate athletics. For five years the University should support them aggressively and do its best to obtain their adoption by the NCAA, the ACC, and other conferences and governing bodies. The University should then consider adopting them unilaterally.

[Note 1: Some members believe the last sentence above should read, "The University should then adopt them unilaterally."]

[Note 2: Some other members believe that these nine recommendations should be implemented immediately, without waiting for national action.]

*** 1. The season of play in each sport should not exceed the number of weeks in a standard academic semester. It may, if desirable, be divided between the two academic semesters in an academic year.

*** 2. In any sport, the number of competitive events additional to those required by the Conference shall be considerably reduced.

*** 3. During the playing season, the time a student-athlete allots to practice, suiting up, taping up, required team conditioning, chalk talks, travel, orientation, games, films and post-game analysis, and all other obligatory team activities should not exceed 360 hours for the season. These hours need not be distributed evenly among the fifteen weeks, but in no case should they exceed thirty per week. Each coach, or some member of his or her staff, must keep a seasonal log of the time required for athletes participating in the sport he or she coaches and at the end of each week in the semester should submit a cumulative copy of the log to the Director of Athletics.[17]

*** 4. The fifteen off-season weeks in the academic year are reserved chiefly for academic growth and progress. Physical conditioning, light workouts, and unsupervised play should be allowed, but should not exceed fourteen hours per week. Spring practice in football should be entirely eliminated.

*** 5. The freshman year of every student-athlete should be used primarily for coming to terms with the demands a university makes upon its students, mastering fundamental concepts, improving oral and written expression, and establishing habits of study and self-discipline that will enable him or her to profit from the educational opportunities open here to undergraduates. Accordingly, freshmen should be ineligible for varsity play. But since no young athlete can neglect the development of his or her stamina and skills for a year, we recommend that freshman student-athletes be allowed two hours per day of physical conditioning and practice in the sport, with or apart from the varsity, on days of classes, plus four hours of optional conditioning on weekends. They should also be permitted to sit on or near the bench at varsity games. But no freshman student-athlete should suit up for a varsity game or travel with the varsity to away games.

*** 6. The maximum number of years of varsity eligibility should be three. All "red-shirting" should be abolished except in the case of a student-athlete who stands to lose a season of play because of physical injury certified by a physician, or temporary withdrawal from the university by reason of verified family problems, or some other difficulty recognized as valid by the NCAA and by the Faculty Committee on Athletics.

*** 7. The contract of every coach should include, as a primary obligation, responsibility for the regular academic progress of the student-athletes under his or her supervision. Every NCAA member academic institution should be required to report to the NCAA its graduation rates for each annual cohort of athletes, along with rates of dismissal, probation, advancement, and academic honors, of whatever kind. These reports should be open to the public and, if practical, published from time to time. They should be shown to all potential recruits.

[Note: This recommendation can be adopted for immediate implementation at this University.].

*** 8. In the national discussion of Proposal 42 it has been alleged that universities have an obligation to admit outstanding athletes who are academically underqualified. The reason given is that there is no other way in which those athletes can obtain the exposure they need in order to be drafted into the NFL and the ABA or selected for competition in the Olympic Games. But no university is under any such obligation. The NCAA should make this clear.

[Note: Some members believe the NCAA should, in cooperation with professional sport associations, devise arrangements whereby athletes who lack the preparation, or ability, or inclination for university study can have access to the pursuit of professional status in their sports without enrolling at a college or university.]

*** 9. Because many problems of intercollegiate athletic programs arise from the admission to universities of athletes who are unprepared, or unable, or disinclined to succeed in university studies, we recommend that an NCAA member institution not admit any athlete whose qualifications, measured against the admissions criteria of the institution concerned, fall below those of the least qualified non-athlete to be admitted the same year in his or her admissions category.

[Note 1. An admissions category is any classification within which students compete with one another for admission. Examples: out-of-state students; in-state students; children of out-of-state alumni; students whose presence at the University contributes to the fulfillment of affirmative action goals.]

[Note 2. Some members recommend that athletes not be admitted unless they meet admissions standards that are generally applicable within the institution to which they apply.]

[Note 3. Some other members believe that athletic ability should continue to be, at Chapel Hill, one of several special skills that help determine competitiveness in the admissions process.]

B. RECOMMENDATIONS FOR LOCAL REFORM ONLY

The following reforms apply only to this University. If approved, they may be implemented immediately at Chapel Hill.

*** 10. Out-of-state student-athletes should be recruited and enrolled so as to raise the average SAT score of out-of-state student-athletes, at the end of five years, to equal the average SAT scores of other categories of out-of-state admittees, such as the children of out-of-state alumni; and in the out-of-state quota the University will reduce to 75 per year the admissions of athletes who are non-competitive in that admission category.

*** 11. In accordance with a policy we understand to be already in force, the number of grants-in-aid in each sport should be increased in proportion as the average graduation rate of student-athletes in that sport exceeds that of the student body, and decreased as the average graduation rate of student-athletes in that sport falls below that of the student body.

[Note. Some members believe that grants in aid should be limited to men's football and basketball and women's soccer and basketball.]

*** 12. Every coach and his or her staff should ensure that all student-athletics understand the primacy of their educational objectives and are encouraged to have clear professional goals. They should follow course-tracks that will qualify them for the pursuit of those goals.

*** 13. The Faculty Comittee on Athletics should arrange for exit interviews to include, among other things, the evaluation of coaches, whenever a student-athlete leaves an academic program, whether for graduation or for other reasons.

*** 14. After a probationary period, a head coach shall have a long-range contract and appropriate benefits and shall be dismissed only for just cause. Dismissal shall be by the Chancellor, acting after consultation with his Advisory Committee. Coaches will be evaluated on all capacities having to do with their contributions to the athletic, academic, and personal growth of the student-athletes who come under their leadership. A coach should be evaluated on several criteria, and his win-loss record shall be only one of the considerations by which his status in the University is determined.

*** 15. The University should make a special effort to involve student-athletes more fully in the life of the student body. University housing should be planned so that student-athletes live among non-athletes. Training tables should be opened, for a fee, to non-varsity athletes.

*** 16. The faculty should extend to student-athletes the same respect and consideration, no more and no less, that is accorded as a matter of right to students in general. The student-athletes we have interviewed unanimously wish to be considered on the same basis as all other students and not to be identified with athlete-stereotypes.

*** 17. The University should propose to the Southeastern Association of Colleges and Schools that a review of the academic support and advising programs of departments of athletics be included in its recurrent institutional self-studies of member institutions. The review should cover the grades and graduation rates of student-athletes and their progress toward degrees.

*** 18. The institutional representative who casts the University's vote in the NCAA and the ACC should report annually to the Chancellor and to the Faculty Council on how the University's vote has been cast on each issue brought before these bodies and why.

*** 19. The University should encourage the ACC to recognize and honor annually the member athletic department that appears to have achieved the best balance between the athletic and academic responsibilities of student-athletes. It should continue to publicize the outstanding academic achievements of the student-athletes of the member institutions.

*** 20. The University should provide to all students who need it the same kind and level of academic support that is provided to student-athletes.

*** 21. As far as possible, every student should have an opportunity to participate on a non-intercollegiate basis in the sport of his or her choice. The University should carefully preserve, maintain, and expand tennis and basketball courts and other athletic facilities near the dormitories for the use of students. The intramural sports program should be revitalized; These needs should be given a high priority in the allocation of space on the campus.

*** 22. The University should enlarge and improve its athletic facilities for the University community. Greater access to the Koury natatorium should be permitted to members of the University community.

*** 23. Both the Chancellor and the General Faculty should be represented on the Executive Committee of the Educational Foundation. The Faculty's representative on that Board should be a member of the Faculty Athletics Committee elected by his colleagues.

*** 24. No individual should be authorized to serve simultaneously on the Board of Trustees and the Executive Committee of the Educational Foundation.

[Note. Some members prefer that members of the Board of Governors also be excluded from the Education Committee of the Educational Foundation.]

*** 25. The Educational Foundation should present its annual budget to the Chancellor for his review and endorsement. The Chancellor should consider with his Advisory Committee any major new fund commitments contemplated by the Educational Foundation.

[Note 1. Some members prefer that the faculty express its desire that both the Foundation's accumulated capital surplus, and any annual surplus of income over expenditure, shall be devoted to three categories in which expanded facilities and staffing are needed: (a) athletic activities for the general student body, faculty, and staff; (b) academic support for students from the general student body; (c) expanded scholarship funds to be awarded on the basis of need and merit.]

[Note 2. Some other members believe that such funds should be channeled directly into faculty and graduate research.]

*** 26. The Educational Foundation should establish relations and operations with the Development Office in the same mode as now applies to all other major fund-raising foundations in the University.

*** 27. Financial statements and budgets of the Educational Foundation should be open to the public.

*** 28. We recommend that the practice of re-selling seats in the Student Activities Center in perpetuity cease and that all possible steps be taken to reassign to students such seats as lapse.

*** 29. We recommend that commercial entertainment events at the Smith Center be reduced to twelve to fifteen per year.

*** 30. Whenever major sports events take place on the campus, whether at the Student Activities Center or Kenan Stadium, an adequate number of parking places should be set aside for use of faculty who have to work during the events.

*** 31. In place of the present Athletic Council there should be an administrative board for the Department of Athletics with representation from the administration, the faculty, and students. It should meet frequently and determine policy.

*** 32. The charge of the Faculty Committee on Athletics should include oversight of matters covered in Recommendations 1-6, 10-13, and 15-16, or such of them as may be adopted.

Respectfully submitted,

The Ad Hoc Committee on Athletics and the University

[composed of former Chairmen of the faculty or of the Chancellor's Advisory Committee]

Doris W. Betts, Chair
George V. Taylor
E. Maynard Adams
Beverly W. Long
C. Townsend Ludington, Jr.
Daniel A. Okun
George A. Kennedy
Daniel H. Pollitt
Tom K. Scott
Henry A. Landsberger

NOTES

[1]In January, 1988, 105 of the 791 universities, colleges, and schools that held membership in the NCAA were in Division I-A, which is the domain, par excellence, of big-time university sports. Nine conferences were members of that division. The other divisions and their memberships were I-AA (87 institutions and 8 conferences), I-AAA (100 institutions and 20 conferences), II (179 institutions and 15 conferences), and III (320 institutions and 27 conferences). For these totals we are indebted to Mr. Ted C. Tow, Associate Executive Director of the NCAA.

[2]For example, a public opinion poll of March, 1989, shows strong disapproval, even among fans and blacks, of overemphasis on sports in higher education, the payment of money (as distinct from tuition, fees, room, board, or required course-related books) to athletes, and low standards of admission and eligibility for athletes. Respondents also believe it is common for professors to give student-athletes higher grades than they deserve and for the universities and boosters to make under-the-table payments to athletes. As reported in The Raleigh News and Observer, April 8, 1989, p. 5B In a recent Harris poll, about 75 per cent of the persons polled believe that intercollegiate athletics is "out of control." Cited by President Emeritus William C. Friday of The University of North Carolina in ibid, August 4, 1989, pp. 1C and 2C.

[3]1989-90 NCAA Manual: Constitution, Operating Bylaws, Administrative Bylaws, Administrative Organization (Mission, Kansas, National Collegiate Athletic Association, March, 1989), Constitution, Art. 2.6, "The Principle of Amateurism": "Student-athletes shall be amateurs in an intercollegiate sport and their participation should be motivated primarily by education and by the physical, mental and social benefits to be derived. Student participation in intercollegiate athletics is an avocation, and student-athletes should be protected from exploitation by professional and commercial enterprises." Ibid, Art. 2.10, "The Principle Governing Financial Aid": "A student-athlete may receive athletically related financial aid administered by the institution without violating the principle of amateurism, provided the amount does not exceed the cost of education authorized by the Association." And Operating Bylaws, Art. 12.

[4]In a recent survey of current and former National Football League players, nearly a third of the respondents reported having accepted, while undergraduates at various colleges and universities, payments that were in violation of NCAA regulations. Fifty-three per cent of the respondents ". . . said they saw nothing wrong with breaking NCAA rules to get extra cash." Most of the payments were made covertly by alumni and other fans – slid under the doors of dormitory rooms, or passed from hand to hand in a post-game handshake. Others came from the sale of complimentary game tickets, for as much as $1,000 each. Out of 3,500 players contacted in this poll, 1,182 responded. The percentages of those reporting having accepted money illegally ranged from 19 per cent in the Atlantic Coast Conference, to 67 per cent in the Southeast Conference, with the Big Ten and Pacific Ten falling in between, at 36 per cent and 39 per cent respectively. The Raleigh News and Observer, November 17, 1989, pp. 1B and 2B; ibid., November 18, 1989, pp. 1B and 6B.

[5]1989-90 NCAA Manual, Constitution, Art. 2.6, quoted supra, note 3. Also Art. 2.4, "The Principle of Sound Academic Standards": "The admission, academic standing and acaqdemic progress of student-athletes shall be consistent with the policies and standards adopted by the institution for the student body in general." But regardless of such statements of principle, it is in the academic world at large the academic standing of an athlete that alone determines whether he is a member of the student body.

[6]Ibid., Constitution, Art. 2.6 (encore), quoted in note 3, and Art. 1.2 ("Purposes"), (a) [The purposes of this Association are] " (a) To initiate, stimulate and improve intercollegiate athletics programs for student-athletes and to promote and develop educational leadership, physical fitness, athletics excellence and athletics participation as a recreational pursuit."

[7]Ibid, Constitution, Art. 2.4. Also Art. 1.3.1: "Basic Purpose."

[8]Quotations from the remarks of Division I-A football coaches written in a poll conducted by the sports journalists of the Rocky Mountain News (Sunday, August 21, 1988), pp. 1-S, 12-S, and 13-S. Some of the coaches, in their remarks, reflected a strong sense of responsibility toward their athletes and respect for the academic standing of their institutions. One of them wrote, "The win-at-all-costs attitude forces coaches to take short cuts to succeed." There is, among the respondents, a belief that the NCAA, by strengthening its investigation and enforcement capacities and imposing the so-called "death penalty" on Southern Methodist University, has probably reduced the amount of competitive chating in the coaching profession. Those who observe NCAA regulations want to see the offending programs punished severely. We are indebted to Bob Willis, of the Rocky Mountain News sports staff, for having sent us a copy of the issue in which the poll is reported.

[9]John Bartlett, Familiar Quotations: A Collection of Passages, Phrases and Proverbs Traced to their Sources in Ancient and Modern Literature, Fifteenth and 125th Anniversary Edition, Revised and Enlarged (Boston, Little Brown and Company, 1980), pp. 867, 925. The attributions, of course, are to Vince Lombardi and Leo Durocher.

[10]George E. Peterson, The New England College in the Age of the University (Amherst, Amherst College Press, 1964), p. 37. For rebuttals to the idea that big-time college sports generate giving to the academic programs of institutions rather than merely to their athletic programs see (1) Allen L. Sack and Charles Watkins, "Winning and Giving," in Sport and Higher Education, eds. Donal Chu, Jeffrey O. Segrave, and Beverly J. Becker (Champaign, Illinois, Human Kinetics Publishers, Inc., 1985), pp. 299-306, and (2) "Oft Repeated Argument: Do Winning Teams Spur Contributions? Scholars and Fund Raisers are Skeptical," Chronicle of Higher Education, January 13, 1988, p. 1.

[11]1989-90 NCAA Manual, Constitution, art. 2.7.

[12]In January of this year, the NCAA amended Proposition 48 by passing Proposal 42 (to become effective in 1990), which makes the award of grants-in-aid contingent not only on the 2.0 average in the core curriculum but also on the minimal scores stipulated earlier for the SAT or ACT. Proposal 42, however, has been vigorously contested by Coach John Thompson and others on the ground that the vocabulary sections of the two tests contain words and expressions with which blacks and members of other minorities are unfamiliar and thereby discriminate racially against minorities. Its repeal in the NCAA Annual Convention of January, 1990, is a strong possibility.

[13]1989-90 NCAA Manual, Constitution, art. 4.5.

[14]Knight Foundation, News Release, Akron, Ohio, September 27, 1989.

[15]These declarations are obviously commitments to policy. The specific legislation by which the commitments will be made effective have yet to be proposed. Perhaps some of them will be brought before the Annual Convention in January, 1990.

[16]After this report was written, but before it was presented to the Faculty Council, some members of the North Carolina Conference of the American Association of University Professors adopted a resolution recommending measures intended to strengthen faculty oversight and control of intercollegiate athletics at all institutions of higher learning in North Carolina. Copies of the resolution have been sent to the President of the University of North Carolina and the Chairman of the its Board of Governors. The recommendations are: (1) that chairs of faculties or of faculty senates serve ex officio on boards of trustees, along with student body presidents; (2) that members of faculty committees exercising oversightover intercollegiate sports programs be elected by their faculties, and that tenured faculty members be elected as chairs of such committees; (3) that all academic advising programs be located, or relocated, in the division of academic affairs, to be supervised by a tenured faculty member; (4) that the fund-raising efforts of any booster club be made subject to the supervision of the chief fund-raising officer of the university concerned, and that an annual report of the club's finances be provided to the faculty of the institution; (5) that abuses of the grade "incomplete" be curbed by specific procedures devised for that purpose. We believe that the members of the Chapel Hill faculty, and all other North Carolina faculties, should individually, corporately, and aggressively support measures of this kind. Reported in the Raleigh News and Observer , October 29, 1989, p. 30A.

[17]The basis for this recommendation is an estimate that allocates the 168 hours of a student-athlete's week according to three needs in order of priority: 1st, the student-athlete's personal needs for sleep, meals, getting about the campus, and seven hours of leisure per week ; 2nd, the student-athlete's academic needs for lectures, recitations, labs, class preparation, and, during the term, preparing out-of-class papers and studying for major examinations; 3rd, time devoted to intercollegiate athletics. Here is the percentage distribution of time for the term:

Personal needs	50%
Academic needs	29%
Intercollegiate athletics	15%
Unallocated	6%

The principle involved here is that the time needed for a student-athlete's education must be accorded and protected, since that is the purpose of the grant-in-aid he or she is given. Obviously, the observance of that principle will compel sharp reductions of practice in all its forms, scheduled competitive events, and travel time. We are aware of the scale of those reductions and have no hesitation in recommending a personal regimen for student-athletes that necessitates those adjustments. We conceive education, moreover, as consisting not of the minimal satisfaction of a minimal number of courses that require the minimal possible exertion, but rather as a line of study and inquiry involving a number of courses chosen for the student's intellectual and professional interests. The following is a quotation from a letter published in The New York Times in March, 1989: "I believe intercollegiate athletics can only be justified as part of higher education and that the young men and women who participate in athletics must be bona fide students, receiving, in exchange for their participation in athletics, an education of high quality which stretches them intellectually just as the athletic programs stretch them physically." The writer of that letter is Chancellor Paul Hardin.

(7) Ag. + Life Sciences

CALS Faculty Who Hve Contributed to
Enhanced Freshman Performance

Animal Science (Box 7621)
~~Dr. John C. Cornwell~~
Dr. Kenneth L. Esbenshade 1

Biochemistry (Box 7622)
~~Dr. Frank B. Armstrong~~

Biological & Agricultural Engineering (Box 7625)
~~Professor George B. Blum~~

Crop Science (Box 7620)
Dr. William T. Fike
~~Dr. Johnny C. Wynne~~

Economics & Business (Box 8109)
~~Dr. Ronald A. Schrimper~~

Food Science (Box 7624)
~~Dr. Victor A. Jones~~

Horticultural Science (Box 7609)
Professor Bryce H. Lane 2
~~Dr. Roy A. Larson~~

Microbiology (Box 7615)
~~Dr. Geraldine H. Luginbuhl~~

Plant Pathology (Box 7616)
~~Dr. Larry E. Grand~~

Soil Science (Box 7619)
~~Dr. H. Joseph Kleiss~~

Zoology (Box 7617)
Dr. William C. Grant 3
~~Dr. Grover C. Miller~~

Biological Sciences (Box 7611)
~~Dr. Charles F. Lytle~~
Robert Beckman 4

Administration (Box 7642)
~~Dr. Jon F. Ort~~ 5

Moreine Frazier

SCHOOL OF DESIGN

FACULTY WHO HAVE GREATLY ENHANCED FRESHMAN PERFORMANCE

Marcouette Porter

John P. Reuer

Wayne Taylor

2

7

COLLEGE OF ENGINEERING

FACULTY WHO HAVE GREATLY ENHANCED FRESHMAN PERFORMANCE

~~Dr. Hubert Winston~~

Dr. Jo Perry

Porter

Lemley

COLLEGE OF FOREST RESOURCES

FACULTY WHO HAVE GREATLY ENHANCED FRESHMAN PERFORMANCE

Phil Rea
Art Cooper
Myron Kelly
Tom Joyce

Forestry

December 8, 1988

LIST OF FACULTY WHO HAVE ENHANCED FRESHMAN PERFORMANCE
FROM THE COLLEGE OF HUMANITIES & SOCIAL SCIENCES

Eric Woodrum	-	Sociology & Anthropology
Patricia Caple	-	Speech Communication
Ed Funkhouser	-	Speech Communication
Erika Fairchild	-	Political Science & Public Admin.
David Hyman	-	Economics & Business
Clay Stalnaker	-	Philosophy & Religion and Univ. Studies
Virginia Downs	-	English
Odell Uzzell	-	Sociology and Anthropology
Jennifer Ginn	-	English
Jeff Richards	-	English
Mike Grimwood	-	English
William Kimler	-	History
William Holler	-	Foreign Languages & Literatures

COLLEGE OF PHYSICAL AND MATHEMATICAL SCIENCES

FACULTY WHO HAVE GREATLY ENHANCED FRESHMAN PERFORMANCE

Kathy Lee	-	Chemistry
Buzz Hentz	-	Chemistry
Karen L. Johnston	-	Physics
Prabha Ramakrishnan	-	Physics
Joyce Mahoney (staff)		Physics
Ms. Marilyn McCollum		Mathematics
Prof. Robert Ramsay	-	Mathematics
Bob Savage	)	Miscellaneous from
Ernie Burniston	)	Bob Bereman
Wandra Hill	)	
Murray Downs	)	

Walter Tucker (9)

North Carolina State University

Office of the Dean
College of Textiles

Box 8301
Raleigh, NC 27695-8301
(919) 737-3231
FAX (919) 737-3926

December 9, 1988

MEMORANDUM

TO: Nash N. Winstead, Provost

FROM: Robert A. Barnhardt

We have three faculty members in the College of Textiles who, in the opinion of the department heads and myself, have greatly influenced freshman teaching. These faculty members are:

Dr. M. L. Robinson, Department of Textile and Apparel Management
Dr. J. W. Rucker, Department of Textile Chemistry, Engineering, and Science
Mr. J. P. Rust, Department of Textile Chemistry, Engineering, and Science

If you need further information on these faculty members, please let me know.

RAB/nbm

Robert A Barnhardt

North Carolina State University
College of Education and Psychology

Office of the Dean
208 Poe Hall
Box 7801
Raleigh, NC 27695-7801
(919) 737-2231

December 13, 1988

MEMO TO: Provost Nash Winstead

FROM: Dean Carl Dolce

SUBJECT: Faculty Members Who Have Influenced Freshmen

The following College of Education and Psychology faculty members have influenced many freshmen:

Dr. James Kalat	Psychology
Dr. Don Mershon	Psychology
Dr. Bob Pond	Psychology
Dr. William Cunningham	Psychology
Dr. J. R. Clary	Occupational Education
Dr. Barbara Parramore	Curriculum and Instruction
Dr. Charlotte Jones	Director of Teacher Education
Dr. John Crow	Graphic Communications
Ms. Sue Markley	Graphic Communications
Mr. Ted Branoff	Graphic Communications

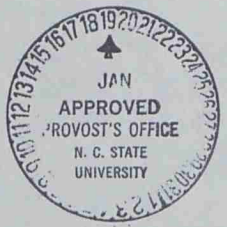
CD/fr

(2) Ag + Life Sciences

North Carolina State University

Office of the Dean
Box 7601
Raleigh, NC 27695-7601
919-737-2668

College of Agriculture and Life Sciences
Academic Affairs, Extension & Research



January 18, 1989

MEMORANDUM

TO: Provost Nash Winstead

FROM: D. F. Bateman, Dean

SUBJECT: Promotion and Tenure Recommendations

The Committee you appointed consisting of Barnhardt, Toole, Monteith and Bateman to review the form suggested by Vice Chancellor Hart for use in connection with promotion and tenure recommendations has met and offers the attached draft. Also, enclosed is the original draft prepared by Vice Chancellor Hart.

You will note that the Committee has altered wording in several places and added a category or two to the original. The revised draft covers all salient areas from our perspective.

Let me know if further input is needed.

DFB/dv
Enc.
cc: Dean R. A. Barnhardt
Dean W. B. Toole
Dean L. K. Monteith

Downs
Clark
Tolson
Hart.

Please note attached. I will be sending out to School Deans soon. Do you see any problems w this? Let me know by Friday the 27th Jan
Believe Barnhardt Monteith Toole - recommendations
N. W

Proposed

DRAFT

NORTH CAROLINA STATE UNIVERSITY

PROMOTION_____ REAPPOINTMENT_____ PERMANENT TENURE_____
Department_____ Name_____
College/School_____ SS#_____
Birthdate_____ Birthplace_____
First NCSU Appointment: Date_____ Rank_____
Time in Present Rank: NCSU_____ Elsewhere_____
Funding Sources & Percentage: Academic Affairs: 1310_____,
1100_____, Organ. Res._____, Ag. Inst._____, Univ. Ext._____,
Text. Ext._____, Ind. Ext._____, Ag. Res._____, Ag. Ext._____,
Trust_____, Other (name)_____
Rank: Present_____ Proposed_____
Proposed Effective Date_____
Vote of Senior Faculty: For_____ Against_____ Abstain_____

PLEASE SUBMIT SUPPORTING DOCUMENTATION FOR THE FOLLOWING TOPICS: (If any category is not applicable for the recommendation, please indicate the number and use the symbols N/A.)

I. Brief Resume: Include Education (Degrees, Dates, Institutions), Professional Experience (Titles, Organizations, Locations, Dates of Employment), University service, Scholarly and Professional Honors, Professional Society memberships and consulting activities.

II. Instructional Contributions with Evaluation:
   (a) Teaching Effectiveness - Summarization data from student evaluations for past 3 years.
   (b) Instructional Development - Include innovations in courses and curricula.
   (c) Advisory Service - Include undergraduate academic advising, graduate committees, student organizations.
   (d) Cross Disciplinary Activities - Include graduate program participation, special courses and othter pertinent evidence.
   (e) Scholarly contributions - text books, laboratory manuals, etc.

III. Research Contributions with Evaluation:
   (a) Scholarly Achievements - Include books, refereed publications, non-refereed publications, popular articles, and other pertinent evidence. (Please list separately.)
   (b) Graduate Research - Include sponsored grants and contracts, masters and doctoral theses directed and unsponsored and independent research.
   (c) Technology Transfer - Include invention disclosures, patents filed and patents awarded, new cultivars developed and released, major software packages and other pertinent evidence.
   (d) Cross Disciplinary Activities - Include participation in Centers, Institutes and other organized research efforts between departments within and across Colleges.

IV. Extension Contributions with Evaluation:

(a) Publications - Include brochures, reports, pamphlets, referred publications, and other specially prepared documents. (Please list these separately.)

(b) Public Service - Include seminars and meetings arranged, special intervention programs, and other pertinent evidence.

(c) Rural Development - Include contributions to rural and small-town revitalization and economic development.

(d) Cross disciplinary activities.

V. Other Contributions and Evaluation:

Recommended by

Approved by

Department/Unit Head	Date	Dean/Vice Chancellor	Date
Provost/~~for NCSU Administration~~	Date	Chancellor	Date

DRAFT Original PROPOSED BY HART

NORTH CAROLINA STATE UNIVERSITY

PROMOTION_____ REAPPOINTMENT_____ PERMANENT TENURE_____

Department_____ Name_____

College/School_____ Social Security No._____

Birthdate_____ Birthplace_____

First NCSU Appointment: Date_____ Rank_____

Time in Present Rank: NCSU_____ Elsewhere_____

Funding Sources & Percentage: Academic Affairs: 1310____, 1100____, Organ. Res_____

Ag. Inst.____, Text. Ext.____, Ind. Ext.____, Univ. Ext.____, Ag. Res.___, Ag. Ext._____

Trust_____ Other (name)_____

Rank: Present_____ Proposed_____

Proposed Effective Date_____

Vote of Senior Faculty: For_____ Against_____ Abstain _____

PLEASE SUBMIT SUPPORTING DOCUMENTATION FOR THE FOLLOWING TOPICS:

(Any information not applicable for the recommendation, please indicate the number assigned to the topic and use the symnbols N/A.)

I. Brief Resume: Include Education (Degrees, Dates, Institutions), Professional Experience (Titles, Organizations, Locations, Dates of Employment), Scholarly and Professional Honors and Memberships.

II. Instructional Contributions with Evaluation:
- (a) Teaching Effectiveness - Include data from student evaluations.
- (b) Instructional Development - Include innovations in courses and curricula.
- (c) Advisory Service - Include undergraduate academic advising, graduate committees, student organizations.
- (d) Cross Disciplinary Activities - Include graduate program participation, special courses and other pertinent evidence.

III. Research Contributions with Evaluation:
- (a) Scholarly Achievements - Include books, publications and other pertinent evidence.
- (b) Graduate Research - Include sponsored grants and contracts, direction of masters and doctoral thesis and unsponsored and independent research.
- (c) Technology Transfer - Include invention disclosures, patents filed and patents awarded, new cultivars developed and released, major software packages and other pertinent evidence.
- (d) Cross Disciplinary Activities - Include participation in Centers, Institutes and other organized research efforts.

IV. Extension Contributions with Evaluation:
- (a) Publications - Include brochures, reports, pamphlets and other specially prepared documents.
- (b) Public Service - Include seminars and meetings arranged, special intervention programs, and other pertinent evidence.
- (c) Rural Development - Include contributions to rural and small-town revitalization and economic development.
- (d) Cross disciplinary activities.

V. Other Contributions and Evaluation:

Recommended by

_____ _____
Department/Unit Head Date

Approved by

_____ _____
Dean/Vice Chancellor Date

_____ _____
Provost/for NCSU Administration Date

North Carolina State University

Office of the Dean
Box 7601
Raleigh, NC 27695-7601
919-737-2668

College of Agriculture and Life Sciences
Academic Affairs, Extension & Research

March 9, 1989

TO: Provost Nash Winstead

FROM: D. F. Bateman, Dean

SUBJECT: Dr. Glenn Chappell/Department of Economics and Business

Dr. Chappell, who now serves as the Foundations Officer for CALS, will be replaced in the next few months. We wish to make use of Dr. Chappell's talents and provide a period of transition for him while he seeks permanent employment. As you may recall, he came to us from a tenured position from East Carolina University.

We propose to appoint Dr. Chappell as a Visiting Associate Professor in the Department of Economics and Business effective June 1, 1989 through December 31, 1990. His assigned duties will be to teach needed courses in the marketing area and to carry out a marketing effort for the Extension Service. We propose to keep him at his current salary and the salary will be shared equally by the three functions of our College. Arrangements have been made by all parties involved to accommodate this situation.

This is to request a waiver of affirmative action for this appointment and your concurrence for us to move forward with this matter.

DFB/dv
cc: Dr. L. Clark

(2) Ag & Life Science 1989-90

NORTH CAROLINA STATE UNIVERSITY Raleigh, N. C.

Office of Provost and Vice-Chancellor
Holladay Hall — Box 7101

TO: Dr. James L. Oblinger

October 23, 1989
Date

ACTION REQUESTED ON ATTACHED:

_____Note and Return
_____For your information (need not return)
_____Please handle
_____Please answer; furnish me copy
_____Please circulate
_____Please draft reply for my signature
_____Please give me your comments
_____Requires your approval
_____Please return attachments

Re: CALS' Publications

Dr. Clark has reviewed both publications. The Scholarships and Financial Aid Brochure is fine as is. However, the Agriculture and Life Sciences Brochure displays only 5 photos with African-Americans protrayed out of a total of 50 some photos. He asks that you include more photos protraying African-Americans and return for his review.

Please let me know if I can assist you or if you have further questions.

FROM: Carolyn Ingram
Administrative Assistant

North Carolina State University

Academic Affairs, Extension & Research
College of Agriculture and Life Sciences

Academic Affairs
Office of the Director
Box 7642, Raleigh 27695-7642
(919) 737-2614

October 9, 1989

MEMORANDUM

TO: Ms. Carolyn Ingram
University Affirmative Action Officer

FROM: James L. Oblinger

SUBJECT: CALS' Publications

Enclosed are proofs of two CALS' publications we propose to have printed by University Graphics. Please let us know if these publications are in compliance with "Instructions for Catalogues, 1989-90." The statements on Page 3 of Mr. Antonelli's July 13 memo are included in the publications as follows:

Scholarships and Financial Aid Brochure - Pages 2 & 6
Agriculture and Life Sciences Brochure - Pages 63 & 64

In order to expedite the process, let us know when the publications are approved and we will pick them up. Thank you, in advance, for your assistance and please don't hesitate to contact me if you have any questions.

JLO/fbk

Enclosures

North Carolina State University

College of Agriculture and Life Sciences

Department of Biological
and Agricultural Engineering
Box 7625, Raleigh 27695-7625

November 23, 1988

Memorandum

To: Larry Clark

From: Frank Abrams

As I mentioned to you earlier, I like to give a brief written report to the Faculty Senate periodically to keep them abreast of Athletics Council activities. I intend to give the next one at the senate session on December 6, 1988.

Would you kindly review the accompanying draft, and would you particularly jot down some comments on the two items which I have left blank; namely "Athletic Department Support of African Research Mission", and "Athletic Department Support of Reading Program"? I had to leave the room when these were mentioned by you, and my notes are incomplete. I think it is important that the faculty be informed about them.

If you could respond by Friday, December 2, I would very much appreciate it.

Report to the Senate: Athletics Council.....Abrams
December 6, 1988

Report of meeting of November 19, 1988:

Contracts for Coaches. Only the men's basketball and football coaches currently have contracts. There is an effort underway to provide contracts for the coaches in all varsity sports. An important element in these considerations is to clearly provide performance expectations to coaches. These expectations include adherence the NCAA and NCSU policies, and particularly, adherence to procedures and policies which stress the importance of academics. It is the desire that coaches should be evaluated more with respect to these factors than by yearly win/loss records.

Recruiting. It was noted that the main impediment to the recruitment of academically talented student-athletes (particularly in men's basketball) is the awareness of the relatively low student-body-wide graduation rate at NCSU. Families of potential recruits (if not the recruits themselves) are very concerned about sending their child to a university from which only about 20% of the students graduate in four years. There is the general perception that NCSU ranks very low academically when compared with the universities with which we compete in recruiting, while among the same group of universities it ranks very high in regards to the quality of the men's basketball program.

Athletic Department Support of African Research Mission.

Athletic Department Support of Reading Program.

Arena. The legislature did not set a total cost level of $20M (my earlier report was in error), but rather indicated its intent to $-for-$ cost share with the university on the project. It is expected that there will be $25M raised by the university for the project. The fundraising activity will be conducted in the context of a broad university fundraising campaign.

Faculty/Staff Ticket Prices. There appears to be no budgetary reason at the present to consider changing general ticket prices or faculty/staff discounts in the near future. Should changes become necessary there will be ample advance information on it with ample opportunity for discussion in the university community.

Academic Difficulty Reports. Based on an analysis of the Mid-Semester Academic Difficulty Reports (MSAD) for this semester, the most frequently given reason given by faculty for a report was "poor test grades" for athletes in all sports as well as for non-athletes. Student-athletes in revenue sports appear more likely to have 4 or more absences from a class (for which they get a MSAD) than those in non-revenue sports, while those in non-revenue sports appear less likely to have 4 or more absences than the general student body. These observations come from an analysis of 10,986 MSAD reports, 159 of which came to revenue-sport student athletes, and 322 of which came to non-revenue-sport student athletes.

North Carolina State University

School of Agriculture and Life Sciences

Department of Crop Science
Box 7620
Raleigh, NC 27695-7620
919-737-2647

November 23, 1988

MEMORANDUM

TO: Dr. Lawrence M. Clark

FROM: R. C. Long
R. C. Long, Chairman
Communications Committee, Faculty Senate

As I indicated to you several days ago, we would be pleased to have you join our committee as liaison with administration.

The principal item of business before us is the timing of faculty activity reports and whether a common reporting date is a feasible, and desirable, objective.

The next meeting will be held at 8:15 AM, Friday, December 9, 1988, in Room 2402, Williams Hall. We will adjourn no later than 9:15 AM. out of town

RCL:mh

cc: Faculty Senate

AGRICULTURAL
EXTENSION
SERVICE

North Carolina State University
College of Agriculture and Life Sciences

Agricultural Extension Service
Office of the Director
Box 7602
Raleigh, N. C. 27695-7602

April 27, 1989

MEMORANDUM

TO: Dr. Larry Clark

FROM: Chester D. Black

I know you have a tough job in your capacity as Associate Provost and Affirmative Action Officer. Just a note to let you know we appreciate how you handle these responsibilities and to share an audit done by United States Department of Agriculture on our 4-H Program. While I recognize you are responsible for campus matters, I wanted you to see that we are working diligently to provide all youth opportunities. The 4-H delegation represents our state and institution.

CDB/lw

United States Department of Agriculture
Extension Service
4-H and Youth Development
Washington, DC 20250-0900

April 24, 1989

Dr. Dalton R. Proctor
Assistant Director, 4-H
N.C. State University
Box 7606
Raleigh, NC 27695-7606

Dear Dalton:

Registration for National 4-H Conference was reviewed for compliance with Dr. Johnsrud's letter of August 13, 1988, regarding minority representation. We congratulate you in your selection of minority delegates.

Your delegation to the 1989 National 4-H Conference was:

60.0% White
30.0% Black
10.0% American Indian

We encourage you to continue to plan programs that will serve the minorities in your State and thus recruit them into the 4-H program.

Sincerely,

Kemp L Swiney

KEMP L. SWINEY
National 4-H Program Leader
National 4-H Conference Director

cc: Myron D. Johnsrud
Curt Deville
North Carolina Director of Extension

(2) Mary S.
(1) C Waldrop
W

North Carolina State University

Office of the Dean
Box 7601
Raleigh, NC 27695-7601
919-737-2668

College of Agriculture and Life Sciences
Academic Affairs, Extension & Research

January 28, 1988

MEMORANDUM

TO: Dr. Chester Black

FROM: D. F. Bateman, Dean

SUBJECT: Administrative Position/Agricultural Extension Service

I am sorry to be so tardy in getting back to you regarding future filling of the positions now held by Dr. Phillips and Dr. Brooks. It is my understanding that you would like to fill the Brooks' position upon his retirement for the eventual replacement of Dr. Phillips who will retire later. Then you will use the Phillips' position to hire the Brooks' replacement. I discussed this matter briefly with Provost Winstead some time ago and he did not see any problem with following this procedure. Thus, you should proceed with your proposed plan for refilling the two positions in question.

DFB/dv
cc: Provost Winstead

(7) Ag + Life Sciences

North Carolina State University

College of Agriculture and Life Sciences

Toxicology Program
Box 7633
Raleigh, NC 27695-7633

June 6, 1989

Memorandum

TO: University Administration
CALS Administration
Department Heads
Other Department Contacts

FROM: Ernest Hodgson

REF: Department of Toxicology

With the formation of the new CALS Department of Toxicology (effective July 1st, 1989) it seemed appropriate to let everyone know the mailing address and to request that all mail for the department be so directed.

CAMPUS MAIL

Department of Toxicology
Box 7633
NCSU Campus

U.S. MAIL

Department of Toxicology
Box 7633
North Carolina State University
Raleigh, NC 27695

TELEPHONE

919-737-2274

The department office is located in

Method IV
840 Method Rd.
NCSU Campus

Please inform your administrative assistants, secretaries, bookkeepers, etc. of this change. Thank you.

Lawrence M. Clark
Box 7101
NCSU

Ag. & Life Sciences

North Carolina State University

Box 7642, 107 Patterson Hall
Raleigh, NC 27695-7642
(919) 737-3248

May 17, 1989

Dear Member of the North Carolina State University Family:

Dr. H. Bradford Craig is retiring from his position as Associate Director of Academic Affairs and Director of the Agricultural Institute, College of Agriculture and Life Sciences, North Carolina State University. **You are invited to attend a reception and dinner in his honor on Friday, July 28 at the North Carolina State University McKimmon Center.** The reception will be from 6:00 p.m.-7:00 p.m. followed by dinner at 7:00 p.m. The cost of the reception and dinner will be $15.00 per person.

We are soliciting donations for a gift from Dr. Brad Craig's friends at North Carolina State University. We invite your financial support of the gift. Also, friends of Dr. Brad Craig are being given the opportunity to contribute money for an endowed scholarship. This scholarship will be for students in the Agricultural Institute. If desired, you may contribute to this scholarship. Contributors will be noted, with a list given to Dr. Craig. Scholarship gifts are tax-deductible.

We are planning to present a book of letters to Dr. Craig during the evening. If you desire to **contribute a letter**, please do so on 8 1/2 x 11 paper. Be sure to include a 1 1/2 inch margin on the left side of the letter. This needs to be sent (**unfolded**) to Mrs. Holt at the address given below by **June 15.**

Please return the attached form by July 10. We have tried to send this letter to all of Brad's friends, but we may have missed someone. Therefore, please share this information with anyone you think might be interested. If you have questions, please feel free to call one of us.

Sincerely,

Charles G. Wright

Charles G. Wright, Chairman
Retirement Committee
(919) 737-2748

Mrs. Marie L. Holt
Box 7642, 107 Patterson Hall
N. C. State University
Raleigh, NC 27695-7642
(919) 737-3248

P.S. Mark your calendar now for these dates: **June 15** - Letters for Book Due, **July 10** - Return Reservation Form, **July 28** - Reception and Dinner for Dr. Craig
PLEASE KEEP THIS LETTER AS YOUR REMINDER

H. BRADFORD CRAIG

RETIREMENT/RECOGNITION RECEPTION AND DINNER

_____ Yes, I(We) Will Attend _____ No, I(We) Cannot Attend

_____ Number (Reception/Dinner) ($15.00/person) $_____

Gift for Dr. Brad Craig $_____

Total Amount $_____*

*A check for the **Reception, Dinner, and Gift** should be made payable to:

Agricultural Institute Alumni

Endowed Scholarship Gift $_____**

A check for the **Endowed Scholarship should be made payable to:

N. C. Agricultural Foundation
Ref.: H. Bradford Craig Scholarship

**Separate checks are required to properly document your tax deductible contribution.

Name_____ Telephone No._____

Address_____

PLEASE RETURN THIS FORM BY July 10 TO:

Mrs. Marie L. Holt
Box 7642, 107 Patterson Hall
N. C. State University
Raleigh, NC 27695-7642

Name(s) of Guest(s) Attending

Please Print or Type

_____ _____

_____ _____

_____ _____

North Carolina State University

College of Agriculture and Life Sciences

Toxicology Program
Box 7633
Raleigh, NC 27695-7633

June 6, 1989

Memorandum

TO: University Administration
CALS Administration
Department Heads
Other Department Contacts

FROM: Ernest Hodgson

REF: Department of Toxicology

With the formation of the new CALS Department of Toxicology (effective July 1st, 1989) it seemed appropriate to let everyone know the mailing address and to request that all mail for the department be so directed.

CAMPUS MAIL

Department of Toxicology
Box 7633
NCSU Campus

U.S. MAIL

Department of Toxicology
Box 7633
North Carolina State University
Raleigh, NC 27695

TELEPHONE

919-737-2274

The department office is located in

Method IV
840 Method Rd.
NCSU Campus

Please inform your administrative assistants, secretaries, bookkeepers, etc. of this change. Thank you.

Lawrence M. Clark
Box 7101
NCSU

North Carolina State University

Office of the Dean
Box 7601
Raleigh, NC 27695-7601
919-737-2668

College of Agriculture and Life Sciences
Academic Affairs, Extension & Research

March 29, 1989

Dr. Lawrence M. Clark
Provost's Office
Box 7101
NCSU Campus

Dear Larry:

The Office of Academic Affairs in the College of Agriculture and Life Sciences is sponsoring an African-American Awards Reception on April 21 from 6:00-8:00 p.m. at the McKimmon Center. You are cordially invited to attend this reception which is for the purpose of honoring many of our African-American students in the College for the awards and recognition they have received during the past year. Approximately 150 students and their parents have been invited to attend this special event.

Please indicate whether or not you can attend on the enclosed sheet and return to Dr. Jon Ort by April 12. Thank you for your attention in this matter and we are looking forward to the upcoming reception in April.

Sincerely,

Durward F. Bateman
Dean

DFB/fbk

Enclosure

AFRICAN-AMERICAN AWARDS RECEPTION
McKIMMON CENTER
6:00-8:00 p.m.
April 21, 1989

____ I will be able to attend the reception.

____ I will be unable to attend.

Name_____

Department_____

Please fold so that the return address is showing, staple and return by APRIL 12.

CAMPUS MAIL

Dr. Jon F. Ort
Agriculture and Life Sciences
Box 7642
NCSU Campus

(3) Ag. & Life Sciences
"Minority Internships"

North Carolina State University

Office of the Dean
Box 7601
Raleigh, NC 27695-7601
919-737-2668

College of Agriculture and Life Sciences
Academic Affairs, Extension & Research

March 27, 1989

TO: Chancellor Bruce Poulton

FROM: D. F. Bateman, Dean

SUBJECT: Minority Internships/N.C. Agricultural Extension Service

This is to call to your attention an internship program being initiated to help the future recruitment of more blacks for agricultural positions in the N.C. Agricultural Extension Service. We hope this effort will be successful.

DFB/dv
Enc.
cc: Provost N. Winstead
Associate Provost L. Clark ✓

North Carolina State University
College of Agriculture and Life Sciences
Extension Intern Proposal for Summer of 1989

While the North Carolina Agricultural Extension Service has been successful in recruiting black agents for home economics, 4-H, and CRD, the recruiting of black agents for agriculture positions has not been as successful in recent years. Also schools of agriculture have faced a declining enrollment nationally, and according to Dean Webb at A&T there has been a decline in students particularly in agriculture.

Because of the difficulty in getting applications from blacks graduating in agriculture disciplines, we are proposing a ten week summer intern program during 1989. The following budget would be necessary to support eight intern positions during this ten week period.

Salaries - $6.00/hr.
Fringe benefits, travel, and one or two opportunities for intern to attend a professional meeting in-state and possibly 2 or 3 day travel experience with appropriate specialists during summer - $4,000.00
(8 x $4,000.00 = $32,000.00 total budget)

Guidelines in Selecting and Placing Interns

1. Students should have completed their sophmore year in an agriculture curriculum. (We should consider recruiting some sophmores and then again employing them as intern in their junior year with an increase in salary.) Interns will likely live at home and would need to be located in home county or contiguous county. (Other experiences could be provided during the 10 week period.)

2. Interns would receive $6.00 an hour for the first year and probably $7.00 the second year. Interns would receive travel reimbursement during work period and allocation would need to be provided for some statewide professional meeting or two or three day experience in other counties or with specialists in the area.

3. Counties would be selected that would provide a positive environment for interns

North Carolina State University
College of Agriculture and Life Sciences

Office of the Dean
Box 7601
Raleigh, NC 27695-7601
919-737-2668

Academic Affairs
Extension
Research

March 26, 1990

Dr. Clark
do you wish
to attend?

Dr. Lawrence M. Clark
Associate Provost
Provost's Office
Box 7101
NCSU Campus

Dear Dr. Clark:

The Office of Academic Affairs in the College of Agriculture and Life Sciences is sponsoring an African-American Awards Reception and Program on April 18 from 7:00-9:00 p.m. in 2405 Williams Hall. You are cordially invited to attend this reception which is to honor many of our African-American students in the College for the awards and recognition they have received during the past year. Approximately 180 students have been invited to attend this special event.

Please indicate whether or not you can attend on the enclosed sheet and return it to me by April 6. Thank you for your attention to this matter and we are looking forward to the upcoming reception in April.

Yes - reply
Sent 3/29/90

Sincerely yours,

D. F. Bateman
Dean

DFB/fbk

Enclosure

MAR 1990
RECEIVED
PROVOST'S OFFICE
N.C. STATE
UNIVERSITY

AGRICULTURAL
EXTENSION
SERVICE

North Carolina State University
College of Agriculture and Life Sciences

Agricultural Extension Service
Office of the Director
Box 7602
Raleigh, N. C. 27695-7602

July 28, 1989

TO: Environmental Scan Group

Chester D. Black

FROM: Dr. Chester Black, Associate Dean and Director

RE: Environmental Scan of Trends and Emerging Issues

In order to initiate the strategic planning process for the next four-year planning period, the N. C. Agricultural Extension Service is conducting an environmental scan of trends and emerging issues in the following areas:

Demographic, social values and lifestyle changes
Economic changes
Technological changes
Political and regulatory changes

You have been selected to review these trends and emerging issues and indicate which 25 issues Extension should consider as we initiate our strategic planning process. Please complete the attached survey form and return by August 4, 1989.

Once we tabulate the group's 25 most important items, the list will be returned with a request for you to rank these items in order of importance for Extension to address with educational programs.

Thank you in advance for your assistance in this endeavor.

CDB/psp

N. C. Agricultural Extension Service Environmental Scan

Trends and Emerging Issues

1. Mental Health of Children

At least 7.5 million, or 12 percent of children under the age of 18 are suffering from a diagnosable mental disorder. For some children facing severe "psychosocial adversity," such as a those living in an inner city, the figure may be as high as 20 percent. (National Institute of Mental Health, 1989)

2. Youth at Risk

Young adolescents are facing more social and health risks than their parents and grandparents did, leading many of them to become sexually active, use alcohol and drugs and commit suicide. (Carnegie Council on Adolescent Development, 1989)

3. Wrong Kind of Education

The wrong kind of education at too young an age is stifling children's development and love of learning, pitting child against child and creating feelings of failure. (National Association of State Boards of Education, 1988)

4. The Elderly

Many elderly people live alone today, but they tend to stay in touch with their families. Forty-five percent of those with children see or talk to their children daily. Fifty-seven percent have children within a half hour of their home. (American Demographics Magazine, 1989)

5. New picture for Computer Graphics

More than two dozen software titles are being developed for N. V. Phillips' CD-Interactive system which will allow users to control video and graphics on their TV sets. (Wall Street Journal, July 5, 1989)

6. WASTE DISPOSAL

- America spends $10 billion each year on waste disposal.
- Every Sunday 550,000 trees are used to produce the 88 percent of newspapers that is not recycled.
- Americans use 2.5 million plastic bottles every hour, most of which are not recycled.
- Americans throw away enough glass bottles and jars to fill the 1350-foot twin towers of New York's World Trade Center every two weeks.
- Americans throw away enough iron and steel to continously supply all the nation's automakers. (Environmental Defense Fund estimates)

7. Changes in the Sunbelt

The ERA of the Sunbelt will soon be over....and, in fact, already is over in many parts of the region. Per capita income stayed flat in the last half of the 1980's, at about 86% of U. S. per capita income, and the differential between the South and non-South narrowed. (J. White, Southern Growth Policies Board, 1988)

8. Change and Innovations Are Even More Frequent and Powerful

Change and innovations are constantly altering products, the ways in which businesses are organized and financed, and how markets are defined and served. At the bottom of the business spectrum, unprecedent levels of small business creation and failure while at the top end- in the Fortune 500 - much of the energy is being spent on mergers, acquisitions, hostile takeovers, restructuring and refinancing. (J. White, Southern Growth policies Board, 1988)

9. Growing importance of the human resource base in the future economy

Education, skills and attitudes of the labor force will be the single most important key to the future. About 75% of the work force in the year 2000 is already working and all have been born. Of the current labor force, 45% are female, 15% are minority and 25% are classified as adult functional illiterates. (J. White, Southern Growth Policies Board, 1988)

10. New entrants into labor force

The profile of new entrants into the labor force will be 15% native white men; two thirds will be women, and nearly 21% minority or immigrant women; and over 42% will be minority or immigrant. (Hudson Institute, Workforce 2000)

11. Continuing globalization of the economy

About 70% of American goods compete domestically and abroad with foreign made goods. More and more Americans work for foreign owned firms, as do nearly a million Southerners and more jobs depend on exports - in the South alone, over one and a quarter million jobs. (J. White, Southern Growth Policies Board, 1988)

12. Post industrial economy

The percentage of the work force employed in manufacturing will continue its twenty-year decline and most of job creation will be in the service sector. In the South, the percent of the workforce employed in manufacturing will decline from a 1985 level of 18% to 13% in 2000. Probably 75-80% of new jobs created will be in services sector. (J. White, Southern Growth Policies Board, 1988)

13. Information as Stratgic Input

While financial capital, raw materials and good labor will continue to be essential to this new economy; information will be the new strategic input into the economy of tomorrow. (J. White, Southern Growth Policies Board, 1988)

14. Spatial Impact of Urbanization

Continued urbanization of the Southern economy occurs at the expense of many rural and small town areas. Traditional manufacturing jobs are being lost in rural areas while new information and service economy jobs are being created in the metro areas. (J. White, Southern Growth Policies Board, 1988)

15. Growing need to develop sophisticated, collaborative partnerships between the public and private sectors.

Our major industrial competitors, such as Japan, Germany and France and others have been perfecting collaborative models for a long time. The state needs to encourage "industries to reorganize in a manner that encourages innovative specialization." (J. White, Southern Growth Policies Board, 1988)

16. Poverty rate higher in U. S. nonmetro

While the poverty rate nationwide is just over 12 percent, the nonmetro rate exceeds 18 percent. The poverty rate in the Southern region is 22.6 percent for nonometro residents and 14.6 percent for metro residents. Thirty one percent of blacks in metro areas live in poverty vs. 28.7 percent for Hispanics, 28.6 percent for whites. In nonmetro areas 43.4 percent of blacks are in poverty versus 34.5 percent for Hispanics and 15.8 percent for whites. (Current Population Survey, Bureau of the Census, 1986)

17. Decline in Tax Revenues

Tax revenues collected by many rural communities have decreased as land values declined and working adults relocated to cities. Federal funding that once supported education, sanitation projects, public safety and housing renewal also ended, putting some local governments into a tight squeeze between need for service and revenues to support them. (Revitalizing Rural N. C., 1989)

18. Economic Health of Rural Communities

The economic health of rural communities has traditionally been closely related to the health of the agricultural economy. As farm income declines and former farm workers look for alternative employment, rural areas are seeking ways to diversity and expand their mix of business enterprises, increase-value-added locally and offer new jobs to local residents. (Revitalizing Rural N.C., 1989)

19. Need for Greater Efficiency

In the future, successful rural businesses, farming included, will depend on greater efficiency, lower costs and higher quality. In agriculture, the emphasis is shifting towards achieving maximum profit rather than maximum yield. (Revitalizing Rural N. C., 1989)

20. Impact of Social and Economic Change

Family networks, rural institutions and organizations that have traditionally supported rural residents have been weakened by the impact of social and economic changes. Increasing rural poverty rates, especially rates of child poverty, threaten the standard of living and the quality of life in rural areas. (Revitalizing Rural N. C., 1989)

21. **Farmers Continue to Face Economic Stress.**

The most recent survey of the financial conditions of North Carolina farmers showed that 7.8 percent had a debt-to-asset ration of 70 percent or greater (the average for this group was 92.5 percent) and an additional 11.4 percent had debt-to-asset ratios in the 40 to 70 percent range (with an average of 50 percent). In addition, 2.1 percent of the farmers were in some stage of bankruptcy. These figures imply that more than 15,000 North Carolina farmers are experiencing severe financial stress (Pathways to a New Century, 1987-1991).

22. **Tobacco Income Still Ranks High.**

Tobacco remains one of the major sources of income in North Carolina, accounting for more than 20 percent of the state's total gross farm income. Although dependence on tobacco has declined somewhat in recent years, the income produced by the crop, the way that the crop fits into the overall farm plan and the impact that significant changes in the tobacco program would have on the financial stability of the family farm remain of utmost importance (Pathways to a New Century, 1987-1991).

23. **Poultry Provides Economic Bright Spot.**

The poultry industry has contributed over $1 billion to annual farm income in the state during each of the past three years. In the last decade broiler numbers increased 43 percent, turkey numbers rose 134 percent, and egg production increased 23 percent (Pathways to a New Century, 1987-1991).

24. **Specialized Ag Industries Prosper.**

Woody ornamental production now exceeds 4,700 acres. Christmas tree production has tripled in the past 10 years and now adds more than $12 million, primarily to family farm income in western North Carolina. Add to these crops more than 2 million acres of turf with an annual maintenance value of over $700 million and floral crops worth over $90 million and one sees a picture of growing, healthy, and profitable specialized agricultural industries in the state (Pathways to a New Century, 1987-1991).

25. **Families Face Change and Stress.**

North Carolina families are experiencing rapid and in some cases severe societal and economic change. Twenty percent of North Carolina's families are headed by single persons, and almost 700,000 of its citizens are elderly (Pathways to New Century, 1987-1991).

26. **Room for Improvement in Health.**

Mortality rates for heart disease, stroke, and diabetes in North Carolina are above the U.S. average. Twenty percent of North Carolina's citizens have hypertension, 20 percent are obese, and about 60 percent have sedentary lifestyles that are not conducive to good health (Pathways to a New Century, 1987-1991).

27. **Energy Costs Are a Continuing Concern.**

Households today are paying about two-and-one-half times as much per kilowatt-hour for space heating, cooling, and water heating as they did 10 years ago. The potential for use of alternate energy sources has not been realized in North Carolina. Loss of federal tax credits and 10 to 20 percent higher building costs have been constraints on construction of solar-heated buildings (Pathways to a New Century, 1987-1991).

28. **Safe and Adequate Spaces for Living.**

Technological advances in the coming decade will make it possible to live work, play, and shop at home. Thus the home will more than ever be the main arena for the family. Two groups of people, first-time buyers and older adults, are facing limited living space, a factor of affordability and changing lifestyles. In contrast, the baby boomers and middle-aged people are in the upscale home buying market (Pathways to a New Century, 1987-1991).

29. **Decline in Farms.**

From 1982 to 1987, total farms in North Carolina declined from 72,792 to 59,284 an 18 percent decline while average size of farms increased from 148 acres to 159 acres (11 percent). For farms with sales of $10,000 or more, they decreased from 33,228 in 1982 to 25,721 in 1987 (22 percent decline) and increased in average size to 276 acres from 232 acres (18 percent increase) (1987 Census of Agriculture).

30. **Air Quality.**

Overall, air quality seems to have improved over the years but evidence of more complex air pollution questions is mounting. Although North Carolina is below the standard statewide for carbon monoxide, Wake, Durham, and Mecklenburg counties are still not in compliance with emission standards. Also ozone and sulfur pollution are still problems in urban arenas, particularly during the summer (N. C. Insight, 1988).

31. **Land Development.**

From 1981 to 1987, the number of acres approved for new development increased from 13,600 acres to 30,600 acres (125 percent). From 1984 to 1987, acres disturbed by all projects requiring a permit in 20 counties covered by the Coastal Area Management Act increased from 1,670 acres to 3,332 acres (99 percent) (Land Quality Section, Division of Land Resources, NRCD).

32. **North Carolina Acreage in Forests, Farms and Harvested Cropland.**

From 1975 to 1986, total forest land declined from 20.0 million acres to 18.5 million (7 percent). From 1985 to 1987, land in farms declined from 12.3 million acres to 9.4 million (23 percent) and harvested cropland from 4.7 million acres to 3.7 million acres (19 percent) (NRCD and Census of Agriculture).

33. **Surface Water Quality.**

There are 37,000 miles of fresh water streams and rivers in the state and some 320,000 acres of lakes and reservoirs. Virtually all North Carolina inland surface waters have an assigned best usage within one of two general classes of water supply (6,400 miles of streams and rivers) and fishable/swimmable (31,000 miles). For streams and rivers, 67 percent of the miles support the best-use classification, 27 percent are partially supporting, and 5 percent are not supporting. From 1977 to 1985, the number of miles of degraded stream decreased by 80 percent from 3,000 to 600 miles (N. C. Insight, 10/88).

34. **Ground Water Quality.**

More than one of every two North Carolinians (55 percent) depends on wells, i.e., ground water for drinking water. North Carolina has more domestic wells (some 822,000) than any other state and another 5,100 community wells. Although there is no statewide contamination of ground water, there are localized problems that do not show up in statewide data (N. C. Insight, 10/88).

35. **Estuaries and Sounds.**

From 1980 to 1987, the number of acres closed to shell fishing decreased by 4 percent, from 328,000 to 316,500 acres. From 1980 to 1987, the number of prohibited acres in saline waters (oysters and saltwater clam areas) increased by 16 percent, from 49,500 to 57,300 acres (N. C. Insight, 10/88).

36. **Water Supply.**

There is no systematic reporting on water supplies in the state; however, there are about 55 water systems in the state serving more than 10,000 people, plus thousands of smaller ones (mobile home parks, etc.). Roughly 3,000 small water supply systems serve small communities and most of these systems are too small to deal with all the problems that can offset water supply and water quality. (N. C. Insight, 10/88).

37. **Poverty in Rural Areas.**

Rural areas lag behind urban areas in educational attainment, access to health care and quality of housing. Poverty is more prominent in rural areas (N. C. Rural Profile, 1988).

38. **All parts of the state are expected to experience growth between now and the year 2000; however, rural areas are expected to grow somewhat more slowly than urban areas.**

In 1980, approximately 47 percent (2,677,091 of 5,880,313) of North Carolina's population lived in nonmetro counties. By 2000, this percentage is expected to drop slightly to about 44 percent (3,184,657 of 7,262,877) (N. C. Rural Profile, 1988).

39. **Growth rates will vary substantially among the different regions of the state, with the predominantly urban Piedmont growing the fastest.**

Between 1990 and 2000, the Piedmont and the Tidewater regions are projected to grow faster than the state average of 10 percent, while the Coastal Plain and Mountain regions are projected to grow more slowly than the state average. It is important to note, however, that in the Mountain, Coastal Plain and Tidewater regions, anticipated nonmetro growth rates equal or exceed anticipated metro growth rates (N. C. Rural Profile, 1988).

40. **The proportion of young people in rural North Carolina will decline.**

Between 1990 and 2000, it is anticipated that the rate of increase for the population under 15 years of age will be 6.8 percent in metro counties. The nonmetro rate is projected at 2.2 percent. The Coastal Plain region will actually have fewer young people in 2000 than in 1990 (N. C. Rural Profile, 1988).

41. **The proportion of working age people in rural areas will decline slightly.**

Between 1990 and 2000, the rate of increase for the population 16 to 64 years of age is projected to be 11.5 percent in metro counties while the nonmetro rate will be 8.1. Growth will be especially slow in the Mountain and Coastal Plain regions and especially fast in the Tidewater (N. C. Rural Profile, 1988).

42. **The proportion of elderly in rural areas will continue to be large.**

As in the rest of the country, the average age of North Carolinians is increasing. This is particularly true for rural North Carolina, which will continue to have a disproportionate share of elderly. By 2000, 15 of every 100 persons living in nonmetro counties in the state will be more than 65 years of age. Elderly populations will be high in each of the four regions, but especially large in the Coastal Plain and the Tidewater regions (N. C. Rural Profile, 1988).

43. **Most people in North Carolina can find work.**

The statewide unemployment rate in 1986 was a low 5.3 percent, and was estimated at 4.5 percent in 1987 (N. C. Rural Profile, 1988).

44. **Rates of unemployment are significantly higher in rural areas than in urban areas.**

In 1986, unemployment averaged 4.5 percent in metro counties and 6.5 percent in nonmetro counties. The Piedmont had comparatively low rates of unemloyment in both metro and nonmetro counties, while the Coastal Plain had the highest rates for both types of counties. In fact, the nonmetro unemployment rate in the Piedmont was almost equal to the metro unemployment rate in the Coastal Plain. The Mountain and the Tidewater regions fell between these two extremes (N. C. Rural Profile, 1988).

45. **Rural counties lost jobs in the early 1980's and still lag behind in job growth.**

In the recessionary period between 1980 and 1983, North Carolina's overall rate of change in total employment was only 0.1 percent. Nonmetro counties actually lost employment during that time. As the economy picked up in the period between 1983 and 1986, metro employment increased at 15.4 percent while nonmetro employmentlagged behind at 9.8 percent (N. C. Rural Profile, 1988).

46. **Job growth is slowest in the Coastal Plains and Mountain regions.**

Between 1983 and 1986, job growth in the Coastal Plains and Mountain regions were both below the state average of 13 percent. During the same years, the rates of job growth in the Piedmont and Tidewater regions were higher than the state average (N. C. Rural Profile, 1988).

47. **Per capita income is lower in rural areas than in urban areas and the gap appears to be increasing.**

In 1980, per capita income was lower in nonmetro counties ($6,834) than in metro counties ($8,579). The gap between nonmetro and metro personal income increased in the period between 1980 and 1984 from $1,745 to $2,692. On the average, people in metro counties and the difference appears to be growing (N., C. Rural Profile, 1988).

48. **Income in the Coastal Plain region is the lowest in the state while income in the Piedmont region is the highest.**

In 1984, per capita income in the Coastal Plain region was $9,085 compared to a per capita income of $12,086 in the Piedmont region. Regional differences are so great that income in nonmetro counties in the Piedmont is higher than in metro counties in the Coastal Plain. The Mountain and Tidewater regions fall in between the two extremes (N. C. Rural Profile, 1988).

49. **The rates of poverty are significantly higher in rural areas than in urban areas and the gap appears to be widening.**

In 1980, 17.8 percent of people living in North Carolina's nonmetro counties lived below the poverty level. The metro rate was 11.3 percent, a 6.5 percentage point difference between nonmetro and metro rates. In 1983, it was estimated that 20.6 percent of North Carolina's nonmetro residents lived in poverty while 12.9 percent of metro dwellers did, suggesting that the poverty gap is continuing to widen (N. C. Rural Profile, 1988).

50. **Particularly hard hit by poverty are female-headed households.**

In 1980, the rate of poverty for female-headed households in nonmetro counties was 36 percent, compared to a metro rate of 28 percent. In the Coastal Plain and Tidewater regions more than 40 percent of female-headed households live below the poverty level. In the Piedmont and Mountain regions the rate is around 26 percent (N. C. Rural Profile, 1988).

51. **Significant differences in poverty are found among the four regions.**

The highest rates of poverty are found in the Coastal Plain region where, in 1983, one of every four people lived below the poverty level. The lowest rate is found in the Piedmont (N., C. Rural Profile, 1988).

52. A slightly higher proportion of people in rural areas are employed in manufacturing.

In 1986, a slightly higher proportion of the people who lived in nonmetro counties were employed in manufacturing. This distinction is most pronounced in the Coastal Plain region where 26 percent of the nonmetro, and 12.7 percent of the metro workforce was employed in manufacturing.
(N. C. Rural Profile, 1988)

53. A much lower proportion of people in rural areas are employed in service sector jobs.

Metro counties have a disproportionate number of service sector jobs. About 17 percent of the metro workforce, but only 10 percent of the nonmetro workforce, were employed in the service sector in 1986. This pattern held true in every region but was most pronounced in the Piedmont. Tremendous service sector growth is expected in North Carolina in the future.
(N. C. Rural Profile, 1988)

54. Agricultural employment is low both in rural and urban areas.

Approximately 2 percent of the total labor force in North Carolina is now employed in agriculture. As expected, a larger percentage of people in nonmetro counties make their living on the farm than in metro counties.
(N. C. Rural Profile, 1988)

55. A higher proportion of farmers in urban areas are able to rely on off-farm income than in rural areas.

About 40 percent of North Carolina's farmers are able to significantly supplement their farm income with off-farm income. But such income is easier for farmers in metro counties to find. In metro counties about 47 percent of farmers work 100 days off the farm. Only about 38 percent in nonmetro counties meet this criterion. This distinction holds in each region, but is most pronounced in the Coastal Plain region.
(N. C. Rural Profile, 1988)

56. Educational attainment is lower in rural areas than in urban areas.

In 1980, about 3 in 10 people living in nonmetro counties did not finish the ninth grade. In metro counties the rate was 2 in 10, or 33 percent lower.
(N. C. Rural Profile, 1988)

57. Educational attainment is especially low in the Coastal Plain and Mountain regions.

In the Coastal Plain region, 33 percent of people who live in nonmetro counties, and 15 percent of those who live in metro counties, quit school before the ninth grade. In general, the Tidewater and the Piedmont regions have higher percentages of their populations completing the ninth grade than the Coastal Plain or the Mountain regions.
(N. C. Rural Profile, 1988)

58. Dropout rates are somewhat higher in rural areas than in urban areas.

Statewide high school dropout rates tend to be slightly higher in nonmetro counties. Only in the Tidewater region does the metro dropout rate exceed the nonmetro rate. The 7.2 percent dropout rate found in the Mountain region is highest in the state.
(N. C. Rural Profile, 1988)

59. Local expenditures for education tend to be lower in rural areas.

In 1984/85 an average of $668 per pupil was spent in the metro counties, but only $432 in nonmetro counties. The Piedmont region leads the state in local per pupil expenditures. Urban areas appear to be better able to pay for education.
(N. C. Rural Profile, 1988)

60. The infant mortality rate is higher in rural area.

The infant mortality rate, considered one of the best overall indicators of health status, is slightly higher in nonmetro than metro counties. Rates are highest in the Coastal Plain region where 14 infant deaths occur for every 1,000 live births. The lowest rates are in the Mountain region. Rates in the Tidewater region and the Piedmont region fall between the two extremes.
(N. C. Rural Profile, 1988)

61. There is significantly less access to health care in rural areas than in urban areas.

Access to health care is generally better in metro counties where the ratio is 1,472 per physician than in nonmetro areas where it is 2,045. The Piedmont and Mountain regions have better access to health care than the Coastal Plain or the Tidewater Regions.
(N. C. Rural Profile, 1988)

62. Housing in rural areas is generally more crowded than housing in urban areas.

In 1980, 5.5 percent of all housing in nonmetro counties contained 1.01 or more persons per room. The metro rate was 3.7 percent. The Coastal Plain region contains the highest rate of crowded housing while the Mountain region has the lowest.
(N. C. Rural Profile, 1988)

63. Rural housing is much more likely to lack complete plumbing facilities.

In 1980, 6.6 percent of all housing in nonmetro counties lacked complete plumbing facilities, while the metro rate was only 2 percent. Seven percent of houses in the Coastal Plain region lacked complete plumbing while the rate in the Piedmont region was less than 3 percent.
(N. C. Rural Profile, 1988)

64. **North Carolina now generates about 25 million pounds of solid waste daily - or about four pounds per person each day.**

Most of that garbage ends up in the state's 150 industrial and public landfills, most of which are operated by county governments; however, a third of the 119 city and county-run landfills are expected to run out of space within five years (by 1993).
(N. C. Insight, March 1988)

65. **From 1974 to 1986, Reynolds Aluminum Recycling Company's North Carolina business grew by 6,800 percent, from 100,000 pounds of aluminum to 6.8 million pounds.**

The company paid customers $1.9 million in 1986 for 176 million aluminum cans brought to its 30 recycling centers in the state. Twenty years ago, Reynolds used virtually no recycled material, but now relies on recycled aluminum for 40 percent of its metal refining needs.
(N. C. Insight, March 1988)

66. **In the last decade, the state's population has grown rapidly, about 1.5 percent a year, to 6.3 million people, the 10th most populous state.**

More people mean more demand for water, and shortages have begun to appear regularly in some parts of the state.
(N. C. Insight, March 1988)

67. **The number of industrial, municipal, and private sewage-treatment plans that dump their wastewater into the state's waterways is growing rapidly.**

North Carolina now has the most federal wastewater discharge permits of any state in the Southeast, including the booming state of Florida.
(N. C. Insight, March 1988)

68. **During 1986, North Carolina business and industry generated more than 2 billion pounds of hazardous wastes.**

These industrial by-products can pose a serious threat to human health and the environment if treated improperly.
(N. C. Insight, March 1988)

69. **There are more than 700 inactive hazardous waste sites statewide.**

(N. C. Insight, March 1988)

70. **Nuclear power plants, research labs, fuel production facilities, and hospitals produce about 100,000 cubic feet of low-level radioactive waste each year in North Carolina, enough to fill a 100-foot silo.**

Two of North Carolina's three nuclear power plants now store about 700 tons of high-level radioactive waste. This high-level waste can remain dangerous for many years if not stored properly.
(N. C. Insight, March 1988)

71. Currently, 93 of the state's 100 counties have planning or zoning boards, but only 50 have county-wide zoning.

Similarly, 80 have land-use plans but only 55 have any subdivision regulations, and only 23 have a capital facility plan.
(N. C. Insight, March 1988)

72. Currently there are 521 County Commissioners.

In 1988, there was a 25 percent turnover among board members in all counties. Statewide there are 68 Democratic boards and 32 Republican, eight 3-member boards, 75 5-member boards, one 6-member board, 14 7-member boards, and two 9-member boards. Also there are 60 blacks (11.5 percent), 58 women (11.1 percent), and three Indians (.5 percent).
(County Lines, 1988)

73. Youth at Risk

Every day growing number of youth are separated from the mainstream of American life as the consequences to society continue to rise:

.One in every five children lives in poverty.
.Each year 500,000 teens will attempt suicide; 5,000 will succeed.
.More than 23 million adults are functionally illiterate; 13 percent of the Nation's teenagers join this group annually.
.1985, 2 million children were reported to state agencies as victims of child abuse and neglect.
.About 7.5 million children suffer emotional problems warranting mental health treatment.
.Nearly 50 percent of the Nation's high school seniors say they have used illegal drugs during the past year. OVer 3 million teenagers are chronic alcoholics.
.Four out of every ten teenage girls will become pregnant; one out of five will bear a child.
(Youth at Risk Initiative, 1989)

74. Costs of Youth at Risk

Illiteracy and lack of job and work skills prohibit many youth from entering the work force. The national cost for institutions, medical care, and welfare continues to mount. Consider the following:

.The annual cost for a family on AFDS (Aid to Families with Dependent Children) is $4,300.
.The annual cost for each family on Food Stamps is $6,600.
.The annual average cost for incarcerating a person is $15,000.
.The daily cost for detaining a juvenile ranges from 468 to $118, depending upon the type of facility.
.One-half of all welfare payments are made to women who gave birth in their teen years.

By contrast, prevention and intervention programs are more effective and less costly:

.The National Alliance of Business estimates that each $1.00 spent on prevention/intervention programs will save $4.75 in reduced remedial education, welfare, and crime costs.
(Youth at Risk Initiative, 1989)

75. Blacks and whites are "worlds apart" in their perception of race relations.

Large majorities of whites believe that blacks are treated equally in America and similarly large majorities of blacks disagree. Most whites surveyed felt that blacks received equal pay for equal work, a majority of blacks disagreed. Similarly, 61 percent of whites rejected the notion that the criminal justice system treated blacks unequally, a statement that found support among 80 percent of blacks. More than one-third of whites (36 percent) believed that "blacks tend to have less ambition than whites." (Harris, 1989)

76. The Kerner Report: Twenty Years Later

Recent reports confirm the assessment of many Americans that the 1968 Kerner Commission Report on civil disorders continue to be valid: The Nation is still moving toward two societies, one black, one white - separate and unequal. Moreover, it is not only one of racial separates but also a growing gap between the poor and upper income Americans. (FOCUS, March 1988)

77. Progress For Black Americans

In spite of significant disparities in the social and economic status of blacks and whites, black Americans have made significant progress in three areas: a general increase in educational attainment; the emergence of a small but growing black middle class; and the growing influence of black Americans in the political area. (FOCUS, March 1988)

78. Agreement on National Issues

There is substantial agreement between blacks and whites about the five most important national issues: unemployment, drug abuse, AIDS, the high cost of living, and crime. (Joint Center for Political Studies and Gallup, 1988)

79. Class Placement Of Black Students

In 1980, black youngsters were three times as likely as whites to be placed in classes for the educable mentally retarded and three times as likely to be suspended from high school. Lingering stereotypes and teacher insensitivity contribute to these special problems. "Mistaken notions about low-income people and their life-styles form the basis for low expectations and self-fulfilling prophesies of failure in school." The dearth of black teachers as role models in schools contributed to this lack of understanding. (Vision Of A Better Way: A Black Appraisal of Public Schooling, 1989)

80. Supreme Court Setbacks

In three recent rulings, two of which reinterpret major civil rights decisions, a slim majority of the Supreme Court has seriously narrowed the arena in which civil rights battles may be fought and won. The Court, in January 1989, ruled that state and local governments generally may not impose racial quotas for public work projects. On June 5, the justices erected new barries for minorities seeking to prove with statistics that they are relegated to lower paying, less desirable jobs. On June 12, the court expanded the ability of white men to challenge court-approved plans giving preferential treatment to minorities and women in government jobs. (Black Issues In Higher Education, July 6, 1989)

81. Export South

The U. S. South has a tremendous opportunity in the export markets, but that potential is largely unfulfilled. In the case of both softwood and hardwood lumber, the growth in Southern exports has lagged behind that of the U. S. as a whole. The key opportunities for both Southern softwood and hardwood are in the United Kingdom, Italy, and Spain in Europe, and Japan and South Korea in Asia. Reasons for the failure of the Southern lumber industry to capture fully the export potentials appear to be (1) failure to recognize profit possibilities of exporting and (2) failure to take export markets as seriously as they do domestic markets. (John V. Ward, Assoc., Inc, 1988)

82. U. S. Is Losing Competitive Edge

The U. S. still leads the world in productivity; however, American productivity is not growing as fast as it used to and productivity in the U. S. is not growing as fast as it is elsewhere, most notably in Japan. Moreover, in such areas as product quality, service to customers, and speed of product development, American companies are no longer perceived as world leaders, even by American Consumers. (MIT Commission on Industrial Productivity, 1989)

83. Foreign Ownership

Total foreign direct investments in the United States at the end of 1988 was $304.2 billion. Percentage wise, Britain owned 29 percent, Netherlands - 17 percent, Japan - 16 percent, Canada - 8 percent, West Germany - 7 percent, Switzerland - 5 percent, France - 4 percent and others - 14 percent (U. S. Commerce Department, 1989)

84. Decline of U. S. Graduates In Hard Sciences and Engineering

Of degrees awarded in 1986 by U. S. universities, one-quarter of doctorates in the hard sciences and 60 percent of doctorates in engineering went to non-citizens. At NCSU (1988-89), 35 percent of all engineering graduate students and 30 percent of all graduate students enrolled in physical and mathematical sciences were international. (NCSU Alumni Magazine, March 1989)

85. Will Future Scientists Have An International Perspective?

Students of science are immersed in mathematics, chemistry, physics and biology in college classrooms and laboratories throughout the land. Rarely, however do they learn about countries other than their own, and they almost never learn anything about non-western cultures, global issues, or foreign languages. Moreover, they are rarely faced as students, with perplexing international scientific issues such as deforestation, the greenhouse effect, AIDS, SDI, hunger, poverty, acid rain, and competitiveness. If they don't learn about these matters inside or outside the science curriculum, where might they learn anything about cultural, scientific, social and political issues of international significance? (Phi Kappa Phi Journal, Fall 1988)

86. Southern Agriculture In A World Economy

The South is probably the most trade-oriented and trade sensitive region of the country because of its unique position as a producer of regional speciality commodities such as tobacco, cotton, rice, peanuts, sugar cane, citrus and other fruits, certain vegetables, catfish and pine timber - and as a high-cost producer of most of the major nationally grown commodities - wheat, corn soybeans, and dairy products. Southern agriculture is especially vulnerable to the impacts of world events such as global competition change, production cost change, and change in world financial markets. In 1985, financial flows into and out of the U. S. were estimated at $35 trillion - dwarfing the $550 billion value of goods and services. International financial flows, not trade in goods and services have become the major driving force behind exchange rates. Exchange rate fluctation affect the prices of goods traded in the international market place and thus, affect the competitiveness of U. S. and Southern produced farm commodities. (Southern Agriculture In A World Economy, Leaflet #1, 1988)

87. The Uruguay Round of the GATT

The General Agreement of Tariff and Trade (GATT) began in 1947 as a way to promote international trade through reduced protectionism. At the insistence of the U. S., agriculture was exempted from many of the GATT rules that applied to other sectors. Since 1947, little progress has been made to reduce the level of agricultural protection. The Uruguay Round of negotiations began in Fall 1986 and will last through 1990. For the first time agriculture occupies a central role with three goals: (1) reducing the use of domestic export subsidies; (2) improving market access; and (3) unifying food, health and safety regulations with an international standard. Atthis time it is impossible to predict the outcome of the Uruguay Round. (N. C. State Economist, May 1988)

88. Change in International Influence

By the year 2010, Japan will have emerging military might. China will have risen near the top of the superpower ranks. The Soviet Union's share of the global economy will diminish, while the United State's share will stay about the same - roughly 22 percent. Gradual change in the next 20 years will have dramatic geopolitical effect. Economic and military power will continue to shift to Pacific Rim countries. (Rand Corporation, 1989)

89. Growing Numbers Of Blacks Head South

Since 1980, nearly 100,000 more blacks have moved into the South than moved out. This reverse migration stream first began to show up in the 1975-80 Census data. Between March 1985 and March 1988, the South had a net migration gain of 259,546. The new Southern black immigrants primarily are middle-class, white collar, and they're seeking urban areas. (News and Observer, May 22, 1989)

90. Risks of Living

Some risks in daily life pose greater danger than others. For example, smoking one pack of cigarettes a day exposes a person to a risk of disease that is 12,000 times greater than that of drinking one quart of city water (which contains chloroform, a by-product of chlorination.) (News and Observer)

91. Decline In Black Farmers

Historically the decline of black farm operators from a peak in 1910 has been dramatic. Nationwide there were 926,000 black farm operators in 1920. The number dropped to 87,000 in 1969 and to 57,271 in 1978. In North Carolina, the state with the second greatest number of black farmers after Mississippi, the number declined from 5,820 in 1978 to 4,413 (24.3 percent) in 1982. Black land loss posses complex economic and political problems such as decline of economic basis of rural black communities, loss of agricultural tradition and reduction of political power. Although Southern agriculture provides blacks only a minimal standard of living, farm incomes can be improved if small farmers adopt improved practices, enterprise combination that provide highest possible return on their investment and allocate resources more efficiently. Schulman, et al; Yeboah and Wright in Agriculture in the U. S.: Its Impact on Ethnic and Other Minority Groups, (1985)

92. Access to Mortgage Loans

Savings and Loan Associations in the Triangle reject home loan applications by blacks nearly four times as often as they do white applications. However, the black-white disparity in loan rejections is most pronounced not in the historically segregated South, but in the Midwest and the Plains States where blacks in several large cities are rejected three and four times as often as whites. (Atlanta Journal-Constitution, 1989)

93. Life Expectancy for Black Men

Black men are significantly more likely than white men to be murdered, unemployed, poor, homeless, undereducated or imprisoned and to contract AIDS and other chronic diseases. These factors have caused black life expectancy to drop to 69.4 years, its lowest level since 1982. (National Center for Health Statistics, 1989)

94. Quality of Life

By the year 2000, more than 70 percent of black men will be unemployed, jailed, addicted to drugs or alcohol, part of an underground economy or otherwise out of the labor force indefinitely. About 43 percent of working age black men currently are in that category. (Center for the Study of Social Policy, 1989)

95. Legislature Overhauls Laws for Corporations

The North Carolina General Assembly has approved a massive 125 page rewrite of State stature dealing with all facets of corporate law. Some believe it will serve as an economic development tool to help convince major corporations to move their charters to North Carolina. Lawmakers say they have simplified, updated and streamlined laws going back 34 years after four years of intensive work by legislators, law praofessors and corporate lawyers throughout the state. (The Carolinian, July 4, 1989)

96. Psychosis A Major Cause of N. C. Hospitalization

Analysis of discharge data from 150 hospitals around the state found that treatment of psychosis accounted for more billings - $52.9 million - than any other diagnostic category. Overall, "mental disorders" were the eight most frequent causes of hospitalization in the first six months of 1988, compared with 220 other broad categories. Mental illnesses accounted for 15,373 cases, or 4.4 percent of all hospitalizations and generated charges of $99.6 million or 6.9 percent of the total billings. (N. C. Medical Database Commission, 1989)

97. Doctors Take Small, Significant Steps In Search For AIDS Vaccine.

Although progress may look painstakingly slow in finding an AIDS vaccine, when measured against efforts that lead to vaccines for other viruses, such as hepatitis, AIDS vaccine researchers are working at breakneck speed. It took about 10 years for scientist to get as far in hepatitis vaccine research as they are now in AIDS vaccine work. New cases of AIDS are diagnosed at the rate of about 200 a week in the United States, and by 1991, experts say some 285,000 people will have been stricken. Although the rate of infection has slowed in homosexual men, a high-risk group, it is still increasing in such other groups as intravenous drug abusers and their sex partners and children. (News and Observer, July 5, 1989)

98. High Cholesterol Puts 60 Million At Risk

More than one-third of American adults need to lower their blood cholesterol because they are at high risk of coronary disease. According to a new nationwide analysis of how many people have cholesterol levels and other risk factors such as cigarette smoking or high blood pressure that could significantly increase their chances of developing coronary disease. (Journal of American Medical Association, July 1989)

99. The Supreme Court term, which ended July 3, 1989, may well mark a turning point in the law. On issue after issue from abortion to civil rights to the death penalty to criminal law, the high court changed direction sharply, dominated for the first time in decades by a conservative majority. (Wall Street Journal, July 5, 1989)

100. The County Extension Office Of Tomorrow

Extension's continued success depends on its effective adoption of new technologies. With financial support from the university, the county commission and the private sector, the Boone County Extension Center in mid-Missouri is the model test site for the following experimental technologies: Local Area Computer Networks (LAN), Graphics Work Station, Desktop Publishing, Remote Access, Software testing, Portable Computing, Satellite Downlink, Interactive Video Disk, Two-way Radio Communications, and CD-ROM. (Extension Review, Winter, 1989)

ENVIRONMENTAL SCAN SURVEY

I have reviewed the list of trends and emerging issues and think the N. C. Agricultural Extension Service should consider the following demographic, social values, lifestyle, economic, technological, political and regulatory changes as they initiate a strategic planning process. (Please check the 25 most important items)

____1	____21	____41	____61	____81
____2	____22	____42	____62	____82
____3	____23	____43	____63	____83
____4	____24	____44	____64	____84
____5	____25	____45	____65	____85
____6	____26	____46	____66	____86
____7	____27	____47	____67	____87
____8	____28	____48	____68	____88
____9	____29	____49	____69	____89
____10	____30	____50	____70	____90
____11	____31	____51	____71	____91
____12	____32	____52	____72	____92
____13	____33	____53	____73	____93
____14	____34	____54	____74	____94
____15	____35	____55	____75	____95
____16	____36	____56	____76	____96
____17	____37	____57	____77	____97
____18	____38	____58	____78	____98
____19	____39	____59	____79	____99
____20	____40	____60	____80	____100

Please write in other trends or emerging issues.

1. _____

2. _____

3. _____

4. _____

5. _____

(After completing the Environmental Scan Survey, please return in the enclosed envelope to: Environmental Scan Sub-Committee
Box 7604, NCSU
Raleigh, N. C. 27695-7604

Please return by August 4. Thank you

JOHN D. and CATHERINE T.
MacARTHUR FOUNDATION

Suite 700
140 South Dearborn Street
Chicago, Illinois 60603

Telephone
(312) 726-8000

Copy

July 13, 1989

Dr. Lawrence M. Clark
Associate Provost
North Carolina State University
Box 7101
Raleigh, NC 27695-7101

Dear Dr. Clark:

I reply to your letter of June 5th which has just reached me. I cannot encourage you about funding from the MacArthur Foundation. I am referring your request to Dr. Ruth Adams, Director of our Program on Peace and International Cooperation. I am sure it will receive her careful attention.

Cordially yours,

William Bevan
Vice President

WB:kaw

cc: Dr. Ruth Adams

NORTH CAROLINA STATE UNIVERSITY

With Compliments

COLLEGE OF AGRICULTURE AND LIFE SCIENCES

112 Patterson Hall
Box 7601
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Durward F. Bateman
Dean

NORTH CAROLINA STATE UNIVERSITY

ANNUAL REPORT

1989

College of Agriculture & Life Sciences
North Carolina State University

Academic Affairs
Agricultural Research Service
Agricultural Extension Service

This report summarizes the activities and achievements of the College of Agriculture and Life Sciences and its constituent units during 1989.

Agricultural Research Service — One hundred ninth annual report. For the period from January 1 through December 31, 1989.

Agricultural Extension Service — Annual report for the period from January 1 through December 31, 1989.

Academic Affairs — Annual report for the period from January 1 through December 31, 1989.

Contents

On the Cover

Horticultural science greenhouse research on day length, fertility, and other cultural management practices contributes to growth of the ornamentals and nursery crops industries in North Carolina.

Administration

C. D. Spangler, Jr., *President, University of North Carolina System*

Larry K. Monteith, *Interim Chancellor, North Carolina State University*

Durward F. Bateman, *Dean, College of Agriculture and Life Sciences*

Chester D. Black, *Associate Dean and Director, North Carolina Agricultural Extension Service*

Ronald J. Kuhr, *Associate Dean and Director, North Carolina Agricultural Research Service*

James L. Oblinger, *Associate Dean and Director, Academic Affairs*

Robert E. Cook, *Assistant Dean*

J. Lawrence Apple, *Coordinator of International Programs and Associate Director, North Carolina Agricultural Research Service, International Agriculture*

George J. Kriz, *Associate Director, North Carolina Agricultural Research Service*

Jon F. Ort, *Associate Director, Academic Affairs, and Director, Agricultural Institute*

R. C. Wells, *Associate Director, North Carolina Agricultural Extension Service*

E. J. Boone, *Assistant Director, North Carolina Agricultural Extension Service, Staff Development*

Billy E. Caldwell, *Assistant Director, Agricultural Extension Service, Agriculture and Natural Resources/Community and Rural Development*

Paul E. Dew, *Assistant Director, North Carolina Agricultural Extension Service, County Operations*

Vance E. Hamilton, *Assistant Director, North Carolina Agricultural Extension Service, Support Systems*

Martha R. Johnson, *Assistant Director, North Carolina Agricultural Extension Service, Home Economics*

William H. Johnson, *Assistant Director, North Carolina Agricultural Research Service*

Dalton R. Proctor, *Assistant Director, North Carolina Agricultural Extension Service, 4-H and Youth Development*

LeRoy C. Saylor, *Assistant Director, North Carolina Agricultural Research Service, and Associate Dean, College of Forest Resources*

C. E. Stevens, *Assistant Director, North Carolina Agricultural Research Service, and Associate Dean, College of Veterinary Medicine*

Jacqueline Voss, *Assistant Director, North Carolina Agricultural Research Service, and Dean, School of Human Environmental Sciences, University of North Carolina–Greensboro*

H. D. Gross, *Assistant Director of International Agriculture*

Robert W. Gay, Jr., *Business Officer*

MESSAGE FROM THE DEAN

IN 1989 the College of Agriculture and Life Sciences continued to evolve in ways to better serve the diverse needs of the citizens of North Carolina with special attention focused on the needs of the agricultural and rural sectors.

On campus, we are strengthening our programs in the Biological Sciences, particularly the research programs. Efforts are under way to add faculty members in the Department of Biochemistry to expand both academic and research programs in biotechnology. The College gained approval to establish a Department of Toxicology as of July 1, 1989. This new department has a broad mission with emphasis on research and graduate education. We are in the process of developing the extension function in this unit to meet the many needs of the State in the areas of agriculture, food safety, and toxic wastes. This new department brings the number of departments in the College to twenty-two.

Student enrollment in our undergraduate programs increased by approximately 5 percent. We noted substantial improvement in enrollments in the traditional agricultural curricula. This is a reversal of the trend over the past decade. At the present time approximately two-thirds of our 2,600 undergraduates are majoring in the biological sciences. The Agricultural Institute also experienced an increase in enrollment and now has some 255 majors in nine specializations. Our graduate student enrollment remained stable at about 730 students in 26 fields of study.

D. F. Bateman

Ground was broken for a $9.2 million expansion and renovation of Scott Hall. With 33,000 square feet of new space, this will provide Poultry Science with excellent facilities and double the space currently available. The 1989 General Assembly provided planning funds for a much needed Small Animal Laboratory Building. This facility will accommodate research being carried out by a number of departments and enable the College to better meet the National Institutes of Health guidelines for the housing of research animals. Plans were approved for construction of a Horse Teaching Facility on University Research Unit 1 near the campus. This facility will provide us an opportunity to expand our undergraduate programs in equine science to meet the needs of a growing horse industry in North Carolina.

Substantial progress was made in further expanding facilities to accommodate College programs in several areas of the state. Construction was initiated on additions to the Pamlico Aquaculture Center at Aurora, which became one of our University Research Units during 1989. Also, construction was completed for 12 ponds to accommodate aquaculture research and demonstration work at the Tidewater Research Station at Plymouth. At the Tidewater Research Station, construction was started for the Vernon James Research and Extension Center. This Center will serve as a focal point for research and extension programs for the Blacklands and northeastern North Carolina. On the Cunningham Farm at Kinston, construction was completed for the Raymond P. Cunningham Center which will provide offices and

We gladly accept the challenge of our mission to serve the diverse needs of agriculture and the people of North Carolina with programs of increasing excellence.

meeting space for extension education efforts in eastern North Carolina. The Cunningham Farm is being rapidly developed as a major research station that will accommodate work on agronomic and horticultural crops. It is anticipated that this site will become the Lower Coastal Plain Research Station.

The 1989 General Assembly provided a 6 percent merit increase for our faculty and granted $500,000 of a $4.5 million Agricultural Programs request to expand and enhance our research and extension efforts. This new funding provided limited opportunities to enrich a few selected program areas such as aquaculture. Accumulated inflation over the past decade, plus limited expansion budgets, has placed a great strain on operating budgets in instructional, research and extension areas. Greater emphasis has been placed on securing industrial and federal grants, commodity organization support, and private funding through the four foundations affiliated with the College.

The College experienced considerable change in departmental leadership in 1989. New heads were appointed for the Departments of Animal Science, Crop Science, Entomology, Poultry Science, Soil Science, and Toxicology.

Dr. Chester D. Black retired on December 31, 1989 after a distinguished 30-year career in the Extension Service. He has served for the past seven years as Associate Dean and Director of the North Carolina Agricultural Extension Service.

North Carolina agriculture experienced an excellent year in 1989. Tobacco returned to being a billion dollar crop at the farm level. The poultry and swine industries exhibited steady growth. Growth also took place in production of vegetables, turf, woody ornamentals, and Christmas trees. Our newest commodity, aquaculture, continues to expand, particularly in eastern North Carolina. The first commercial "crop" of hybrid striped bass in the nation was harvested in Beaufort County. This fish is a product of research from the College and has the potential for developing into a significant commodity in the state. North Carolina now has the tenth largest agricultural industry in the United States.

A major factor limiting the campus programs of many departments is quantity and quality of space. With the move of the College of Textiles into new facilities on the Centennial Campus in 1991, the University Administration has assigned the Clark Laboratories Building to our College. This facility will permit us to provide additional space for our departments now housed in Gardner Hall — Botany, Entomology, Genetics, Microbiology, Plant Pathology, and Zoology. In addition, Nelson Hall will be used to house the Department of Economics and Business which is a joint department within the College of Humanities and Social Science and the College of Agriculture and Life Sciences. We are very pleased with these developments.

The support received from the General Assembly, Federal agencies, industry, commodity groups, and our Foundations is greatly appreciated. We gladly accept the challenge of our mission to serve the diverse needs of agriculture and the people of North Carolina with programs of increasing excellence. We pledge to use the resources available to us to facilitate the long-term growth and development of the agricultural and life sciences industries which contribute so much to the economy of North Carolina.

—Durward F. Bateman, Dean

Academic Affairs

ACADEMIC Affairs in the College of Agriculture and Life Sciences offers a wide variety of high quality academic programs to students at all degree levels. Graduates from our four-year baccalaureate and graduate programs as well as from the two-year Agricultural Institute continue to locate challenging employment opportunities in their chosen disciplines. Renewed emphasis has been placed on the quality of the undergraduate experience at NCSU and, in particular, the role of the faculty academic advisor has taken on tremendous significance. As has always been the case, our faculty provide our students a personalized approach to education through their commitment to teaching and advising.

This past year witnessed the retirement of Dr. H. Bradford Craig, Associate Director of Academic Affairs in CALS and Director of the Agricultural Institute for 22 years. Dr. Jon F. Ort became the Director of the Institute on August 1, 1989, while maintaining his already evolving role as Assistant Director of Academic Affairs.

J. L. Oblinger

The College has organized an Alumni Association which is developing programs designed to encourage communication between our College and its alumni. The first alumni issue of *CALS Today* was sent to approximately 16,000 College alumni this past fall. The University Alumni Association helped to sponsor an alumni reception for CALS graduates on November 4 prior to Homecoming. Telemarketing efforts have been initiated in an effort to provide funding for repair and acquisition of teaching equipment.

This past year the College Honors Program was restructured. The program provides an enriched and challenging educational experience for students with exceptional academic skills. Through special courses, seminars and independent research projects, students in the Honors Program are able to interact with distinguished faculty, enhance their education and gain a competitive advantage for the future. Students with at least a 3.25 grade point average are invited to participate in the Honors Program.

The Science Teachers Advisory Board has continued to develop lesson plans for use by the State's 2000 science teachers and helped plan a Science Teachers Workshop. These lesson plans are distributed with the N. C. Agricultural Research Service's *Research Perspectives* publication. Topics have included acid rain, plant nutrition, insect life cycles and nitrogen cycles. Funds provided through the Agricultural Foundation have made this program effort possible.

Many of our students and faculty continue to receive recognition for their accomplishments and achievements. Undergraduate and graduate students are encouraged to present papers at regional and national meetings to gain valuable professional experience and exposure. Recognition of our faculty's prowess in instruction translates directly into high quality teaching and outstanding academic programs.

"Spend A Day At State," a student recruitment program, was begun in 1987 as a result of Agricultural Foundation funding. Designed to give prospective students and their families a view of the campus, the program includes attending classes, meeting students and faculty and discussing curricula and career interests. CALS Student Interns from several departments in the College, have been instrumental in coordinating this program. "Spend A Day At State" has helped convince many prospective students that NCSU is where they want to pursue their studies.

Our "Accepting the Challenge" videotape has been provided to numerous schools and groups around the State. In addition to this overview of the academic and extracurricular program in CALS, our office has developed three new brochures, i.e., one that details the responsibilities of students and faculty relative to academic advising and two that orient student and business / industry users to our Career Development and Placement Office.

Renewed emphasis has been placed on the quality of the undergraduate experience at NCSU.

Action taken by our Courses and Curricula Committee during the year includes: Approval of 21 new courses; 20 courses reviewed or revised, and 15 courses dropped. The following new curricula were considered: Biological Sciences Business Management, General Horticulture, and Medical Technology. The Agricultural Business Management and Medical Technology curricula were revised and further action was taken toward phasing out the Pest Management curriculum in the near future. Revision of the CALS Honors Program, departmental use of the Senior Seminar, the CALS Humanities and Social Sciences list, proposed changes in math requirements and residence requirements for Zoology, and an increase in the Agricultural Institute graduation hours are among many of the matters discussed by the Committee in 1989.

The Thomas Jefferson Scholars Program completed its fourth year with 31 students in double-degree programs in agriculture and life sciences and the humanities. Becton Dickinson & Company in the Research Triangle Park provided the program with a $75,000 grant for the next five years.

During July, CALS, in cooperation with the North Carolina Biotechnology Center and the State Department of Public Instruction, conducted a one-week workshop for 20 agriscience teachers. The week was devoted to visitations with CALS' faculty and discussion on improvement of course materials used in high school vocational agriculture programs in the sciences of agriculture.

New activities and programs that complement current efforts are planned to enhance the academic success of African-American students. While several academic and health career activities and a workshop on time management were conducted with the assistance of the African-American Science and Health Society, implementation of additional programs that include tutorials, workshops on study and test-taking skills and an awards program occurred during the spring semester 1989. All CALS undergraduate African-American students were invited to participate in an Academic Achievement Seminar Series.

The CALS' Office of Academic Affairs sponsored the first annual CALS African-American Undergraduate Awards Reception and Program on April 21 to recognize students' academic accomplishments. Ninety-four persons attended, including students, administrators, faculty, staff and parents.

CALS continued its participation in the African-American Banquet and African-American Visitation Day. We were also involved in numerous Career Days throughout the year and in University Day activities again this year.

On February 17 and 18, 1989, a workshop was held on campus for 57 high school science teachers. The program was designed to establish closer working relationships and to enable them to develop better understanding of our College. The N. C. Agricultural Foundation provided funds for the activity. Teachers were provided lectures, seminars, field trips and "hands-on" experience with plants and other material suitable for use in their high school classes / labs. Also, they were provided with science-based publications and other material to assist them with their teaching responsibilities. On March 31, 1989, a seminar was held at the Western North Carolina Research and Extension Center, Fletcher, North Carolina, for high school science and vocational agriculture teachers. Research faculty stationed at Fletcher presented an overview of their research. Both of these efforts were designed to highlight opportunities in CALS for young people interested in applications of agriculture and life sciences.

"Spend A Day At State" has helped convince many prospective students that NCSU is where they want to pursue their studies.

Our third annual Graduate Student Professional Development Workshop was held October 16-18 at Quail Roost Conference Center: thirty-seven doctoral students heard from professionals on topics including ethics, science and the media, personnel management, preparation for employment and enhancing professionalism. This Workshop provides a dimension to the education of these students that is truly unique and most beneficial—personally and professionally. A special thanks to the Agricultural Foundation for making this possible.

Enrollment in the Agricultural Institute was 255 for the fall semester, 1989. Student recruiting still remains high priority since the shortage of graduates is acute in certain areas of agriculture. To that end, a Recruitment Committee has been formed and will focus its attention on increasing enrollment in certain curricula in the Institute. A Course Review and Curriculum Committee has also been created to evaluate courses and curricula currently offered in the Agricultural Institute program. A total of 74 students graduated from the Institute in 1989. Employment opportunities were excellent, and we continue to have more positions available than graduates.

We in Academic Affairs particularly appreciate the cooperation and dedication of all those who participate in and support our programs. The land-grant tradition of excellence in teaching, research and extension is our most important strength.

—James L. Oblinger, Director

Agricultural Extension Service

THE North Carolina Agricultural Extension Service prepared for a new decade by continuing or developing needs-based programs, conducting applied research, and training personnel and lay leaders to meet the challenges of the 90's.

The master plan for 1989 was "Pathways," a blueprint to help meet critical issues identified by the state's Advisory Leadership System. To meet the aims of the Pathways Plan, agricultural education activities focused on improving the profitability and sustainability of agriculture, maintaining environmental quality, and enhancing awareness of global agriculture.

Profitability and sustainability of agriculture called for wise use of production inputs, conservation of natural resources, and exploration of alternative agricultural opportunities. In 1989, agricultural production became more efficient as a record number of farmers used soil tests, plant tissue analysis and feed and fertilizer analyses. Over 2,000 growers of livestock and crops followed integrated pest management (IPM) recommendations to reduce use or enhance the effectiveness of pesticides.

P. E. Dew

Examples of improved natural resource utilization abound. Fifty-one poultry farmers made use of more energy-efficient lighting; 34 farmers grew strawberries on black plastic, while feed grain and soybean growers reduced soil erosion over 1.5 percent through improved soil management. Over 400 farmers improved forage use and reproductive performance of cattle. Poultry and swine growers learned about the nutrient value of manure and new methods for recovery and utilization of manure and dead animals.

Marketing was improved when 20 small fruit growers installed frost / freeze irrigation systems. Peanut growers increased market value by $5 million by using a new full-scrape technique to determine peanut maturity. By adapting new varieties, improving pest management practices, and installing four produce cooling systems, tomato growers reduced culls by 10 percent. Small and conventional farmers increased farm revenue by up to $1,000 per acre by growing alternative crops or livestock.

Extension audiences and the consuming public are keenly aware of the environmental impacts of agriculture. In 1989 farmers reduced use of pesticides through improved scouting techniques, revised insect, weed and disease thresholds, and improved pesticide application procedures. In two years, farmers reduced applications of nitrogen by 4 percent, phosphorus by 9 percent, and potassium by 3 percent. Some farmers are grazing cattle on grass forage which has been nutritionally improved by using swine and poultry waste as fertilizer.

Increasingly, the sustainability and profitability of agriculture will depend on effective leadership and an awareness of the global nature of North Carolina and U.S. agriculture. To this end, the North Carolina Agricultural Extension Service conducted a staff development program for 36 Extension agents, specialists and administrators during 1989. The program,

North Carolina Agriculture in the World, provided intensive training in international economic and trade policies, production and research systems, and farmer educational programs in other countries. It included a two-week study tour of Western Europe. Extension personnel will integrate their new information into current educational programs and develop new programs.

In another special program, agricultural specialists provided leadership training to 105 tobacco farmers and 18 tobacco farm couples.

Following the "Pathways" blueprint, extension programs in natural resources and community and rural development focused on three major issues: water quality and waste management, economic diversification and development, and leadership development.

To meet the aims of the Pathways Plan, agricultural education activities focused on improving the profitability and sustainability of agriculture, maintaining environmental quality, and enhancing awareness of global agriculture.

While many well-established programs continued, several new ones were developed. In responding to solid waste disposal problems, the North Carolina Agricultural Extension Service has developed a new Waste Management Institute which will provide 50 agents with a broad understanding of waste management issues for use in developing county programs. In 1989, Extension participated in solid waste management programs in over 50 counties, providing leadership for recycling days, programs on household hazardous waste, and recycling centers.

Thirty counties are participating in a ground water education / well testing program which will analyze water samples from 9,000 wells for nitrate, chloride, conductivity, and pH. A survey at each well enables Extension to identify possible sources of contamination. Initial results indicate that 2 to 3 percent of the wells tested have nitrate levels above the safe drinking water level. Results are being used as a basis for educational programs on maintaining or improving ground water quality.

Extension assisted several counties with the development of public policy related to water and waste management issues. Federal funding allowed the development of water quality demonstration projects in Duplin, Sampson, and Wayne Counties. These projects, conducted in cooperation with six other governmental agencies, determine the impact of better agricultural management practices on surface and ground water quality.

Changes in state legislation put new emphasis on a statewide educational program on minimizing erosion and sedimentation from forestry practices.

A successful continuing program on water and waste management targets farmers, the food processing industry, and county and municipal officials. The number of waste samples analyzed for use as fertilizers for land application increased 16 percent. In a joint effort with the Soil Conservation Service, extension provided in-service training for 385 agents, conservationists and technicians.

Economic diversification and development programs focused on small and home-based business education, new agricultural opportunities, and increasing income based on forestry and natural resources. As a result, over 2,000 landowners received information on developing wildlife lease agreements. Pine straw production increased, with 35 new landowners and over 175,000 acres now estimated to be producing straw. Extension provided support for the formation of the NC Pine Needle Association to expand markets and improve product quality.

The development and implementation of a microcomputer program in quality control by three veneer and plywood manufacturers resulted in annual savings of over $450,000.

In 1989, hybrid striped bass were commercially harvested for the first time, and trout and catfish production continued to increase with support from Extension.

Strategic planning is an important first step for revitalization of rural counties and communities. Extension was involved in strategic planning in over 20 counties this year. Regular meetings for elected officials were started by the area specialized economic development agent in Montgomery, Anson and Richmond Counties and have been well received by officials.

Following "Pathways" guidelines, home economists spearheaded innovative programs dealing with contemporary issues. Across North Carolina 1200 homes have been tested to determine levels of radon gas. Follow-up assistance will be provided to families whose homes have higher-than-normal radon test results.

Two computer programs were developed for home economists. The MOISTURE program analyzes home moisture problems and recommends solutions at three levels: easy / low cost; difficult / moderate costs; and difficult / high cost. The HOMECARE program provides Extension Agents with specific care instructions, product uses, and sources for over 500 spot and stain problems that occur in or around the home.

Strategic planning is an important first step for revitalization of rural counties and communities.

A pilot study in seven counties found that attendance at a meeting was the most effective method for persuading people to adopt recommended practices for laundering pesticide-soiled garments.

The Extension Service's strong program on nutrition, diet and health pioneered several new efforts in 1989. Adults in one community tested a computerized dietary analysis program for cholesterol. The Extension Food and Nutrition Department used the CALS trailer to visit 30 counties as part of a statewide screening of blood cholesterol levels and diet and heart disease education. The 4,851 participants were invited to follow-up activities which included individual computerized diet analyses and consultation, lunch and learn programs, and CVD and lifestyle programs.

The Rural Community Laboratory in Johnston County completed its first year with the establishment of a research project office and the development of several educational materials. The project has been funded for a second year.

In December, cooperative agreements were signed by Extension and the N.C. Department of Health (WIC) and N.C. Department of Human Resources. This will promote closer cooperation between agency personnel in 47 counties as they try to reach young pregnant women and families with young children for nutritional information.

Elder Care in North Carolina received special attention in 1989. One county's pilot project on training caregivers may serve as the prototype for a state-wide effort. Harnett County called together professionals from 16 agencies, and developed a curriculum for training family caregivers. The program has expanded to eight additional counties. Funding is being sought to offer interagency training statewide.

Economic wellbeing for families demanded innovative educational programs. About 1,800 people attended educational programs on legal issues in estate planning, small businesses, working with a lawyer, divorce and retirement planning. In addition, 225 extension agents were trained to

organize educational programs involving legal issues, such as small businesses, legal liabilities for volunteer adult sitters, children and the law, and consumer credit law.

Extension cooperated with other agencies in the development of a multimedia, interagency program to encourage individuals and families to find reliable information in making decisions about increasing family income .

Extension's 4-H youth program attracted an increasing number of young people. During the year, 193,657 youth participated in 502,347 learning experiences, ranging from the lamb project to space camp. Delivering educational material through 4-H school enrichment programs and after-school programs allowed Extension to reach new audiences. Over 83,000 young people were involved in such programs last year.

Economic wellbeing for families demanded innovative educational programs.

The wide variety of learning experiences was made possible by 28,399 volunteer leaders. Over 72,000 youth participated in Animal Science projects; 71,000 youth participated in environmental field days and water quality special interest programs. Personal development, consumer education, nutrition, and clothing and textiles were just a few on the project areas selected by 70,800 youth in the area of Food, Nutrition and Family Resources.

Extension created a Youth at Risk task force in 1989 to develop programs that combat life-threatening and negative behaviors in youth. Investments will be made in programs to overcome low self-esteem, provide positive interactions with peers and parents, develop community pride and promote good citizenship.

In 1989 North Carolina 4-H officials launched a 5-year, $3-million fund-raising campaign to expand and improve 4-H programs across the state. 4-H members, leaders and supporters in the state's 100 counties have already pledged $906,000.

Keeping extension professionals and volunteer leaders up-to-date on current issues calls for an intensive staff development program. In addition to the North Carolina Agricultural in the World and the special training in waste management, Extension offers an Executive Development Institute, orientation training for new agents, and in-service training for all agents. These exemplary programs have captured the attention of State Extension Services across the country.

Keeping the North Carolina Agricultural Extension Service's programs relevant in a new decade will call for an understanding of issues, command of the newest technology and a link to the latest research. The Pathways plan led to issues-based programming. Extension will begin developing a new long-range plan in 1990. Two task forces have already begun work.

—Paul E. Dew, Interim Director

Agricultural Research Service

THE North Carolina Agricultural Research Service extends its experiments across the state through 15 Outlying Research Stations shared with the North Carolina Department of Agriculture and 10 University Research Units. These facilities allow our scientists to conduct research under a variety of soil, climate and altitude conditions and to target projects to meet local needs. Almost every crop or animal commercially produced in the state can be found at one or more of these sites.

On campus, other special facilities meet the needs of laboratory-oriented research. Examples include the Phytotron, Electron Microscope Center, Small Animal Facilities, Protein Sequencing Laboratory, and the Soil Analysis Laboratory. The cost of equipping and operating such centers is too great for any one department to bear, and thus they function as shared operations.

Both the off-campus and on-campus units are essential to a large number of NCARS research projects and often put our faculty, students and staff in a unique position to solve critical problems facing science and the state. Rising costs and growing needs for personnel, equipment and maintenance make continued operation of all of these units a real challenge.

R. J. Kuhr

During 1989, research in the Department of Poultry Science revealed that when certain enzymes are added to barley or soybean meal as part of turkey and broiler diets, the nutritive value and feed conversion rate may be improved significantly, thus reducing costs. Increasing the daylength for tom turkeys also enhanced feed conversion rates and reduced abdominal fat. The use of low intensity incandescent light, rather than daylight, in conjunction with an eight-hour photoperiod during the rearing period has been found to improve both rate of egg production and fertility in broiler parent stock. Finally, a bacterium capable of degrading feathers was found to be present in a poultry waste anaerobic digester. This discovery could lead to the production of a chicken feed supplement from feathers.

The conversion of waste material into useful products has also been the focus of researchers in the Department of Biological and Agricultural Engineering. An anaerobic digester for treating livestock waste has been developed which produces biogas containing 62 to 74 percent methane. This gas can be used to produce a dependable on-farm energy source at a very reasonable cost. Distribution of poultry and livestock manure on land continues to grow in importance as these animal enterprises expand in the state. Research by engineers is aimed at application of the proper amount of nutrients to accomplish maximum plant growth and minimum ground water contamination. Poultry litter is also being examined for possible use in composting for greenhouse and nursery operations.

The disposition of municipal waste is also a growing problem as more and more of North Carolina landfills reach capacity. If the glass, metal and plastic is removed for recycling, the remaining landfill material is high in organic matter. NCARS soil scientists are looking at the possibility of using this material in a compost for greenhouse vegetables as well as a fertilizer for

field crops and nursery plants. Other soil scientists working with the Corps of Engineers have converted a disposal site for dredged material into a very successful tidal marsh. Meanwhile, scientists in Wood and Paper Science have discovered a process to improve chemical bleaching of pulpwood which decreases the amount of chemicals used by 29 percent while reducing the release of harmful effluents by as much as 45 percent.

Pesticides are another group of chemicals that command the attention of many NCARS faculty members. Toxicologists have demonstrated that tobacco budworm resistance to methyl parathion is due to a more rapid degradation and slower activation of the toxicant. Insecticide resistance in the Colorado potato beetle is threatening the commercial viability of potato production in much of the eastern United States, including North Carolina. Entomologists have devised a simple, safe and effective bioassay procedure for the early detection of beetle resistance before it results in crop failure. The procedure includes selection of appropriate insecticides to delay or completely avoid resistance build up.

. . . soil scientists working with the Corps of Engineers have converted a disposal site for dredged material into a very successful tidal marsh.

Stem canker in potatoes is usually controlled with chemical fungicides. Plant pathologists have found a natural biological control agent, a fungus, which can be applied to potato seed pieces at planting to provide protection against the canker-causing fungus. The "good" fungus may also be useful in controlling diseases of other crops. Another method of acquiring control of plant disease organisms is through the development of resistant varieties. This is the approach used by tobacco breeders in the Crop Science Department to yield several breeding lines, both flue-cured and burley, which are highly resistant to blue mold, a devastating disease during wet, cool years. The same approach was taken by breeders in Horticultural Science, working with plant pathologists, to produce the "Fred Cochran" azalea that is not only tolerant of root rot disease, but is also cold hardy and resists stem splitting and winter leaf kill.

Another procedure practiced by pest control specialists is to study the biology of the pest and host in order to find a "mismatch." In the case of soybean cyst nematode on soybeans, nematologists in the Department of Plant Pathology have demonstrated that the pests are intolerant of midsummer temperatures and have a high rate of reproduction in fall. Thus, by planting in late June rather than mid May with a soybean cultivar that matures by October 1 rather than late October through mid November, a significant decrease in nematode damage can be realized.

Biotechnology approaches to pest control include the insertion of genes into crop plants which results in the production of "internal" toxins. An example is a genetically engineered tobacco line expressing a low level of bacterial insecticide. When entomologists used this line in cooperation with natural predators and parasites, a very satisfactory level of insect pest control resulted. In laboratory tests, where the toxin was placed only on plant parts especially vulnerable to insect attack, it was found that the pest caterpillars tended to avoid the "treated" tissues and fed mostly on older leaves that were less important to crop yield.

Biotechnologists in the Department of Genetics are exploring ways to express genes only in certain parts of the plant. To date they have been successful in cloning a collection of genes that are expressed specifically in tobacco roots. The same scientists are attempting to identify, isolate and transfer single agronomically important crop genes which could then be moved from species to species.

Forestry biotechnologists are using gene transfer techniques developed for crop plants to greatly speed up the process of tree improvement, especially for loblolly pine. In the Department of Animal Science, genetic engineering experiments have resulted in the production of mice which appear to be devoid of fat, a discovery which could serve as a model for the growth of lean pigs. When mice embryos were transferred into the uterus of a large body size strain, postnatal growth rates were higher than when embryos were placed in the uterus of small body size mice. These results indicate the importance of prenatal maternal influence on animal growth and development.

Public acceptance of biotechnology discoveries, such as those discussed above, will ultimately determine their use. A study in the Department of Sociology, Anthropology and Social Work showed that consumer and farmer awareness of biotechnology is rather low at this time. Nevertheless, most respondents agreed that scientists should learn how to use genetic engineering and that the potential benefits of biotechnology are greater than possible risks. Most people questioned were in favor of many applications related to human health and plant agriculture. However, consumers thought the animal-related applications, such as bovine somatotropin, were not very desirable.

. . . in 1987 North Carolina agriculture, food, tobacco, textiles and forestry industries accounted for 34 percent of all state income and 29 percent of the state's employment.

How large is the agribusiness sector in North Carolina? Studies in the Department of Economics and Business revealed that in 1987 North Carolina agriculture, food, tobacco, textiles and forestry industries accounted for 34 percent of all state income and 29 percent of the state's employment. Furthermore, although the employment percentage has steadily declined in recent years, the agribusiness share of North Carolina incomes was actually higher in 1987 than 1982.

There are many, many more examples of progress made by the North Carolina Agricultural Research Service scientists in 1989. Their research projects continue to focus on some of the major issues facing our society today. North Carolina will be in the best position to address the last decade of the 1900's if it has a strong research base to deal with all manner of problems that will surely arise.

—Ronald J. Kuhr, Director

New Department Head Appointments

Animal Science

Dr. Leonard S. Bull has been appointed head of the Department of Animal Science, replacing Charles A. Lassiter who headed the Department since 1976. Bull, a native of Massachusetts, earned his doctorate in 1969 at Cornell University with an emphasis on animal nutrition. His previous appointments include eight years at the University of Vermont as chairman of Animal Science, and faculty appointments at the University of Maryland, the University of Kentucky, and the University of Maine.

Leonard S. Bull

Toxicology

The NSCU Board of Trustees approved creation of a Department of Toxicology effective July 1. Dr. Ernest Hodgson, William Neal Reynolds professor of toxicology, will head the new department which has seven faculty members and 19 graduate students. Creation of the Toxicology Department is a response to increasing public interest and concern about issues related to toxic substances and how these substances act in the environment and in contact with humans and other animals. "The need for more graduates in toxicology is critical as our society faces this important environmental challenge," said Dean Durward F. Bateman. The Department's research program will provide the information that policymakers need to make informed decisions regarding chemicals and other potentially harmful substances.

Ernest Hodgson

Poultry Science

Dr. Gerald B. Havenstein has been appointed chairman of the Department of Poultry Science effective July 1. Former head of Poultry Science at Ohio State University, Haverstein takes over a department with 24 faculty members which supports North Carolina's largest agricultural industry. A native of Kansas, Haverstein earned his doctorate at the University of Wisconsin in 1966. He succeeds Dr. James Marion who has become dean at Auburn University.

Gerald B. Havenstein

Crop Science

Dr. Johnny C. Wynne, NCSU alumnus and member of the faculty since 1968, has been named head of Crop Science effective April 1. Wynne has gained international recognition for his work as head of the Peanut Breeding project since 1974. This research effort has produced many of currently grown high-yielding and pest-resistant varieties. Wynne earned all of his degrees from NCSU, culminating with his Ph.D. in 1974. In assuming his new responsibilities, Wynne recognized the future challenge of "addressing major issues such as clean water, waste disposal, conservation of natural resources, chemical residues and sustainable agriculture as these issues relate to crop science."

Johnny C. Wynne

James D. Harper

Entomology

Dr. James D. Harper has been named to succeed Ronald J. Kuhr as head of the Department of Entomology. Dr. Kuhr has become Director of the North Carolina Agricultural Research Service and Associate Dean of CALS. Harper has been a member of the Auburn University faculty since 1969. He received his doctorate in insect pathology from Oregon State University in 1969. An expert in biological control and economic entomology, Harper has extensive international experience.

Eugene J. Kamprath

Soil Science

Dr. Eugene J. Kamprath, William Neal Reynolds Professor in the Department of Soil Science has been named head of the department. An authority on soil fertility and plant nutrition who has been honored as a Fellow of the American Society of Agronomy, Kamprath has been on the faculty since 1955. He earned his doctorate from NCSU. He replaces Dr. Robert H. Miller who has been appointed Dean for Natural Resources at the University of Rhode Island.

Billy E. Caldwell

Changes in Extension Administration

Dr. Billy E. Caldwell has become Assistant Director of the Agricultural Extension Service. As State Leader, Caldwell will take responsibility for the programs in Agriculture, Natural Resouces, and Community Development. Effective February 1, Dr. Michael Levi, formerly specialist-in-charge forest resources, has been appointed Associate State Leader for Community Resource Development and Natural Resources. Completing the leadership team is Dr. Roger G. Crickenberger, who has been appointed Associate State program leader for Agricultural Programs effective May 15. Crickenberger was previously specialist in charge of animal husbandry. He has been with Extension since 1977.

Michael Levi

Roger G. Crickenberger

Hanson to TropSoils

Dr. Roger G. Hanson, a veteran of international agriculture programs at the University of Missouri, has been named director of the Management Entity for TropSoils, the Soil Management Collaborative Research Support Program. He succeeds Dr. Charles B. McCants, who retired May 31.

Hanson believes TropSoils "can make a real contribution" toward stabilizing agriculture and conserving tropical forests in developing countries. TropSoils, supported primarily by the US Agency for International Development, conducts work in Peru, led by NCSU; in Brazil, led by Cornell University; in Indonesia, led by the University of Hawaii; and in Niger and Mali, led by Texas A&M University.

Roger C. Hanson

Clemson President Named 1989 Recipient

Max Lennon

A North Carolinian who now heads one of the nation's most respected land-grant universities has received the 1989 Distinguished Alumnus Award from the College of Agriculture and Life Sciences. Dr. Max Lennon, named president of Clemson University in 1986, is the sixteenth recipient of this award. The selection, based on a vote of the college faculty, was announced by Dean Durward F. Bateman, who praised Lennon for his "outstanding leadership."

Lennon earned his B. S. degree in 1962 and his Ph.D. in 1970 from the Department of Animal Science. The Columbus County native owned and operated a diversified crop and livestock farm near Evergreen from 1962 to 1966.

Lennon served on the faculty of Texas Tech University where he held positions as chairman of the Department of Animal Science, director of research for the College of Agriculture, and Associate Dean. From 1980 until 1983, Lennon served as dean of the College of Agriculture and director of the Experiment Station at the University of Missouri. In 1983 he moved to Ohio State University as vice president for agricultural administration and executive dean for agriculture, home economics and natural resources.

In making the award, Dean Bateman called Lennon a "scholar of note and an administrator of distinction."

Financial Report

Agricultural Extension Service

State fiscal year from July 1, 1988 to June 30, 1989

Receipts from Non-Federal Funds	
State appropriations	$25,803,052
Miscellaneous receipts, overhead receipts, sale of equipment	31,699
Foundations, gifts, grants, and contracts	5,932,807
Total non-federal fund receipts	$31,767,558
Expenditures by Classification	
Personal services and benefits	$27,439,874
Non-salary program support	4,327,684
Total non-federal fund expenditures	$31,767,558

Federal fiscal year from October 1, 1988 to September 30, 1989

Receipts from Federal Funds	
Smith-Lever Regular	$9,254,065
Rural Development	75,432
Rural and Urban 4-H	308,759
Farm Safety	18,792
Expanded Food and Nutrition Education Program	2,744,042
Pest Management	53,345
1862 Part-Time Farmers	41,595
Pesticide Impact Assessment	125,619
Renewable Resource Extension Act	175,432
Indian Affairs	58,546
Federal grants and contracts	550,633
Total federal fund receipts	$13,613,615
Expenditures by Classification	
Personal Services and Benefits	$7,630,774
Non-salary program suppport	5,982,841
Total federal fund expenditures	$13,613,615

Agricultural Research Service

State fiscal year from July 1, 1988 to June 30, 1989

Receipts from Nonfederal Funds	
State appropriations	$33,448.312
State appropriations for biotechnology	900,069
Miscellaneous receipts, overhead receipts, miscellaneous perquisites, sale of equipment	1,518,806
Foundations, gifts, grants, and contracts	7,633,669
Total Non-Federal Fund Receipts	$43,500,856
Expenditures by Classification	
Personal services and benefits	$34,344,555
Non-salary program support	9,166,301
Total non-federal fund expenditures	$43,500,856

Federal fiscal year from October 1, 1988 to September 30, 1989

Receipts from Federal Funds	
Hatch	$4,464,299
Regional Research	1,039,660
Animal Health and Disease Research	113,320
McIntire-Stennis	576,142
Federal grants and contracts	8,999,347
Total federal fund receipts	$15,192,768
Expenditures by Classification	
Personal services and benefits	$8,456,745
Non-salary program support	6,736,023
Total federal fund expenditures	$15,192,768

Academic Affairs

State fiscal year from July 1, 1988 to June 30, 1989

Receipts by fund source	
State appropriations	$12,657,584
Miscellaneous receipts	37,806
Foundations, gifts, non-federal grants and contracts	125,663
Federal grants and contracts	71,467
Total receipts	$12,892,520
Expenditures by Classification	
Personal services and benefits	$11,583,251
Non-salary program support	1,309,269
Total expenditures	$12,892,520

ADMINISTRATION... Durward F. Bateman, Vice President of the Southern Association of Agricultural Scientists. . . George J. Kriz, Outstanding Service Award from the Turfgrass Council of North Carolina... J. L. Oblinger, Meritorious Service Award, African-American Science and Health Society; Appointment to Joint Council on Food and Agricultural Sciences; President Elect Council for Agricultural Science and Technology... J. F. Ort, Meritorious Service Award, African-American Science and Health Society.

ADULT AND COMMUNITY COLLEGE EDUCATION... E. J. Boone, Epsilon Sigma Phi Distinguished Service Ruby Award. . . G. L. Carter, Highest honors bestowed by Martha Organization (Marttaliitto ry) on September 30, 1989, for consulting work in developing home economics extension programs for young families on a national basis for Finland during 1979-1985... R. T. Liles, Regional Distinguished Mid-Career Award, Epsilon Sigma Phi... J. G. Richardson, Distinguished Service Award, The National Association of Counties.

AGRICULTURAL COMMUNICATIONS... T. W. Knecht, Co-recipient Blue Ribbon Awards for Educational Aids Competition, American Society of Agricultural Engineers.

ANIMAL SCIENCE... L. S. Bull, President, American Registry of Professional Animal Scientists. . . R. W. Harvey, Secretary-Treasurer, Southern Section of American Society of Animal Science... J. E. Legates, Award of Honor, American Dairy Science Association . . . C. L. Markert, Third Annual Hirai Award, Electrophoresis Society of Japan; Wearn lecturer at Davidson College. . . R. L. McCraw, Award of Appreciation-Executive Director 1986-1989, Beef Improvement Federation ...R. A. Mowrey, Leadership Award, National Horse Judging Coaches Association; National Horse Industry Award... K. R. Pond, Outstanding Teacher Award, North Carolina State University... J. W. Spears, Outstanding Young Animal Scientist Award, Southern Section of American Society of Animal Science. . . L. W. Whitlow, Outstanding Extension Service Award, North Carolina State University.

BIOLOGICAL AND AGRICULTURAL ENGINEERING... C. G. Bowers, Jr., Outstanding Teacher Award, North Carolina State University. . . L. B. Driggers, Fellow, American Society of Agricultural Engineers... A. L. Lanier, Blue Ribbon Award for Educational Aids Competition American Society of Agricultural Engineers. . . W. F. McClure, Elected 1990 President of the Council for Near Infrared Reflectance Spectroscopy... R. W. Skaggs, Co-recipient of Blue Ribbon Award, American Society of Agricultural Engineers... M. D. Smolen, Blue Ribbon Awards for Educational Aids Competition American Society of Agricultural Engineers. . . R. E. Sneed, Blue Ribbon Awards for two publications, American Society of Agricultural Engineers. . . C. W. Suggs, Service Award, American Society of Agricultural Engineers.

CROP SCIENCE. . . C. E. Collins, Honorary Seedsman's Award, North Carolina Seedsmen's Association . . . R. L. Davis, Outstanding Leadership Award to North Carolina Tobacco Farmers, Tobacco Association of North Carolina... M. M. Goodman, Fellow, American Society of Agronomy... R. E. Jarrett, Outstanding Service Award, North Carolina Crop Improvement Association. . . G. E. Martin, Honorary Seedsman's Award, North Carolina Seedsmen's Association . . . G. F. Peedin, Philip Morris Professor... R. F. Wilson, Distinguished Service Award, United State Department of Agriculture; Award of Merit, North Carolina Chapter of Gamma Sigma Delta... A. D. Worsham, Fellow, Weed Science Society of America; President, Weed Science Society of North Carolina... J. C. Wynne, President, American Peanut and Research Education Society. . . A. C. York, Distinguished Service Award, Weed Science Society of North Carolina.

ECONOMICS AND BUSINESS... E. C. Pasour, Jr. Leavey Award for Excellence in Private Enterprise Education.

ENTOMOLOGY . . . M. H. Farrier received the 1st NCSU Libraries Faculty Award... G. G. Kennedy received the L. M. Ware Research Award for Outstanding Research in Horticulture, Southern Region American Society of Horticultural Science.

FOOD SCIENCE. . . P. M. Foegeding, Sigma Xi Research Award, N. C. State University... A. P. Hansen, Outstanding Teaching Award, Pakistan Dairy Association, June, 1989... T. R. Klaenhammer, Nordica International Research Award, American Cultured Dairy Products Institute, March, 1989; Samuel Cate Prescott Research Award, Institute of Food Technologists.

COLLEGE OF FOREST RESOURCES . . . D. A. Adams, Outstanding Teacher, North Carolina State University... C. B. Davey, Alumni Distinguished Professor, North Carolina State University. . . H. A. Devine, President, Western North Carolina Geographic Information Systems Users Group... J. S. Gratzl, Honorary Professor, Laboratory on Cellulose and Lignocellulose Chemistry (LCLC) at Guangzhou Institute of Chemistry-Academia Sinica... L. H. Harkins, Forestry Recognition Award for Extension Staff, International Paper Company . . . K. C. Joyner, Certificate of Appreciation, U.S. Department of Agriculture. . . J. G. Laarman, 1988-89 Fulbright Fellowship for Research in Costa Rica . . . S. E.

McKeand, Tony Squillace Award, Southern Forest Tree Improvement Conference... D. M. O'Malley, Poster Prize, Southern Forest Tree Improvement Conference... P. S. Rea, Fellow Award, North Carolina Recreation and Park Society; Alumni Award, Department of Recreation and Park Administration, Indiana University.

GENETICS... W. H. McKenzie, Educator of the Year Award, Westmar College, LeMars, Iowa... C. W. Stuber, Outstanding Scientist of the Year, U.S.D.A., Agricultural Research Service ... T. H. Emigh, NCSU Outstanding Teaching Award.

HOME ECONOMICS ... W. S. Hammett, Fellow, International Furnishings and Design Association... G. M. Herman, President, North Carolina XI Chapter, Epsilon Sigma Phi... C. E. Johnson, National Kellogg Leadership Program Fellow; Outstanding Recognition in Home Economics from the Coalition for Black Development in Home Economics, AHEA; President-Elect of the N. C. Family Life Council. . . M. R. Johnson, Outstanding Extension Award; Extension Leadership Award. . . J. H. Lloyd, Chair, Consumer Education Committee, American Council on Consumer Interests; N. C. Coordinator, National Coalition for Consumer Education... C. A. Schwab, President-Elect, North Carolina Chapter of the National Committee for the Prevention of Child Abuse.

HORTICULTURAL SCIENCE... A. A. De Hertogh, Award for Agricultural Excellence from Carolinas-Virginia Chapter of National Agricultural Marketing Association; Certificate of Merit from Gamma Sigma Delta; Futura Award from Professional Plant Growers Association. . . P. R. Fantz, Teacher Fellow, National Association of Colleges and Teachers of Agriculture... R. G. Gardner, Research Friend of Extension Award from N.C. Agricultural Extension Service. . . R. G. Goldy, Cross-Commodity Publication Award, American Society for Horticultural Science... B. H. Lane, Outstanding Faculty Award from Agricultural Institute Club; Alumni Distinguished Professor Award by NCSU Alumni Association. . . R. A. Larson, Inducted into Society of American Florists' Hall of Fame... P. V. Nelson, Outstanding Graduate Educator Award, American Society for Horticultural Science ... K. B. Perry, 1988 Epsilon Sigma Phi Early Career Award for North Carolina... J. C. Raulston, Academy of Outstanding Teachers, NCSU; Gold Medal Award of The Men's Garden Clubs of America. . . T. C. Wehner, Sigma Xi Outstanding Young Scientist Research Award.

MICROBIOLOGY ... G. H. Elkan, Advisory Board, Center for Tropical Nitrogen Fixation, University of Hawaii.

PLANT PATHOLOGY... J. E. Bailey, Outstanding Extension Service Award ... T. B. Sutton, Lee M. Hutchens Award for outstanding contribution to research on fruit diseases.

POULTRY SCIENCE . . . T. A. Carter, George Hyatt, Jr. Scholarship Award; Poultry Science Association Pfizer Extension Award... P. B. Hamilton, Elected Fellow of the Poultry Science Association.

SOIL SCIENCE. . . S. W. Buol, International Soil Science Award, Soil Science Society of America. . . D. K. Cassel, Achievement Award, Soil Science Society of North Carolina; Award for Outstanding Contribution to Irrigation, North Carolina Irrigation Society... M. G. Cook, Fellow, American Society of Agronomy; Fellow, Soil and Water Conservation Society of America; Superior Service Award, North Carolina Chapter of the Soil and Water Conservation Society... C. K. Martin, Professional Service Award, North Carolina Chapter of the Soil and Water Conservation Society.

STATISTICS. . . C. E. Smith, National Academy of Science exchange scientist, Czechoslovak Academy of Sciences, Institute of Physiology... S. E. Spruill, Certificate of Appreciation, U. S. Forest Service.

TOXICOLOGY... E. Hodgson, Burdick and Jackson International Award in Pesticide Chemistry, American Chemical Society.

ZOOLOGY . . . R. L. Noble, Outstanding Service Award, Southeast Section, The Wildlife Society.

Teaching, Research, and Extension

Adult and Community College Education
BOONE, E. J., Prof., Head of Department
BERLAM, R. A., Adjunct Asst. Prof.
BLACK, C. D., Prof., Director of Ext.
CARTER, G. L., Prof.
COLIN, S. A. J., Jr., Asst. Prof.
DEW, P. E., Ext. Prof., Asst. Director of Ext.
FINGERET, A., Assoc. Prof.
FOUNTAIN, B. E., Jr., Visiting Lecturer
FULLER, E. H., Jr., Visiting Asst. Prof.
GLASS, J. C., Jr., Prof.
HOWELL, B. I., Adjunct Asst. Prof.
KENNEDY-SLOAN, J. R., Adjunct Asst. Prof.
KNOTT, E. S., Adjunct Asst. Prof.
LANIER, A. B., Visiting Assoc. Prof.
LILES, R. T., Assoc. Prof.
MEYER, P., Visiting Assoc. Prof.
MUSTIAN, R. D., Prof.
PLUMMER, R. J., Adjunct Asst. Prof.
RENDON, L. I., Assoc. Prof.
RICHARDSON, J. G., Assoc. Prof., Extension Specialist
SCOTT, R. W., Adjunct Prof.
SHEARON, R. W., Prof., Assoc. Department Head
TOLLEFSON, T. A., Assoc. Prof.
VANDERGRIFT, P. F., Adjunct Asst. Prof.
WATTS, B. G., Ext. Specialist—Educational Programs
WILSON, E. H., Adjunct Asst. Prof.
WYNN, P. H., Jr., Adjunct Asst. Prof.

Agricultural Communications

JENKINS, D. M., Prof., Head of Department
BAIRD, C. L., Teaching Tech. / Ext. Specialist
BOSTICK, G. W., Assoc. Prof. and Coord. Ed. Media
BROTHERTON, J.M., Ext. Specialist / News Editor
CALDWELL, D. F., Science Writer / Information Specialist
CAUDLE, N. C., Program Coord., TropSoils Communications
CHRISTENSEN, J. R., Senior News Editor
DEARMON, M. B., Media Production Editor
EDWARDS, S. R., Jr., News Editor (Radio)
GOSPER, J. M., News Editor (Home Economics)
GRAY, W. M., News Editor (TV)
GREGORY, R. B., Head, Visual Communications
KNECHT, T. W., Section Head, Publications
PADGETT, L. B., Publications Editor
REID, E., Asst. Prof., Teaching and Publications
RODGERS, J. G., Media Editor
TART, J. C., Senior Publications Editor
UPCHURCH, J. W., In Charge, Press, Radio, TV

Animal Science

BULL, L. S., Prof., Head of Department
ALLISON, B. C., Ext. Area Livestock Specialist
ARMSTRONG, J. D., Asst. Prof., Beef Cattle Reproductive Physiology
ASH, S. L., Visiting Asst. Prof., Nutrition
BARNETT, D. T., Lecturer, Equine
BRITT, J. H., Prof., Reproductive Physiology
BUTCHER, K. R., Prof., Dairy Records
CARUOLO, E. V., Prof., Animal Physiology
CLAEYS, M. C., Ext. Specialist, Youth
CLARE, D. A., Res. Assoc., Swine Diseases
CLAWSON, A. J., Prof., Swine Nutrition
CLAY, J. S., Ext. Specialist, Dairy Records
COFFEY,M.T., Assoc. Prof., Coordinator, Swine Husbandry Extension
CORNWELL, J. C., Assoc. Prof. and Undergraduate Teaching Coordinator, Equine
CROOM, W. J., Jr., Assoc. Prof., Ruminant Nutrition
DAVENPORT, D. G., Prof., Dairy Cattle Nutrition and Management
EISEN, E. J., William Neal Reynolds Prof., Animal Genetics
ESBENSHADE, K. L., Assoc. Prof., Grad. Adm., Swine Reproductive Mgmt.
FLOWERS, W. L., Asst. Prof., Swine Reproductive Physiology
GREGORY, G. M., Ext. Specialist, Bull Testing, Butner
GREGORY, J. H., Senior Ext. Area Livestock Specialist
HAMM, M. G., Teaching Tech., Promotion of Student Recruitment and Special Events
HARVEY, R. W., Prof., Beef Cattle Nutrition
HOLT, P. S., Ext. Specialist, DHIA
HUGHES, R. M., Ext. Swine Testing Specialist
JOHNSON, W. L., Prof., Ruminant Nutrition and International Programs
JONES, E. E., Prof., Biochemistry and Swine Nutrition
JONES, J. R., Prof., Swine Husbandry Extension
LECCE, J. G., William Neal Reynolds Prof., Swine Diseases and Management
LEGATES, J. E., William Neal Reynolds Prof. and Dean Emeritus, Animal Breeding
LICHTENWALNER, R. E., Assoc. Prof., Area Livestock Specialist
LUGINBUHL, J. M., Res. Assoc., Small Ruminant Research Project
MARKERT, C. L., Distinguished University Res. Prof., Animal Biotechnology
MARTIN, M. J., Res. Assoc., Animal Biotechnology
McCRAW, R. L., Assoc. Prof., Coordinator, Animal Husbandry Extension

McDANIEL, B. T., Prof., Animal Genetics
McDOWELL, R. E., Visiting Prof., Animal Genetics
MILLER, D. C., Ext. Specialist, Beef Cattle
MORROW, W. E. M., Asst. Prof., Swine Extension Veterinarian
MOWREY, R. A., JR., Assoc. Prof., Coordinator, Horse Husbandry Extension
PARKER, J. W., JR., Senior Ext. Area Swine Specialist
PETTERS, R. M., Assoc. Prof., Animal Biotechnology
POND, K. R., Assoc. Prof., Beef Cattle Nutrition
RAKES, A. H., Prof., Dairy Cattle Nutrition
RAMSEY, H. A., Prof., Dairy Cattle Nutrition
REED, M. L., Res. Assoc., Animal Biotechnology
ROBISON, O. W., Prof., Animal Genetics
SANCHEZ, M. D., Res. Assoc., Small Ruminant Research Project, Indonesia
SARGENT, F. D., Prof., Dairy Cattle Breeding, DHIA
SCHOENHERR, W. D., Asst. Prof., Swine Nutrition
SPEARS, J. W., Assoc. Prof., Beef Cattle Nutrition
STANISLAW, C. M., Prof., Swine Breeding
SWAIN, R. W., Ext. Area Swine Specialist
WASHBURN, S. P., Asst. Prof., Beef & Dairy Cattle Reproductive Physiology
WESEN, D. P., Prof., Coordinator, Dairy Husbandry Extension
WHITLOW, L. W., Assoc. Prof., Dairy Cattle Nutrition
WHITWORTH, U. G., Jr., Asst. Prof., Laboratory Animal Care
WILK, J. C., Prof., Dairy Cattle Breeding

Biochemistry

AGRIS, P. F., Professor, Head of Department, Structure and Function of Nucleic Acids and Proteins
ARMSTRONG, F. B., Univ. Professor, Enzymology and Protein Chemistry
CHEN, J., Res. Assoc., Autoimmune Antibodies and Antigens, Structure of snRNPs
GRACZ, H. S., Visiting Asst. Prof., Supervisior of Biotechnology 500 Mhz NMR Facility, Structure-Function Relationships in Small RNAs.
HARDIN, C. C., Asst. Prof., Structure-Function of Teleomeric DNA
HISAYASU, S., Res. Assoc., Molecular Biology of Ferritin
HORTON, H. R., William Neal Reynolds Professor, Enzyme Structure and Mechanisms, Disulfide Bond Formation
KAHN, J. S., Professor, Energy Coupling, Bioenergetics, Drug Adaptation
KNOPP, J. A., Assoc. Professor, Biophysical Chemistry
LIN, P., Res. Assoc. Molecular Biology of Ferritin
LONGMUIR, I. S., Professor, Gas Transport in Blood and Tissue
MARTIN, M. T., Visiting Prof., Lecturer
MAXWELL, E. S., Asst. Professor, Structure and Function of LMW RNAs
MILLER, W. L., Professor, Mechanism of Hormone Action
PALMER, S. S., Res. Assoc., Regulation of Follicle-Stimulating Hormone by Inhibin
SISLER, E. C., Professor, Plant Biochemistry and Plant Hormone Physiology
THEIL, E. C., Univ. Professor, Molecular Biology of Ferritin and mRNA
TOVE, S. B., William Neal Reynolds Professor Emeritus, Lipid Metabolism
TREADWELL, E. L., Adj. Assoc. Prof., Autoimmunity Research
WANG, Q., Res. Assoc., Molecular Biology of Ferritin

Biological and Agricultural Engineering

RUFF, J. H., Prof., Head of Department
ABRAMS, C. F. Jr., Prof., Biomechanics and Processing
BARKER, J. C., Prof., Agricultural Waste Management Systems
BAUGHMAN, G. R., Assoc. Prof., Environmental Engineering
BLUM, G. B. Jr., Prof., Structures
BOTTCHER, R. W., Asst. Prof., Environmental Systems
BOWEN, H. D., Prof., Biophysics and Automation
BOWERS, C. G. Jr., Assoc. Prof., Mechanics and Controls Engineering
BOYETTE, M. D., Ext. Specialist, Alternative Energy
BRICHFORD, S. L., Ext. Specialist, Water Quality
COFFEY, S. W., Ext. Specialist, Water Quality
DICKENS, J. W., Prof., Processing Engineering
DONAHUE, D. W., Visiting Instructor, Computer Technology
DRIGGERS, L. B., Ext. Prof., Farm Buildings
EVANS, R. O. Jr., Ext. Specialist, Water Management
HUFFMAN, R. L., Asst. Prof., Groundwater
HUMENIK, F. J., Prof. and Assoc. Dept. Head in Charge of Extension
HUMPHRIES, E. G., Prof., Mechanics and Machine Design
HUNT, J. N., Ext. Specialist, Energy Conservation
JIVIDEN, G. M., Adj. Asst. Prof., Cotton Mechanization
LANIER, A. L., Ext. Specialist, Energy Conservation
MCCLURE, W. F., Prof., Bioinstrumentation and Artificial Intelligence
MCLYMORE, R. L., Ext. Specialist, Farm Safety and 4-H
MOHAPATRA, S. C., Senior Res., Seed Biotech., Post-Harvest & Proc. Physiology
PARSONS, J. E., Asst. Prof., Water Resources Management
ROBERSON, G. T., Visiting Instructor, Power and Machinery
ROHRBACH, R. P., Prof., Process Engineering and Machine Design
RUBIN, A. R., Assoc. Prof., Water Supply and Management
SAFLEY, L. M. Jr., Prof., Agricultural Waste Management
SEYMOUR, S. K., Adj. Asst. Prof., Computer Instrumentation and Controls
SKAGGS, R. W., William Neal Reynolds Prof., Drainage and Agr. Water Mgmt.
SMOLEN, M. D., Visiting Assoc. Prof., Water Quality
SNEED, R. E., Prof., Irrigation and Drainage
SOWELL, R. S., Prof., Agricultural Systems Analysis
SPOONER, J., Visiting Instructor, Water Quality
STIKELEATHER, L. F., Prof., Mechanical, Biomechanical and Hort. Systems
SUGGS, C. W., Prof., Mechanics and Human Engineering
WESTERMAN, P. W., Prof., Environmental Quality Engineering

WHITAKER, T. B., Prof., Mechanics and Process Engineering
WILLITS, D. H., Prof., Environmental Control
YOUNG, J. H., Prof., Heat and Mass Transfer and Process Engineering

Botany

SENECA, E. D., Prof., Head of Department, Coastal Plant Ecology
ALLEN, G. C., Res. Assoc., Plant Molecular Genetics
ANDERSON, C. E., Prof., Plant Anatomy
BECKMANN, R. L., Assoc. Prof., Systematic Botany
BLUM, Udo, Prof., Physiological Ecology
BOOKER, F. L., Res. Assoc., Ecology
BOSS, W. F., Assoc. Prof., Plant Physiology
BOSTON, R. S., Asst. Prof., Plant Molecular Biology
BURKHOLDER, J. M., Asst. Prof., Physiological Ecology of Aquatic Plants
CHILTON, W. S., Visiting Prof., Natural Plants Products Chemistry
DICKEY, L. F., Res. Assoc., Plant Molecular Genetics
DOWNS, R. J., Botany & Hort. Sci., Director of Phytotron
DUBAY, D. T., Res. Assoc., Ecology
DUNNING, J. A., Res. Assoc., Plant Biology (USDA)
FALCONET, D. R., Visiting Scientist, Plant Molecular Biology
FITES, R. C., Prof., Plant Physiology
FRISTENSKY, B. W., Res. Assoc., Plant Molecular Genetics
GROSS, W. H., Res.Assoc., Plant Physiology
HARDIN, J. W., Prof., Systematic Botany and Curator of the Herbarium
HECK, W. W., Prof., Plant Physiology (USDA)
LYU, S. W., Visiting Scientist, Ecology
MICKLE, J. E., Asst. Prof., Paleobotany
MOTT, R. L., Prof., Plant Physiology
PATTEE, H. E., Prof., Plant Physiology (USDA)
STUCKY, J. M., Assoc., Prof., Taxonomy
THOMAS, J. F., Assoc., Prof., Plant Anatomy, Asst. Dir. of Phytotron
THOMPSON, W. F., Prof. Plant Molecular Genetics
TROYER, J. R., Prof., Plant Physiology
VAN DYKE, C. G., Prof., Mycology
WENTWORTH, T. R., Prof., Plant Community Ecology
WHITE, M. J., Res. Assoc., Plant Molecular Genetics
WITHERSPOON, A. M., Prof., Botany, Assoc. Provost, Phycology

Crop Science

WYNNE, J. C., Prof., Head of Department
ANDERSON, J. M., Assoc. Prof., Photosynthesis (USDA)
ANDERSON, J. R., Jr., Ext. Assoc. Prof., Corn
ANDERSON, W. F., Res. Asst., Peanut Breeding
BAALBAKI, R. Z., Res. Assoc., Seed Physiology
BAKER, M. W., Manager, N. C. Foundation Seed Producers, Inc.
BENNETT, S. C., Res. Asst., N. C. Crop Improvement Association
BOWMAN, D. T., Assoc. Prof., Variety Evaluation
BRUNEAU, A. H., Ext. Assoc. Prof., Turf
BURKEY, K. O., Asst. Prof., Photosynthesis (USDA)
BURNS, J. C., Prof., Forage Quality and Utilization (USDA)
BURTON, J. W., Prof., Soybean Breeding (USDA)
CALLAWAY, M. B., Res. Assoc., Corn Breeding
CARTER, T. E., Jr., Assoc. Prof., Soybean Breeding (USDA)
CHAMBLEE, D. S., Prof., Forage Ecology
COBLE, H. D., Prof., Weed Science—Soybeans, Peanuts, Cotton
COLLINS, C. E., Asst. Director, N. C. Crop Impr. Association
COLLINS, W. K., Ext. Prof., Assoc. Head & Specialist-In-Charge
CORBIN, F. T., Prof., Weed Physiology
DANEHOWER, D. A., Asst. Prof., Tobacco Chemistry
DANIEL, D. W., Ext. Agronomy Specialist, Forage Variety Eval.
DAVIS, R. L., Ext. Assoc. Prof., Burley Tobacco
DE LA TORRE, W., Res. Assoc., Photosynthesis (USDA)
DIPAOLA, J. M., Assoc. Prof., Teaching Coordinator
DUNPHY, E. J., Ext. Prof., Soybeans
FERGUSON, J. M., Ext. Asst. Prof., Seed Physiology
FIKE, W. T., Jr., Prof., Crop Management
FISCUS, E. L., Assoc. Prof., Crop Physiology (USDA)
FISHER, D. S., Asst. Prof., Forage Breeding (USDA)
FITZMAURICE, W. P., Res. Assoc., Tobacco Genetics
GOODMAN, M. M., WNR Prof., Corn Breeding
GREEN, J. T., Jr., Ext. Prof., Forages
GROSS, H. D., Prof. and Asst. Director, Int'l. Programs
GUFFY, R. D., Res. Assoc., Corn Breeding (USDA)
GURGIS, R. Y., Agronomist, Forages (USDA)
GUTHRIE, D. S., Ext. Specialist / Researcher, Cotton
HU, W. W., Res. Asst., Grass Improvement
HUBER, J. A., Res. Assoc., Photosynthesis
HUBER, S. C., Prof., Photosynthesis (USDA)
JARRETT, R. E., Ext. Assoc. Prof., Small Grains
KAY, S. H., Ext. Asst. Prof., Weed Science
KEYS, R. D., Assoc. Prof., Seed Physiology
KWANYUEN, P., Asst. Prof., Plant Physiology (USDA)
LEWIS, W. M., Ext. Prof., Weed Control—Corn and Turf
LINKER, H. M., Assoc. Prof., Extension IPM Coordinator
LONG, R. C., Prof., Tobacco Physiology
MARTIN, G. E., Jr., Crop Sci. Specialist, N. C. Crop Impr. Assoc.
MCLAUGHLIN, F. W., Ext. Prof., Director, N. C. Crop Impr. Assoc.
MILLER, J. E., Assoc. Prof., Air Quality (USDA)
MORELAND, D. E., Prof., Plant Physiology (USDA)
MUELLER, J. P., Ext. Prof., Forages
MURPHY, J. P., Assoc. Prof., Small Grain Breeding
PATTERSON, D. T., Adj. Prof., Weed Science
PATTERSON, R. P., Prof., Soybean Physiology
PEACOCK, C. H., Assoc. Prof., Turf Management
PEEDIN, G. F., Philip Morris Ext. Prof., Tobacco
PURSLEY, W. A., Res. Asst., Air Quality
REDINBAUGH, M. G., Asst. Prof., Tobacco (USDA)
REED, S. M., Asst. Prof., Tobacco (USDA)
ROBERTSON, D., Res. Assoc., Crop Molecular Biology
RUFTY, R. C., Assoc. Prof., Burley Tobacco Breeding

RUFTY, T. W., Jr., Assoc. Prof., Tobacco (USDA)
SASSCER, C. M., Researcher, Burley Tobacco Breeding
SELTMANN, H., Prof., Tobacco Physiology (USDA)
SHEW, B. B., Res. Assoc., Peanut Breeding
SISCO, P. H., Asst. Prof., Corn Breeding (USDA)
SISSON, V. A., Asst. Prof., Tobacco Genetics (USDA)
SMITH, W. D., Ext. Assoc. Prof., Tobacco
STALKER, H. T., Prof., Peanut Cytogenetics
SULLIVAN, G. A., Ext. Prof., Peanuts
TIMOTHY, D. H., Prof., Grass Improvement
WEBER, J. B., Prof., Weed Science—Fate of Pesticides
WEEKS, W. W., Prof., Tobacco Chemistry
WEISSINGER, A. K., Asst. Prof., Crop Molecular Biology
WELLS, R., Asst. Prof., Grain-Legume Physiology
WERNSMAN, E. A., WNR Prof., Tobacco Genetics
WILKERSON, G. G., Asst. Prof., Cropping Systems
WILSON, R. F., Prof., Plant Physiology (USDA)
WORSHAM, A. D., Prof., Weed Science—Corn & Small Grains
YELVERTON, F. H., Crop Sci. Ext. Specialist, Tobacco
YORK, A. C., Ext. Assoc. Prof., Weed Sci.—Soybeans & Peanuts

Economics and Business

HOOVER, D. M., Prof., Dept. Head
MOORE, C. L., Prof., Assoc. Dept. Head
SCHRIMPER, R. A., Prof., Assoc. Dept. Head
BABCOCK, B. A., Asst. Prof., Field Crops Management and Policy
BARNES, R. N., Economics Specialist, Farm Records Marketing
BEALS, A. M., Jr., Lecturer, Agricultural Institute Instruction
BEGHIN, J. C., Visiting Assistant Professor, International Trade of Agricultural Products
BENSON, G. A., Assoc. Prof., Economist, Dairy Management and
BERTHA, J. W., Asst. to Head and Lecturer
CARLSON, G. A., Prof., Production Economics, Pest Management, Natural Resources
COLLENDER, R. N., Asst. Prof., Agricultural Finance
DAHLE, R. D., Prof., Economist, Agricultural Business Management
DANIELSON, L. E., Prof., Land and Water Resources
EASLEY, J. E., Prof., Economist, Fisher Management
EICKHOFF, W. D., Assoc. Prof., Economist, Farm Management and Income Tax
ESTES, E. A., Assoc. Prof., Vegetable Management and Marketing
FACKLER, P. L., Asst. Prof., Ag Price Analysis and Modelling
FEITSHANS, T. A., Asst. Prof., Agricultural Law and Estate Planning
FORTENBERY, T. R., Asst. Prof., Grain Marketing
FOSTER, W. E., Asst. Prof., Farm Management and Production Economics
GALLANT, A. R., Prof., Statistics and Economics and Business
HOAG, D. L., Asst. Prof., Soil Conservation and IPM
IHNEN, L. A., Prof., Human Resources Economics, Animal Production Economics JOHNSON, P. R., Prof., International Trade
JOHNSON, T., Prof., Economics and Business and Statistics, Econometrics, Renewable Resources, Livestock-Forage Systems
NEUMAN, D. F., Prof., Field Crop Management
OLTMANS, A. W., Lecturer, Agricultural Finance
PASOUR, E. C., Jr., Prof., Agricultural Policy
PEELER, R. J., Prof., Agricultural Marketing
PERRIN, R. K., Prof., Production Economics, Technical Change in Agriculture RHUDY, S. C., Lecturer, Agricultural Law
ROBINSON, S. L., Lecturer, Agricultural Institute Instruction
RUCKER, R. R., Asst. Prof., Agricultural Production and Supply Economics
SAFLEY, C. D., Assoc. Prof., Economist, Fruit and Ornamental Management and Marketing
SAMPSON, H. A., Res. Assoc. and Lecturer, Agricultural Institute Instruction
SAPPIE, G. P., Research Assistant, Pest Management and Farm Income Analysis
SUMNER, D. A., Prof., Agricultural Policy, Farm Size, Human Resource Economics
SUTTER, S. R., Economics Specialist, Beef Cattle and Farm Labor
THURMAN, W. N., Assoc. Prof., Demand, Poultry Industry
TOUSSAINT, W. D., Prof., Tobacco Policy
USRY, R. H., Lecturer, Economics Specialist, Youth Programs
WALDEN, M. L., Prof., Consumer Economics
WOHLGENANT, M. K., Prof., Agricultural Markets, Horticulture Industries
ZERING, K. D., Asst. Prof., Swine Management and Marketing Economics

Entomology

HARPER, J. D., Prof., Dept. Head
ABDEL-AAL, Y., Visit. Prof., Insect Physiology
AMBROSE, J. T., Prof., Apiculture
APPERSON, C. S., Prof., Medical Entomology
ARENDS, J. J., Assoc. Prof., Livestock and Poultry Insects
AXTELL, R. C., Prof., Medical and Veterinary Entomology
BACHELER, J. S., Prof., Cotton and Soybean Insects
BAKER, J. R., Prof., Ornamentals' Insects
BAMBARA, S. B., Ext. Spec. / Res. Asst., Apiculture
BRADLEY, J. R., Jr., Prof., Cotton and Soybean Insects
BRANDENBURG, R. L., Assoc. Prof., Insect Pests of Peanuts, Turf, Forage and Small Grain
BROOKS, W. M., Prof., Insect Pathology
CAMPBELL, W. V., Prof., Forage and Peanut Insects, Host Plant Resistance
COOK, S. P., Res. Assoc., Forest Insects
DEITZ, L. L., Assoc. Prof., Insect Taxonomy
DERRICK, M. ELLISON, Res. Assoc., Soybean Insects
FARRIER, M. H., Prof., Taxonomy of Acarina
FLETCHER, M. G., Res. Assoc. Med. and Vet. Ent.
GOULD, F. L., Assoc. Prof., Insect Ecology
HAIN, F. P., Prof., Forest Insects
HILLMANN, R. C., Assoc. Prof., Urban and Industrial Insects
JACKSON, D. M., Assoc. Prof., USDA, Tobacco Insects

KASHYAP, R., Visiting Scientist, Insects on Stored Grain
KENNEDY, G. G., Prof., Vegetable Insects
KEEVER, D. W., Asst. Prof., USDA, Tobacco Insects
KOMEILI, Brijandi, Visiting Scientist, Apiculture
LAMPERT, E. P., Assoc. Prof., Tobacco Insects
MEYER, J. R., Prof., Small Fruit Insects
NEUNZIG, H. H., Prof., Immature Insect Taxonomy
PARKER, B. M., Assoc. Prof., Mosquito Biology
PATEL, K. J., Res. Assoc., Med. and Vet. Ent.
ROCK, G. C., Prof., Apple Insects, Insect Nutrition
ROE, R. M., Assoc. Prof., Insect Physiology
ROOT, D. S., Lab Supervisor
RUEDA, L. M., Visiting Scientist, Med. and Vet. Ent.
SORENSEN, K. A., Prof., Fruit and Vegetable Insects
SOUTHERN, P. S., Prof., Spec.-in-Chg. Ent. Ext., Tobacco Insects
STEPHAN, D. L., Ext. Spec., Insect Identification
STINNER, R. E., Prof., Pop. Ecol., Systems Analysis
TOTH, S. J., Jr. Ext. Spec., Insect Survey
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CONARE
Container Corporation of America
Dare County Tourist Bureau
Division of Travel and Tourism, N. C. Department of Commerce
E. I. Dupont Company
EMBRAPA/IBDF
ESNACIFOR/COHDEFOR
Evergreen Timberlands Corporation
Federal Paper Board Company, Inc.
Florida Division of Forestry
FMC Corporation
Gaston County, N. C. Natural Resources Committee
Georgia Forestry Commission
Georgia-Pacific Corporation
Great Southern Paper Company
INIF
International Forest Seed Company
International Paper Company
ITT Rayonier, Inc.
James River Corporation
Jari-Companhia Florestal Monte Dourado
Jefferson Smurfit Corporation

Kimberly-Clark Corporation
Klabin do Parana
Leaf River Forest Products
MacMillan-Bloedel, Inc.
Manville
Mead Coated Board
Mead Corporation
Mondi Paper Company
N. C. Department of Agriculture, Agronomic Division
N. C. Department of Commerce
N. C. Department of Commerce - Division of Travel and Tourism
N. C. Department of Environmental Health and Natural Resources - Division of Parks and Recreation
N. C. Department of Transportation
N. C. Division of Forest Resources
N. C. Wildlife Resources Commission
National Council of the Paper Industry for Air and Stream Improvement, Inc.
National Institute of Forest Research of Mexico
Olin Corporation
Outer Banks Chamber of Commerce
Packaging Corporation of America
Paples Venezolanox
Peroxid-Chemi Gmbh
PISA
PIZANO/Monterrey Forestal
Potlatch Corporation
Proctor and Gamble Cellulose Corporation
Remington Arms Company
Repligen Sandoz Research Corporation
Scott Paper Company
Shell International Petroleum Company
South African Forestry Research Institute (SAFRI)
South African Pulp and Paper Industry (SAPPI)
South Carolina Commission of Forestry
Tennessee Valley Authority
Texasgulf, Inc.
U. S. Department of Energy
U. S. Department of Interior - National Park Service
U. S. EPA Region 4
U. S. Forest Service - Forest Products Laboratory
U. S. Forest Service - Southeastern Forest Experiment Station
U. S. Forest Service - Southern Forest Experiment Station
Union Camp Corporation
Universidad Veracruzana
University of New Hampshire
Virginia Department of Forestry
Westvaco Corporation
Weyerhaeuser Company

School of Human Environmental Sciences, University of North Carolina-Greensboro

AARP Andrus Foundation
Area Health Education Centers (Asheville, Eastern, Wilmington, and Greensboro)
Burlington Industries
Catholic Family and Community Services
CIBA-GEIGY Corporation, Agricultural Division
Cone Mills Corporation
Culp, Inc.
Duke University, Center for the Study of Aging and Human Development
Duke University, Department of Sociology
DuPont and Company
Durafab, Inc.
The Home Economics Center for Research
The Home Economics Foundation, Inc.
International Fabricare Institute
Kellenberger Foundation
Legislature Research Commission Study Committee on Gerontology,. North Carolina Legislature
MAR-MAC Manufacturing Company
Department of Mathematics, University of North Carolina, Greensboro
The MUSC/CAP Project, Clemson University
Natick Labs
National Dairy Council
National Yogurt Association
The Near East Foundation
North Carolina Department of Human Services, Division of Aging
North Carolina Agricultural Extension Service
North Carolina A & T State University, School of Nursing
The Pennsylvania State University
Pittsburgh Theological Seminary
Proctor and Gamble
The Research Triangle Institute
Soap and Detergent Association
North Carolina State University, Department of Sociology and Anthropology
Southern Bell of North Carolina
Surgikos Division of Johnson and Johnson
University of Tennessee
University of North Carolina, Greensboro, Department of Geography
Textile Care Allied Trades Association, Inc.
Winthrop College

Agricultural Extension Service

A. L. Laboratories
A&H Distributors
Abbott and Cobb Seed Co., Inc.
Advanced Genetics, Inc.
AEP Industries
Ag-Mark, Inc.
Agri Supply Co.
Agri-Bio Corporation
Agricultural Chemical Industry
Agricultural Foundation
Alabama Cooperative Extension Service
ALAMC Angus Farm
Albemarle-Pamlico Estuarine Study
Alkro Farms
Alpha Gamma Rho Fraternity
Alternative Energy Corporation
American Angus Association
American Association of Retired Persons
American Blueberries, Inc.
American Breeders Service
American Cyanamid Company
American Dairy Association of North Carolina
American Dairy Goat Association
American Floral Endowment
American Gelbvieh Association
American Hereford Association
American Home Economics Association
American International Charolais Association
American Polled Hereford Associaton
American Pulpwood Association
American Quarter Horse Association
American Salers Association
American Sheep Producers Council, Inc.
American Shorthorn Association
American Simmental Association
American Society for Training and Development
American Youth Foundation
Amoco Foundation, Inc.
Anchor Laboratories, Inc.
APG Lime Company
Applied Food Biotechnology
Arbor Acres Farms, Inc.
Asgrow Seed Co.
Association of Official Seed Analysts
Austin Blueberry Farm
Auxiliary to the N.C. Optometric Association, Inc.
Auxiliary to the N.C. Veterinary Medical Association
Avian Farms International
Bahlsen, Inc.
Bailey Feed Mill

Wayne E. Bailey Produce, Inc.
Anne Kristine Barnes Scholarship
Barnes Farming
W.W. Barnes, Jr. Blueberry Farm
Chester Barnhill Blueberry Farm
Forris Barnhill Blueberry Farm
Bartlett Milling Company
BASF Corporation
Bateman Produce Farms
Beatrice Companies, Inc.
Beck Group, Inc.
Beef Improvement Federation
Beeson Rhododendron Nursery
Biltmore Estate
Bio-Lab, Inc.
Bio-Zyme Enterprises
Black Hawk East Community College
Blanchard Land Co.
Bob Timberlake and Heritage Gallery of Lexington, North Carolina
Boehringer Ingelheim Animal Health, Inc.
Boswell Photography
Bowers Brothers
Bradshaw Supply Company
Breeden Holdings
British United Turkeys of America
Brownwood Stables
Bruner Sides Nursery
Buckman Laboratories
Bull City Sertoma Club
Burroughs Wellcome & Company
Byrd Tractor and Equipment Company
Cablevey Feeding Systems
Cadillac Plastics
Canal Wood Corporation
Capitol Travel, Inc.
Capps Bookstore
Cargill Feeds
Cargill Swine Products
Cargill-Nutrena Feeds Division
Carl S. Akey, Inc.
Carnation Company
Carolina Blueberry Cooperative Association
Carolina By Products
Carolina Farmer, Inc.
Carolina Feed Industry Association
Carolina Packing Company
Carolina Power and Light Company
Carolina-Virginia Milk Producers Association, Inc.
Carolinas Golf Association
Carolinas Golf Course Superintendents Association
Carr Brothers Hampshires
Carroll's Foods
Carroll's of Warsaw
Carteret County Commissioners
Case IH
Central Soya Feeds
Ceva Laboratories
Champion Timberlands
Chilean Nitrate Sales Corporation
Chore Time Equipment
CIBA-Geigy Corporation
Classic Gallery
Clay's Hatchery
Coalition for the Development of Black Home Economists
Coats and Clark, Inc.
Cobb-Vantress
Coble Dairy Products
Coca-Cola Foundation
Cochran Corporation
Colonial Poultry Farms, Inc.
Color Tile
Colorcraft Corporation
Con-Agra Feed Company
Concord Duck Farms
Continental Grain Company
Durwood Cooper Farms
Steve Cooper and Associates
Cooperative Council of North Carolina
Coopers Animal Health
Coor Farm Supply Service Inc.
Corbett Brothers
Corn Growers Association of N.C., Inc.
Corn Products
Cotton Quality Improvement Committee
Cotton State Support Program
Cow Creek Brangus
Craven County Health Department
Creative Kitchen, Triangle Design Center
Credit Banks of Columbia
Cross Country Embroidery
Cuddy Farms
Custom Feeds
Cutter Animal Health
Dairy Foundation
Dairy Fresh, Inc.
Dairymen, Inc.
Davis Yachts, Inc.
Days Inn, Raleigh
Deere & Co.
DeKalb AgResearch, Inc.
DeKalb Genetics Corporation
Delmhorst Instrument Company
Joe Denning and Sons
Dinner Bell Foods, Inc.
Dixie Classic Fair
Dow Brands ZIPLOC
Dow Chemical Company
Drexel Heritage Furnishings, Inc.
Duke Power Company
E. I. DuPont de Nemours Company
Durham Life Broadcasting, Inc.
E-Z Mix Animal Nutrition, Inc.
Eagle Snacks, Inc.
East Duplin Milling Company
Eastern Turfgrass Association
Eastman Kodak Co.
Frankye Susanne Ebert Memorial Endowment
Edgecombe Community College
EFNEP, Home Economics, NCAES
Elanco Products Company, Inc.
Eli Lilly and Company
Breck Ellison Farms
Engineered Farm Systems, Inc.
Eni-Chem Americas, Inc.
Epsilon Sigma Phi Fraternity
Equestrian Provisions
Equine Management Systems
Equity Group

Estech Branded Fertilizers, Inc.
Extension Executive Development Institute
Fair Products, Incorporated
Fairfield American Corporation
Family Community Leadership Program
Family Egg Market
Farm Credit Service of Asheville
Farm Credit Service in North Carolina
Farmers Cooperative Council of North Carolina
Fayetteville Technical Community College
Federal Cartridge Corporation
Federal Land Bank of Columbia
Federal Land Bank Associations in North Carolina
Federal Property Revitalization Program
Federation of Garden Clubs of North Carolina
Ferebee Farms
Fermenta Animal Health
Fermenta ASC
Fermenta Plant Protection Company
Firestone Tire and Rubber Company
Firestone Trust Fund
Fisher Nut
Flav-O-Rich, Inc.
Fleischmann's Yeast, Inc.
FMC Corporation
Ford Motor Company Fund
Forsyth County 4-H Club Horse Council
Foundation for Agronomic Research
Foundation Seed Producers
Franklin Laboratories
Fred Glockner Foundation
G & M Sales
G&M Milling Company
Gaston County, North Carolina
General Foods Fund, Inc.
General Motors Foundation, Inc.
Georgia Cooperative Extension Service
Georgia-Pacific Corporation
Gerber Products Co.
GM Truck Division, General Motors Corporation
Golden Corral
Golden Poultry

Goldsboro Milling Company
Gore Trailer Manufacturing, Inc.
Grady-White Boats
James A. Graham
Great Lakes Chemical Co.
Greenthumb Nursery
Greer Charolais
Guide Dogs for the Blind, Inc.
Guilford County 4-H Horse Program
Guilford County Horse Management Council
Guilford Mills
Gustafson, Incorporated
H & N, Inc.
Hall Farms
Happy Jack
Hardee's Food System, Inc.
Mrs. L. R. Harrill
Harris-Moran Seed Co.
Hatteras Yachts, Inc.
Hawes Farming Corporation
Heinz Vinegar
Helena Chemical Company
Henderson Orchards
Hendrix and Dale
Hicks & Yeary Angus
High Point Sertoma Club
Hoechst-Roussel Agri-Vet Company
Hoffmann-LaRoche, Inc.
Hog Slats, Inc.
Holly Farms Poultry Industries
Holly Run Riders 4-H Horse Club of Onslow County
Hubbard Farms
Hunter Jersey Farms
Hy-Line International
I. D. Russell Company
IBM Corporation
ICI Americas
IMC/Pitman-Moore
International Association of Fish and Wildlife Agencies
International Brangus Breeders Association
International Furnishings and Design Assoc. Carolinas Chapter
International Minerals, Inc.
International Paper Company Foundation
Intervet America, Inc.
IPEC, Inc.
Iredell Stockyards
ISA-Vedette
Ithaca Industries, Inc.
Brent Jackson Farms
Jamesway Incubator
Jeep Corporation
Joan of Arc Co., Division of Pillsbury
Johnson Irrigation
Dean and Carl Johnson Blueberry Farm
Johnston Livestock Mutual, Inc.
Kamar, Inc.
Karastan
Keep North Carolina Clean and Beautiful
Kellogg Foundation
Kemin Industries
Paul Kendall Blueberry Farm
Kenosha Beef International
Kentucky Cooperative Extension Service
Kerr Glass Manufacturing Corporation
Ralph W. Ketner
Kirkegaard and Perry Laboratories
Kraft General Foods
Kraft, Inc.
Lake Creek Blueberry Farm
Lakeland Community College
Lakeview Farm
Land O' Lakes, Inc.
Landis Associates, Inc.
Lorna W. Langley Scholarship
Lee and Son's Nursery
Lenoir County Adult Leader Association
Lenoir County Livestock Association
Lenoir Swine Breeders
Lesco, Incorporated
Lexington Furniture Industries
Lexington Swine Breeders
Livingston Chemicals
Loftin's Berry Farm
Louis Rich
Lundy Packing Company
Lutz Auction Service, Inc.
Mac-Page, Inc.
Manco Genetics, Inc.
Manna Pro Corporation
Maola Milk and Ice Cream Company
Martha White Foods
Martin Community College
Masco, Inc.
McDonalds Corporation
Lanness K. McKee & Co., Inc.
Mecklenburg County 4-H Horse Council
Meherrin Agri. & Chemical Co.
Meridian Sertoma Club
Merrill Poultry Farms
Midstate Mills
Mike's Chemical
Mikkelsens Inc.
Minnesota Extension Service
Miracle Feeds, Inc.
Mobay Corporation
Mobay Corporation, Agricultural
Monk Brothers
Monsanto Agricultural Company
Monsanto Fund
Moore's Dairy Equipment Company
Neil and Willie Moore Blueberry Farm
Moorman Manufacturing Company
Morris Blueberry Farm
Mountain Farm Credit Service
MSD Agvet, Div. of Merck & Co., Inc.
Mt. Vernon Springs Hatchery
Murphy Farms, Inc.
Mycogen Corporation
Nabisco Biscuit, Inc.
Naegle Outdoor Advertisers Inc.
Nahunta Farms
Nahunta Pork Center
Nantahala Power & Light Co.
Nash Community College
Nash Johnson & Sons' Farms
Nash Produce Co.
National 4-H Council
National Association for Extension Home Economists
National Hunters Association
National Pork Producers' Council
National Turkey Federation
National Wildlife Federation
Nationwide Insurance Company
Native Plants, Incorporated
Clyde Nelson Blueberry Farm
Netafim Irrigation
Nicholas Turkey Breeding Farms
NOBA, Inc.
NOR-AM Chemical Company
North American Fiber Glass Corp.
North American International Livestock Exposition
North American Limousin Foundation
N.C. 4-H Agents Association
N.C. 4-H Development Fund, Inc.
N.C. 4-H Honor Club
N.C. 4-H Horse Advisory Board
N.C. A & T State University
N.C. Agricultural Extension Advisory Council
N.C. Agricultural Foundation
N.C. Alternative Energy Corporation
N.C. Angus Association
N.C. Arabian Horse Association
N.C. Association of Community College Presidents
N.C. Association of County Agricultural Agents
N.C. Association of Electric Cooperatives
N.C. Association of Extension Home Economists
N.C. Association of Instructional Administrators
N.C. Association of Insurance Agents, Inc.
N.C. Association of Nurserymen
N.C. Association of Soil & Water Conservation Districts
N.C. Auction Markets Association
N.C. Biotechnology Center
N.C. Brown Swiss Breeders Association
N.C. Cattlemen's Association
N.C. Cattlewoman's Association
N.C. Certified Sweetpotato Seed Growers Assoc.
N.C. Chapter of The Wildlife Society
N.C. Chapter of the Association of Landscape Architects

N.C. Charolais Association
N.C. Christmas Tree Association
N.C. Community College Institutional Development Consortium
N.C. Cooperative Fish and Wildlife Research Unit
N.C. Corn Growers Association
N.C. Cotton Promotion Association, Inc.
N.C. Cotton Wives
N.C. Dairy Foundation
N.C. Dairy Herd Improvement Association, Inc.
N.C. Department of Administration
N.C. Department of Agriculture
N.C. Department of Commerce
N.C. Department of Community Colleges
N.C. Department of Education, Vocational Home Economics
N.C. Department of Environment, Health, and Natural Resources
N.C. Department of Health Services
N.C. Department of Human Resources, Office of Prevention
N.C. Department of Human Resources, Office of Child and Family
N.C. Department of Public Instruction
N.C. Department of Transportation
N.C. Division of Forest Resources
N.C. Division of Health Services
N.C. Division of Industrial Development
N.C. Division of Radiation Protection
N.C. Dressage & Combined Training Association
N.C. Egg Association
N.C. Energy Division
N.C. Extension Homemakers Association, Inc.
N.C. Extension Specialists Association
N.C. 4-H Development Fund, Inc.
N.C. 4-H Honor Club
N.C. 4-H Horse Advisory Board
N.C. Family Life Council
N.C. Farm Bureau Federation
N.C. Farm Writers and Broadcasters Association
N.C. Forestry Association
N.C. Governor's Highway Safety Program
N.C. Granite Corporation
N.C. Grape Council
N.C. Guernsey Breeders Association
N.C. Gun Collectors Association
N.C. Hampshire Associaton
N.C. Hereford Association
N.C. Holstein-Friesian Association
N.C. Home Builders Association
N.C. Horse Council
N.C. Horticultural Council, Inc.
N.C. Jersey Breeders Association
N.C. Landscape Contractors Association
N.C. Livestock Auction Markets Association
N.C. Milk Commission
N.C. Mutual Hatchery Association
N.C. P-Y-O and Roadside Market Operators Association
N.C. Peanut Growers Association, Incorporated
N.C. Pest Control Association
N.C. Polled Hereford Association
N.C. Pollution Prevention Program
N.C. Pork Producers' Association, Inc.
N.C. Potato Association
N.C. Poultry Federation
N.C. Poultry Processors Association
N.C. Power
N.C. Press Association
N.C. Project Literacy U.S. (PLUS)
N.C. Purebred Dairy Cattle Association
N.C. Purebred Swine Breeders Association
N.C. Quarter Horse Association
N.C. Research Farms
N.C. Rural and Economic Development Center
N.C. Safety Council, Inc.
N.C. Sheep Producers Association
N.C. Shorthorn Association
N.C. Simmental Association
N.C. Small Grain Growers Association, Inc.
N.C. Society of Farm Managers & Rural Appraisers
N.C. Solar Center
N.C. Soybean Producers Association
N.C. State Beekeepers Association
N.C. State Fair
N.C. State Motor Club
N.C. State University Advisory Leadership Council
N.C. State University Animal Science Club
N.C. State University College of Textiles
N.C. State University College of Veterinary Medicine
N.C. State University Collegiate 4-H Club
N.C. State University Combined Giving Campaign
N.C. State University Summer School Division
N.C. Sweetpotato Commission
N.C. Tobacco Foundation, Incorporated
N.C. Turkey Federation
N.C. Veterinary Medical Association Auxiliary
N.C. Volunteer 4-H Leaders' Association
N.C. Wildlife Federation
N.C. Wildlife Resources Commission
N.C. Yorkshire Association
N.C. Youth Advocacy and Involvement Office
N.C. Youth Council Services, Child Day Care Center
North Central Farm Credit Service
North-South Turfgrass Association
Northeast District 4-H Horse Council
Northern Piedmont 4-H Horse Council
Northrup King Co.
Northwest Dairy Equipment Company
Northwest District 4-H Horse Advisory Board
Northwest District 4-H Horse Council
Nourse Hydro
Nutra-Tech, Inc.
Nutrena Feeds
Oak Summit Farms
Ohio State University
Onslow County 4-H Program
Optimist Club of Raleigh
Ortho Division, Chevron Chemical Corporation
P Bar J. Polled Hereford & Gelbvieh
Parker Farm
Partisover Farms
Clyde Pearson
Pee Dee Hatchery
J. C. Penney, Inc.
Pennfield Poultry
Perdue, Inc.
Perlite Institute
Peterson Farms
Peto Seed Co.
Hugh Pfaff Poultry Company, Inc.
Pfizer, Inc.
Pfizer, U.S. Animal Health Operation
Philip Morris USA
Piedmont Dairy and Farm Equipment
Piedmont Dairy Goat Association
Piedmont Farm Credit Service
Piedmont Farm Systems, Inc.
Piedmont Turfgrass Association
Pig Improvement Co.
Pilch, Inc.
Pine Ridge Milling Company
Pioneer Hi-Bred International
Planters Lifesavers Company
Plastigone Corporation
Dr. Clarence Poe Scholarhsip
Poultry Industry Associates
Powell Industries
William Powell Blueberry Farm
Prestage Farms, Inc.

Prestage Feeds
Princeton Chemical
Producers Cooperative Feed Mill
Production Credit Associations in N.C.
Progressive Farmer
Purina Dog Food Group, Ralston Purina Company
Purina Mills, Inc.
Purvis Brothers
Garth H. Quinn
Quinn Family Scholarship
R. J. R. Nabisco, Inc.
R. J. Reynolds Tobacco Company
Ralston Purina Co.
Ration Maker, East, Inc.
Reader's Digest Association, Inc.
Reaves Concessions
Record Bar, Inc.
Red Angus Association of America
Resources / Albemarle-Pamlico Estuarine Study
Retired Senior Volunteer Program
Henry Revell, Jr. Scholarship in Agriculture
Revel's Tractor Company, Inc.
Rex Plastics Inc.
Kate B. Reynolds Health Care Trust
L.A. Reynolds Garden Center
Z. Smith Reynolds Foundation
Rhone - Poulenc Agricultural Company
Roberts Irrigation
Robeson Community College
Roger's Dairy Equipment Co.
Rohm and Haas Company
Royal Sluis Seed Co.
Royster Chesepeake
Rural Minority Women's Leaderships Program
S and N Farms
Safer, Inc.
Salsbury Laboratories
Sanderson Blueberry Farms
Sandoz Crop Protection Corporation
Santa Gertrudis Breeders International
Savannah Foods and Industries, Inc.
Gordon E. Sawyer Scholarship
I.O. Schaub Scholarship
Sertoma Clubs of N.C.
Shade Tree Siommentals
Sharp Farms
Shaver Poultry Breeding Farms, Ltd.
Shaw Blueberry Farm
Shenandoah Manufacturing Company
James E. Shepherd Sertoma Club
Showell Poultry Farms
Simplicity Pattern Co., Inc.
Singer Sewing Company
Sleepy Creek Turkey Hatchery
Small Grain Growers Association of N. C., Incorporated
George W. Smith Memorial
Smith Kline Animal Health Products
Smithfield Packing Co.
Soil Conservation Service
South Carolina Cooperative Extension Service
Southeastern Blueberry Council
Southeastern Forest Experiment Station
Southeastern Lumber Manufacturers Association
Southeastern Poultry and Egg Association
Southern Bell
Southern Forest Products Association
Southern Hog Producer
Southern Pine Inspection Bureau
Southern Region Extension Impact Study Group
Southern Regional Aquaculture Center
Southern States Cooperative, Inc.
Southern Testing Labs
Spartan Grain & Feed Co.
Spayd Fruit Farm
Yates Sperling and Son
Spring Meadow Farms
Joe Spruill Swine Farm
Star Milling Co., Inc.
State of Alabama
Sterwin Laboratories
Steven's Milling Company
Stokes Seed Co.
Gary Stott Memorial Fund
Gary Stott Scholarship
Sun Seed Co.
Sunnyside Eggs
Swaim Originals
Synbiotics Corporation
Syntex Laboratories, Inc.
Takii Seed Co.
Talley Farms
Tar Heel Hatchery
Tar Heel Veterinarian Supply Co., Inc.
Tarheel Sertoma Club
Tatum Farms
Teeter Family 4-H Scholarship
Tennessee Valley Authority
Thomasson Nursery Inc.
Timber Products Inspection
Tipper Tie, Inc.
Tobacco Foundation
Tobacco Radio Network
Townsend Poultry
Transco Energy Company
Tri-State Hatcheries
Triangle Turfgrass Association
Triple "F" Products
Triple C Farms
Tull Hill Farms, Inc.
Turfgrass Council of N.C., Inc.
Tyson Foods
Union Camp Corporation
Uniroyal Chemical Company
United Agri-Products, Inc.
U.S. Agency for International Development
U.S. Department of Agriculture
U.S. Department of Agriculture—Soil Conservation Service
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
U.S. Forest Service—State and Private Forestry Southern Region
U.S. Gypsum Company
U.S. Marine Corps
UNOCAL Corporation
Upjohn Company
VA-NC Select Sires, Inc.
Valent USA Corporation
Dan Vaughan Nursery
Vigortone
Viking White Sewing Machine Co., Inc.
Vineland Laboratories
Virginia Cooperative Extension Service
Virginia-Carolina Select Sires
W.K. Kellogg Foundation
Wadeken Industries
Wake County 4-H Horse Council
Wake Technical Community College
J. B. Walter & Sons
Gertrude L. Warren Scholarship Fund
J. A. Warren Company
Wayne County Livestock Association
Wayne Feeds-Continental Grain
West Winston Sertoma Club
Western Carolina Livestock Market, Inc.
Western District Leadership Trust
Western Steer Family Steak House
Westinghouse Electric Corporation
Weyerhaeuser Company
Whip-O-Will Farms
White's Dairy Service
Dan Williamson and Co.
Windcrest Farms
Winston-Salem Power Squadron
Winston-Salem Sertoma Club
George Wood and Son
Robert N. Wood Collegiate 4-H Club Scholarship
Woodson-Tenent Labs
WPTF
WRAL
Wrangler Jeans
Wyatt-Quarles Seed Company
Yadkinville Sertoma Club
Zinpro Corporation