Proceedings of the 1993 Program of the Research Center Administrators Society

February 1 and 2, Tulsa, OK

This Society is affiliated with the Southern Association of Agricultural Scientists and has membership from each of the southern states. The Executive Committee is composed of one representative from each state, the current officers and the immediate past President (is President of the Executive Committee).

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DIVISION OF AGRICULTURE AND NATURAL RESOURCES S.C. AGRICULTURAL EXPERIMENT STATION Edisto Research and Education Center

September 2, 1993

Membership Research Center Administrators Society Southern Association of Agricultural Scientists

Dear Members:

It was a privilege and honor for me to serve RCAS as an officer for the last four years. It is very gratifying to see the organization gaining strength and the respect of other groups. Most of all, I am grateful for the many new friends that I have made through RCAS and the help that you have given me.

RCAS has developed into a strong organization that is attracting the attention of many people. I have received many, many complements on the quality of our programs and the benefits of the published proceedings. It is particularly noteworthy that the Deans, Directors, and Department Heads that have attended our programs have been extremely complementary. We must continue to seek high quality speakers, utilize our own members as much as possible, and focus on practical issues that are relative to our needs.

I think the establishment of the Executive Treasurer position, and initiation of membership dues will give the organization continuity, a membership roll and home office, that will be very helpful in distribution of the Proceedings and in maintaining the society records.

I encourage each of you to continue to inform the higher administrators in your states of the activities of our organization, and to encourage others in your respective states to participate. Also, I encourage more of our membership to attend the fall meeting. This meeting is primarily for the executive committee to plan the program, but all members are welcome.

I urge the society to seek new ways of serving the membership. Two possibilities that need further consideration are: sponsoring some in depth seminars and tours that address the specific needs of our members.

Also, we should consider ways that our organization can relate to off-campus administrators in other regions.

Thank you again for allowing me to serve you and for your friendship.

Sincerely. ame James Riley Hill Jr.

Resident Director 1992-93 Chairman, RCAS

JRH:mt

Acknowledgements

This is the sixth volume of the RCAS Proceedings. The Proceedings have evolved from earlier years to now serve as a permanent record of events for the Society with the inclusion of minutes of business meetings, past officers, recipients of the Distinguished Service Award, current By-Laws and membership directory.

We extend our appreciation to the speakers who provided copies of their text, program chair, Joe Musick, who conscientiously organized the program and obtained the texts, and to Bill Webb, who pursued and succeeded in getting historical information on past meetings and officers and especially the biographic write-ups and pictures for all the past recipients of the Distinguished Service Awards. We also again thank Rosa Maese who has typed all volumes of RCAS and copied and collated the pages.

The editors are honored and pleased to be able to work with a group of people who are dedicated to the success of the RCAS.

Howard Malstrom Dennis Onks Editors

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WELCOME AND OVERVIEW OF OKLAHOMA AGRICULTURE

C. B Browning, Dean and Director Oklahoma Agricultural Experiment Station Oklahoma State University Stillwater, OK 74078

On behalf of the Division of Agricultural Sciences and Natural Resources we welcome the Research Center Administrators Society to Oklahoma. We are also pleased that many of you will also be making the tour to the Oklahoma State University campus.

Oklahoma has characteristics of the southeast, the southwest and the plains states as well. Rainfall varies from 50 inches in the southeastern part of the state to 15 inches in the panhandle. Elevation also changes from 600 ft in the east to about 5000 ft in the agriculture panhandle. Oklahoma is diverse and like many states and you see a panorama of geography, topography and agriculture. There are 10 million acres of forest, primarily in the southeastern part of the state. We also have mountains in Oklahoma. There are four major mountain ranges, and the highest is about 2900 ft. With only 15 inches of rainfall the panhandle area is irrigated. The diversity includes a growing season from 180 days in the panhandle to about 240 days in the extreme southeast.

Most folks think of Oklahoma, as having rangeland, pastures, and cattle - about 17 million acres in range and pasture land. Oklahoma, however, has ample rolling plains which include about 7 million acres of wheat annually. There are about 31 million acres of cropland in our 44 million acres of Oklahoma. Only 1/2 a million acres is irrigated and that is planted to cotton, peanuts, forage and grain sorghum. Some wheat is irrigated, but not extensively.

The diversity in Oklahoma includes many lakes. Oklahoma is a lake state? That may be an interesting question, but there are about 200 man-made lakes. There are about 2000 square miles of lakes, streams and the ponds. In fact, the state chamber of commerce indicates that if we include farm ponds, there is more shoreline than in the state of Minnesota.

Oklahoma is a rural and agricultural state. The state population is about 3.2 million people and 1/3 of those live in Tulsa and Oklahoma City. Around the Stillwater area, I really don't think of Oklahoma as being rural. In fact, about 75% of our population live in a triangular area including Tulsa, Oklahoma City and Stillwater. However, the rest of the state with about 25% of the population would be considered rural.

Oklahoma is often referred to as the Land of the Redman. We are noted for our Native Americans and I think we may have more Native Americans in Oklahoma than any other state. The oil and gas industry has been important in Oklahoma since the early 1900's. It is still important, but certainly diminishing in importance.

The Oklahoma State Experiment Station headquarters in Stillwater features the Magruder plots which were established in 1892 and are the oldest continuous Soil Fertility Wheat Plots west of the Mississippi River. A young scientist by the name of A. C. Magruder, over a hundred years ago recognized the importance of soil science and wheat production, initiated this study by planting the famed 'Magruder' plots. These plots were planted and at that time no one dreamed that a hundred years later we would still be planting wheat in the same plot of ground and doing essentially the same kind of studies in terms of fertilizer treatments and continuous wheat. Initially crop rotation was introduced in the Magruder plots; however, those treatments have been discontinued. Only the soil fertility treatment on continuous wheat remain.

There are many research facilities on and around the OSU campus. The Noble Center for Agriculture and Renewable Resources is a focal point of much research. The Agronomy Research Station, one mile west of campus, has greenhouses, buildings and 200 acres of land. There are other research facilities near Stillwater for Entomology and Horticulture (nursery and turfgrass research). There are also livestock research facilities for beef cattle, horses, swine, sheep and dairy cattle to the west of Stillwater.

The north central stations (Panhandle Station, Southern Great Plains Station, North Central Station and Pawhuska Station - see map) of Oklahoma are devoted to primarily wheat. The southwest research complex (Atlas, Mangum and Tipton stations) is in an area of intensive cotton production. Irrigated and dryland cotton comprise about 250,000-300,000 acres making it an important commodity for Oklahoma today. The newest branch station, is the Wes Watkins Research and Extension Center, Lane, OK. Personnel at this station work in cooperation with the Agricultural Research Service of USDA and have developed a fine working relationship with that organization. We hope to be able to continue to work closely together and make the most efficient use of our resources. This unified effort will enable us to adequately represent the region.

Horticulture research is conducted at Bixby (vegetables), Wes Watkins (vegetables, small fruits, Christmas trees), Sparks (pecans) and Perkins (fruit trees). Forestry research is done at Idabel where the Kiamichi Forestry Research Station and the Broken Bow Field Station are located. Livestock research is done at several places, notably Haskell, Bessie, Woodward, Goodwell and El Reno.

We must discuss, if even for a short time, these difficult fiscal times. It was very interesting that when given the opportunity in last November's general election, the electorate in Oklahoma approved a \$350 million bond issue and 60% of it was designated for higher education. We are pleased that \$18 million of the research allotment of \$50 million is earmarked to agriculture. We can dedicate \$4 million for renovation of facilities in the agricultural experiment station. This will be difficult because we have several

requests for renovation. The challenge is to squeeze \$12 million in requests down to a \$4 million opportunity. Some of the items in need are pesticide facilities, improved storage facilities, greenhouses, general maintenance and perhaps even a new swine facility that would take a significant part of that \$4 million.

We have spent \$600,000 for the architectural plans for an agricultural product processing facility. We will ultimately need to invest about 14 million dollars for the completed facility. It will represent a very modern set of research and education facilities devoted to working with the smaller agricultural value added processors in the state. This processing facility will be concerned primarily with food, but not exclusively. We will consider all kinds of opportunities for value added to agricultural life. Oklahoma is way behind the average in the nation in terms of processing our products. In the years to come an aggressive program in research and education including agricultural processing will be very important.

The new Noble Research Center for Agricultural and Renewable Natural Resources is a beautiful facility that those of you taking a tour of the campus will have an opportunity to visit. Back in the early 1980s we had a vision for new facilities which we called the Second Century Generation Facilities as we look toward our second century serving Oklahoma. We call it the 21st Century Center for Agriculture and Natural Resources. Forty-eight million dollars will be invested by the time we finish but no federal money is involved. Our governor at that time told us that the state would provide us with \$15 million if we could raise 15 million dollars from private funding. We did that and the 30 million dollars was a foundation for the entire endowment program that has ultimately become 48 million. We are very proud that the Noble Foundation in Ardmore, Oklahoma invested 3 million dollars of the \$15 million in that facility. We were pleased to name the facility for the Nobel Foundation's local family.

In summary, the sun is rising over the future of agriculture and there will be a new day in agriculture. Even with the tight budgets and financial difficulties each of us should evaluate our challenge in our own state and our own location. The new day brings a lot of unknowns for us and for agriculture. Agriculture will be an important part of the economic and social future of our country and we need to fulfil our responsibilities to be certain that force be positive in that future.

We are pleased to host the Research Center Administrators Society in Oklahoma. We hope you enjoy your opportunity to interact here during these meetings. We also hope many of you will travel to campus to see our facilities and research plots. We hope you have a genuinely enjoyable stay in Oklahoma.

Thank you very much.

Oklahoma Agricultural Experiment Stations and Oklahoma Resource Area Map



PRIORITY SETTING AS A FUNCTION OF STRATEGIC PLANNING FOR AGRICULTURAL RESEARCH

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Summary

The strategic planning process, in and of itself, does not solve problems. Rather it should result in an implementation plan that overcomes constraints to capitalizing on certain opportunities. The purpose of strategic planning is to identify and pursue a course of action that will lend competitive advantage on the long-term to the organization. Priorities emerge as products of the vision statement, as contributors to the organization's mission, and as the result of consensus building. Consensus building is greatly influenced by organization-specific factors such as "within-system inertia," specific strengths, unique constraints and externalities. Strategic planning is a dynamic, iterative process that causes priorities, and even the relative standing among priorities, to change as the plan evolves through time. A set of general criteria are presented in question form to help identify the highest priority programs/activities, at least during the initial stages of the planning process.

Introduction

My charge is to discuss the setting of priorities during Strategic Planning with special reference to the agricultural research enterprise. Rendered to its most precise form, I suspect that the charge could be worded, "How do you decide which things to do and which things not to do; or, which things are to be 'let go'?"

The topic can be addressed only in general terms because strategic planning is organization specific which, in turn, means that the dynamics of priority setting vary dramatically with planning context and situation. Also, priority setting is only one step in the planning process, and is preceded by a number of critical activities that set the stage for identifying priorities. Planning is a continuum of activities which must be completed in an orderly fashion for success to be realized.

Presented to the Southern Research Center Administrator's Society meetings, February 1, 1993, in conjunction with the Southern Association of Agricultural Scientists meetings in Tulsa, Oklahoma.

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Because it would be inappropriate to consider priority setting outside of the context of the overall planning process, I have taken the liberty of broadening the presentation to address some of the important activities that lead to priority setting. I also present several general propositions that I view as important to dealing with my charge. Finally, this presentation is based on the assumption that strategic planning is viewed as a legitimate process employed in the strictest sense, rather than as a means to justify a series of predetermined ends. 1

STRATEGIC PLANNING: THE BACKDROP FOR PRIORITY SETTING

Proposition 1. The recent remarkable popularity of strategic planning may be attributed primarily to the need for universities to develop "survival" strategies on the short-term rather than to plan toward building competitive advantage on the long-term. Therefore, it is appropriate to emphasize that as a process, strategic planning process does not solve problems. It should, however, result in an implementation plan that overcomes constraints to capitalizing on certain opportunities.

Few terms recur more frequently in conversations of the day than does "Strategic Planning" -- everyone is doing it (or trying to do it or think they are doing it). Parallel and/or associated terms and phrases include "proactive", "downsizing" ("rightsizing" is more palatable to some), "redirection" and "reallocation." There are a number of other such terms and phrases that have become commonplace, especially in the last five years.

Strategic planning, in and of itself, does not solve problems. The purpose of strategic planning is to identify and pursue a course of action that will lend competitive advantage to the organization on the long term. Success of the tactical (implementation) phase ultimately determines whether that competitive advantage is achieved. These phases should developed and executed in order with the implementation stage initiated only after the strategy(ies) has(have) been adopted by the organization.

Proposition 2. Too often, the strategic and tactical (implementation) planning phases are pursued almost simultaneously; this usually works to the detriment of the overall process.

The present management environment for most academic institutions causes decision-making to be onerous in most cases, even for those organizations with a working strategic plan in place. This management environment, unfortunately, may have a tremendous negative influence on planning dynamics by tending to emphasize short-term needs over development of viable long-term strategies. Planners must make a special effort to retain integrity in the planning process and work through it in the appropriate stepwise manner.

It often is difficult under the best of circumstances to ensure that the planning steps are taken in their appropriate order. As an example, issues such as downsizing and redirection should not be acted upon before the appropriate direction(s) for the organization is(are) determined, based on identification of the highest priorities for the organization. Too often, discussion of the apparent need to redirect programs precede agreement as to the highest priority programs and issues. However, without question, as resources become increasingly scarce and the prognosis for the short- to mid-term portends a worsening situation in many states, planning has taken on increased importance.

Early in the planning process, strengths, weaknesses, opportunities and threats (constraints) are to be identified with some detail. This SWOT analysis sets the backdrop for all remaining planning activities. It assumes that the planners have accepted that their organization "cannot be everything to everyone" and that the philosophy of building strength upon strength will form the centerpiece for the process.

During the course of the SWOT analysis, it is critical that the planners "boil out the issues." This activity requires not only matching strengths with current issues but engaging in "futuring" activities/thinking that will help identify emerging issues on the near- and long-terms. The critical issues and organizational strengths must, then, be matched in some sort of logical manner. The priority setting process accommodates that need.

FACTORS AFFECTING THE PRIORITY SETTING PROCESS

Proposition 3. Priorities must be compatible with (even the result of) the vision and mission statements, and priority setting is influenced by the interactions of a series of factors including organizational strengths and constraints (e.g. within system inertia and uncontrolled externalities).

This section discusses factors that influence the priority-setting process in general terms only; ultimate priority setting is determined by planning dynamics unique to the organization. Priorities emerge as products of the vision statement, as contributors to the organization's mission, and as the result of consensus building regarding goals and objectives for the organization. Consensus building is greatly influenced by organization-specific factors such as within-system inertia, specific strengths, unique constraints and externalities.

Vision and Mission Statements. The Strategic Planning Process is designed to answer the basic questions, "What are we?, What do we want to become (What should we become)?, and How do we get there." As an initial step in the process, the vision statement must serve as the guidepost for designing the organization's future. The vision statement relates , then, "what we want to be."

As important is a statement of the mission for the organization; the reason for its being; the operational scope for the organization. The mission statement should avoid esoteric phrases, and focus clearly and directly on "why we are here; why we are needed; what we offer that is unique in meeting stated needs." The mission should provide the

motivation for all subsequent planning activities, and should be reviewed from time-to-time as planning progresses.

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A first test of any priority then: "Is this area/activity/emphasis as a priority consistent with the mission of our organization and the vision for its future?" Obviously, perception and opinion will come into full play, and should be utilized as planning tools in open discussion. Interactive discussion, "boiling out of the issues," is one the most positive attributes associated with the planning process. Also, this phase of the process allows identifying those programs basic to achieving the mission, base or core programs, which may not be "at the margin" of research or considered to be "emerging issues." A sound plan must appropriately tend both the base programs and those emerging issues; appropriate attention includes the rational setting of priorities in a manner which appropriately considers base programs.

Goals and Objectives. Critical to the process is the creation of a set of goals and objectives that appropriately address priorities, and in so doing bring "life" to the vision and mission, for the organization. Goal setting addresses the question, "What do we want to become" in more specific (often operational) terms by identifying necessary achievements and the milestones which will measure progress toward meeting stated goals.

Organizational Strengths. The philosophy of building strength on strength can become a legitimate planning directive if the strengths are objectively identified. In many cases, "new" directions may be pursued from existing foci of strengths within the organization.

Within-System Inertia. Strategic planning is a continuum of predetermined activites superimposed over an organization with programs in motion. The very idea of building on organizational strengths implies that no strategic plan can be implemented from "point zero." That plan implementation is a complex process is an understatement for the university setting.

Too often, the setting of priorities is viewed as a tantamount to discrete decisions which will mandate the sudden termination of some programs and immediate initiation of others. Addressing priorities should be viewed as implementing a well planned set of activities. Academic agricultural research organizations operate around entrenched traditions, protocols and policies, including faculty status and tenure, and ongoing investments (often heavy investments) in research programs. Successfully evoking change, therefore, must include a reasonable time dimension, a planning profile, which is clearly understood.

Externalities. Gaining acceptance of the principle "we can't be everything to everybody" by clientele is as difficult as developing consensus within the system. This is particularly true during the "denial phase" of dealing with diminishing resources. There are no specific formulas for overriding these forces in consensus development. However, the relative success of any plan hinges largely on the planners' acumen for drawing consensus from user groups.

Consensus Building. The priority-setting process must seek consensus at several levels, especially at the planning (where priorities first emerge) and user levels. Consensus building contributes substance and real direction to the plan. Strategic planning is an iterative process, the dynamics of which allow refinement of priorities through time as the process progresses.

Priority Presentation. Priorities are first identified by central planners (e.g. a planning committee or workgroup). These priorities may or may not be presented in rank order. However, the planners may find, even after identifying only the highest priority areas, that the organization does not, at least at initiation of the plan, have the capacity to accommodate all of the issues. Thus, it becomes necessary at this stage in the process to seek consensus not only as to the highest priorities but the order in which they should be tended. If consensus cannot be achieved relative to rank order, the highest priorities may be grouped into levels (e.g. level 1 representing those to be dealt with first, level 2 = the next "set" of priorities etc.). Three priority levels may work well in most cases. This approach has the advantage of bringing an additional level of order to planning for extremely diverse organizations such as agricultural experiment stations.

STANDARDS

Even though strategic planning usually is engaged with the open admission that the organization cannot be everything to everyone, the number of programs identified during planning as important to the mission often greatly exceed the current and projected performance capabilities of the organization. Thus, the list of priorities identified by planning may have to be pared to a working suite of activities to be implemented over time.

At the risk of over-emphasizing the obvious, the following represent some of the tests of activities/programs that might emerge as potential priorities during strategic planning. More specific criteria will become obvious during the planning process.

1. Is this activity consistent with the vision for the organization? Does this activity contribute to the mission as stated in the plan? (These tests may be relatively weak in most cases because the vision and mission statements are normally broad statements whereas the priority program statements are usually strongly focused. Still, these are the first questions that should be asked when evaluating priorities.)

2. Does this activity offer the opportunity to meet a real need? Does it represent a real (in contrast to a perceived) opportunity? Will emphasizing it truly position our organization to make real difference?

3. Simply stated, is this the right thing to do? Is it an opportunity to do something much better (meet an established need within current and projected resources), "i.e. would we be building upon an established strength and documented performance? Or, alternatively, does it present an opportunity to address an emerging issue?

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4. Do we really believe in this "priority?" Do our users believe that this is a priority? Is this an activity/area of emphasis that will draw collective commitment within the organization and from its supporters?

The setting of priorities is a challenging process, especially during the initial attempts for institutions steeped in tradition. However, true commitment to the plan (to the renewed vision and mission for the organization) is most severely tested by the implementation phase of planning. And the implementation stage can be executed only if there is a set of clearly defined and understood priorities.

COOPERATIVE RESEARCH AND EDUCATION PROGRAMS OF THE SAMUEL ROBERTS, NOBLE FOUNDATION

Michael A. Cawley President, The Samuel Roberts Noble Foundation Ardmore, OK 73401

Thank you for the introduction. On behalf of the Noble Foundation, Mr. Hedger and I appreciate the opportunity to speak with you briefly this morning.

An appropriate question, initially, is who or what is the Samuel Roberts Noble Foundation. The Noble Foundation is a private foundation located in Ardmore, Oklahoma. It was created in 1945 by Lloyd Noble as a charitable trust. Mr. Noble endowed the trust at that time with approximately \$1,000,000. Lloyd Noble died in 1950 and left the bulk of his estate to the Noble Foundation. Today, its assets are valued at approximately \$400,000,000.

Why was the Noble Foundation created? Simply stated, Mr. Noble had a sincere desire to benefit his fellow man. In particular, he was very concerned about the future of the land. It was said that in 1946, approximately 25% of the 16,000,000 acres of farm land in the State of Oklahoma had been abandoned due to erosion, loss of nutrients, etc.

Lloyd Noble was a pioneer in the aviation business. He utilized an airplane extensively in monitoring and managing his oil and gas drilling, exploration and production businesses. Flying in and out of Southern Oklahoma left him with grave concerns about the increasing acreage of surface lands eroding and not being preserved for future generations. Lloyd Noble realized that while the lands were giving up considerable wealth through oil and gas, he knew that these assets would be depleted over time and that eventually, people would again become dependent upon the surface and soil of the lands for their future.

Additionally, Mr. Noble held a much higher reason and purpose for preserving the lands. He stated that:

"On the farms will be found our greatest bulwark against dictatorship. The man who feels secure enough to be without fear has an independence of spirit against which dictators cannot progress. This feeling is evidenced more by men who understand their land and its potentialities than by any other economic group..."

What did the Noble Foundation do to endeavor to accomplish the goals and/or mission of Mr. Noble in creating the Foundation? Initially, the Foundation conducted contests for farmers who dedicated plots in size from one to ten acres for purposes of

producing greater yields in both crops and pastures. The Foundation also conducted gardening seminars and contests in an effort to encourage youngsters to get involved with gardening and to understand how truck farming and truck gardening could be a viable enterprise and occupation.

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In 1951, the management of the Agricultural Division at the Noble Foundation was vested in Oklahoma A&M (now Oklahoma State University). At this time, the concept of agricultural research and demonstration farms as tools to conduct agricultural research and to educate farmers and ranchers developed. This arrangement continued until 1958. In 1958, the Noble Foundation adopted a team approach to advising and consulting farmers and ranchers.

The team approach to advice and consultation is still utilized today. A team consists of specialists in the following areas: soils, crops and forage, livestock, economics, horticulture and wildlife.

Today, the Noble Foundation owns and/or operates four research and demonstration farms and one wildlife unit, containing, collectively, almost 10,000 acres.

The Noble Foundation is committed to enhancing its services to farmers and ranchers and the Agricultural Division is now in the process of recruiting a fourth team of agricultural specialists.

We continue to cooperate today with Oklahoma Sate University and other colleges and universities in a number of different agricultural disciplines. George Hedger is going to discuss with you in particular some of the various collaborative efforts underway.

In 1987, the Noble Foundation created a Plant Biology Division whose purpose is crop improvement through genetic manipulation. Today, this division contains approximately 45 full-time employees, 31 of which are Ph.D.s at the staff scientist level or serving as post doctoral fellows.

The genesis of the Plant Biology Division grew out of our support of plant biological work at The Salk Institute in La Jolla, California. Today, we continue extensive collaborative efforts with the Salk Institute, and the Noble Foundation and the Salk Institute jointly sponsor young scientists known as Noble/Salk Fellows who serve a three-year post doctorate, 18 months at the Salk Institute and 18 months at the Noble Foundation.

The Plant Biology Division is utilizing extensive cooperative and collaborative relationships to further its research. These collaborative relationships are being conducted with, among others, Oklahoma University, Oklahoma State University, Kansas State University, the University of Texas at Austin, Texas A&M, Texas Tech University, Arizona State University, the University of Kentucky, Cornell University and the University of Florida.

More importantly, we are in the process of developing a significant collaborative relationship between the Plant Biology Division and the Agricultural Division at the Noble Foundation. We see this relationship becoming more active in the future, as newly developed crops come out of our Plant Biology laboratory, go into the greenhouse, and from the greenhouse our Agricultural Division will monitor their growth in Noble Foundation fields.

In conclusion, while my pride in the Noble Foundation is certainly unabashed, I am the first to admit that we don't have all the answers in the agricultural area. I am convinced that a considerable portion of the success that we have enjoyed at the Noble Foundation is a direct result from collaborative and cooperative input from other institutions. The Noble Foundation believes that our mission will be best accomplished by pursuing continued collaborative and cooperative relationships.

Thank you for being such an attentive audience and at this time, I want to turn the program over to George Hedger, who is the Director of our Agricultural Division.

COOPERATIVE RESEARCH AND EDUCATION PROGRAMS INVOLVING THE NOBLE FOUNDATION

George H. Hedger, Director Agricultural Division, Noble Foundation Ardmore, Oklahoma 73401

Mr. Cawley has referred to the close ties and good relationships that have existed between Noble Foundation and Oklahoma State University since the establishment of the Noble Foundation. This relationship has been reinforced over the years by university and Foundation personnel involvement in combined or cooperative projects of various kinds. The stimulus for initiation of cooperative projects often comes as a result of professionals from both organizations discussing particular subjects of common interest at meetings such as this.

Our observation shows an increased frequency of collaboration since the mid 1970's. Some of this could be attributed to increased availability of funding for research projects during that time. However, it appears that most of the joint and cooperative projects initiated recently can be attributed to an awareness of common needs and the benefits that combined efforts can provide.

It is our belief that a win-win situation should result from cooperative studies and research. The Noble Foundation has expertise and resources to apply in some endeavors while the university has complementing expertise and resources which Foundation personnel do not have. I am not aware of any problems arising regarding the primary investigator, senior author, or other concerns. On the contrary these aspects are seldom considered when initiating joint studies.

Because of the different mission and goals of both organizations the above concerns are not valid. Whereas publishing and publications are naturally of primary importance to university personnel, they are secondary to the mission of the Agricultural Division of the Noble Foundation. To clarify this consider the fundamental philosophy of the Agricultural Division: The major focus of the Division is consulting with farmers and ranchers within a 100-mile radius of Ardmore, Oklahoma. Research is secondary.

The consultation program is implemented through specialist oriented teams. Three teams, each consisting of specialists in six separate disciplines carry out the consulting program. Individual specialists have only limited opportunity to conduct research or demonstration projects on the farms for which each team has management responsibility. Therefore cooperative research or demonstration work with university researchers has definite advantages for Noble Foundation specialists. The university researcher also benefits from expanded opportunities for studies at sites not available otherwise. Cooperative efforts have had wide acceptance in most departments at Oklahoma State University, and continued joint efforts appear certain. A few of the many projects in which personnel from both organizations have been involved are cited:

Department of Agronomy researchers have joined Noble Foundation specialists to evaluate summer burns (fire) on low seral prairie and range and its effect on species composition over time. Another study involves peanut production under various crop rotations and frequencies. This study is providing new insight into crops best suited in peanut rotations. Field days conducted jointly by both organizations have benefitted peanut producers giving them opportunity to observe first hand the results and trends. The potential for economic benefits has not been overlooked.

Researchers in the Horticulture Department have joined with Oklahoma pecan growers and Noble Foundation specialists in a LISA project to investigate the use of legumes in native pecan orchards. The study will evaluate the potential for legumes to supply the nitrogen needs for tree growth and nut production; and to act as a host plant for beneficial insects with the goal of reducing the need for pesticide applications.

In 1988 the Oklahoma Department of Agriculture, and the Agricultural Economics Department at OSU joined the Noble Foundation to promote International Marketing of Oklahoma pecans. The four-year effort generated numerous contacts, inquiries, and orders for pecans from Europe and the "Far East." Several new products using Oklahoma Pecans are now being introduced by Japanese food manufacturers. A Tulsa firm is involved in pecan exports as a result of this project.

A grazing study, with Animal Science Department and Noble Foundation personnel cooperating involved university horses and Noble Foundation alfalfa pasture. Continuous grazing, rotational grazing, and limit grazing were evaluated in relation to performance (gain) of young horses.

A project to investigate frequency of fungicide applications to peanuts in connection with climatic conditions is being conducted by an OSU plant pathologist on a Noble Foundation farm. The goal is to develop a model for predicting optimum fungicide application times. A similar study with pecans is evaluating various commercial and experimental fungicides for effective disease control.

Projects in which the Entomology Department at OSU and Noble Foundation employees have cooperated include those where funding was provided by the Foundation as well as the site and the crop to work with. These efforts have resulted in concrete tangible results which are currently benefitting Oklahoma pecan growers. A prediction equation utilizing pecan weevil trap data was developed and is in use by producers to effectively time insecticide applications for pecan weevil control. Another project funded by the Foundation and conducted by the entomology department and the USDA resulted in a commercially available pheremone to monitor shuckworm populations enabling pecan growers to more efficiently time their insecticide applications for shuckworm control.

The win-win attitude between Noble Foundation and Oklahoma State University personnel has stimulated a cordial working relationship in all agricultural disciplines. This cooperative spirit prevails in spite of limited research funding provided by the Noble Foundation over the last few years. The ultimate winner in all these joint projects is the agricultural producer who will use the information generated.

THE NATIONAL RESEARCH INITIATIVE AND USDA COMPETITIVE GRANTS

William D. Carlson Director, USDA Competitive Grants Washington, DC 20090

The National Research Initiative Competitive Grants Program (NRICGP) addresses research areas in modern biological, environmental and engineering sciences which are known to possess unique opportunity for improving and sustaining agriculture in concert with social, economic and environmental needs. About 70% of the NRICGP is directed towards the basic, fundamental end of the research spectrum, from which major conceptual breakthroughs emerge. Twenty percent is directed to mission-linked research: research that bridges the basic and applied sciences, resulting in practical outcomes. Ten percent of the Initiative is directed towards attracting new scientists into careers in high priority areas of national need in agriculture. This program provides support for postdoctoral fellows and new faculty and strengthens research capabilities of individuals at small and midsized institutions.

The federal program started in 1978. The pattern over time for numbers of applications and awards, and requested monies and allocated monies are given in Figs. 1 and 2. The NRICGP began in 1991 with an appropriation of \$73 million encompassing and expanding the research programs previously supported by the Competitive Grants Program. The USDA Competitive Research Grants Office (CRGO) assumed responsibility for this expanded program. The newly formed NRICGP continues to seek the best U.S. science to address agricultural problems. Competition is open to scientists at academic institutions, Federal research agencies, private and industrial organizations, and those individuals qualified but not affiliated with one of the aforementioned organizations.

Fig. 1. Numbers of applications and awards through the NRICGP (CRGO)/USDA, 1978-1992.



Fig. 2. Monies requested and awarded through the NRICGP (CRGO)/USDA, 1978-1992.



With enactment of the Food, Agriculture, Conservation, and Trade Act of 1990 (FACT), the Congress took steps to affirm its support of the NRICGP. In Section 1615, the Congress established this initiative as well as defined and identified "High Priority Research" to be covered. High Priority Research is defined as basic and applied research that focuses on both national and regional research needs (and methods for technology transfer) in the following areas: plant systems; animal systems; nutrition, food quality, and health; natural resources and the environment; engineering, new products and processes; and, markets, trade, and policy. Authorizing legislation also required an emphasis on sustainable agriculture where appropriate. In authorizing funds to support the Initiative the Congress further identified specific percentages of available funds to be allocated. These included ten (10) percent multidisciplinary team research (to be increased to thirty (30) percent by 1993), twenty (20) percent for mission-linked research, and ten (10) percent for strengthening as described above.

A Board of Directors, chaired by the Assistant Secretary of Science and Education, was established composed of the Administrators of the Cooperative State Research Service, the Agricultural Research Service, the Extension Service, and the Economic Research Service; the Deputy Chief for Research of the Forest Service; the Chief Scientist of the National Research Initiative Competitive Grants Program; and the Director of the National Agricultural Library with the Associate Administrator of the Office of Grants and Program Systems in CSRS as the Executive Officer. This Board is the focal point within the USDA for determining policy for the NRICGP. Following recommendations by the National Academy of Sciences Board, and Agriculture Department recommendations, 6 science divisions were established in 1993. Those divisions and their important subdivisions are:

- o Natural Resources and Environment
 - Protecting and enhancing water resources
 - Compatibility of agriculture, natural resources and environment
 - Sustaining forest, range and related resources
- o Nutrition, Food Quality and Health
 - Ensuring food safety
 - Optimal human health through improved nutrition
 - Understanding dietary patterns and food consumer behavior
- o Processing Antecedent to Adding Value or Developing New Products
 - Developing processes for new food and fiber products
 - Alternative uses of agricultural products
- o Markets, Trade and Policy
 - Improving competitiveness in global markets
 - Families, communities and rural development
- o Animal Systems
 - Animal health and well-being
 - Biological and genetic enhancement of animal efficiency
- o Plant Systems
 - Pest management strategies
 - Genome mapping and genetic enhancement
 - Biology and management of plant systems

We do not yet have the 1993 funding summaries, but I can give those for 1991 and 1992 (Fig. 3). The proposals, awards and dollars are listed for each division (Tables 1-6). There were a number of topics whose subject did not fall directly within an identified division or program but which are of major importance to science. The support for these topics, labeled "Crosscutting Program Areas" is listed in Table 7. Please note that the data from Table 7 are drawn from the program data given in Tables 1-6. For example, water quality data were drawn from some of the other panels such as Forest/Rangeland/Crop Ecosystems that also addressed water quality issues.

Divisions	\$ in M	lillions
	FY 1991	FY 1992
Natural Resources and the Environment	14	18
Nutrition, Food Quality and Health	4	6.5
Plant Systems	35	40
Animal Systems	20	25
Markets, Trade and Policy	-	4
Processes for Adding Value and New Products	s -	4
Tota	I 73	97.5

Fig. 3. Dollars allocated by subject matter division of NRICGP for 1991 and 1992.

The NRICGP program solicits proposals in several categories. There are the standard research projects, conferences and agricultural research enhancement awards. The latter category, designed to help new, young scientists, includes postdoctoral fellowships, new investigator awards and strengthening awards. Strengthening awards include career enhancement, equipment grants, seed grants and awards to strengthen standard research projects. From the broad category of research enhancement awards, there were 186 proposals funded for a \$16 million in awards.

Awards made in 1992 were 770 out of 3,000 proposals, a success rate of 25%. In 1991 the numbers were 590 awards out of 2700 proposals, or 22%. About 75% of the proposals and 77% of the awards are submitted by scientists at land grant institutions (Figs. 4 and 5). We expect this because of the large research base found at the land grant institutions. However, many new and other institutions are getting into the process and surprisingly, the rate of success is roughly proportional to the number of submissions among the institutions. The process is objective and as fair as we can make it and we encourage all of your to seriously consider preparing a proposal for NRICGP submission.



Fig. 4. Distribution of proposals to NRICGP by institution type.

Fig. 5. Proportion of award monies by NRICGP by institution type.



I think it will be most valuable to most of you to know and understand the process, especially the review, so that you can advise your faculty. There is a program director, who is a permanent staff member of the USDA and a panel manager from outside the USDA. The panel manager is an active researcher required to spend about 25% time in this assignment and is changed every year. Panel recommendations are sent to chief scientists, who for the past 5 years have been members of the National Academy of Science. These people devote about 50% time of this project and deal strictly with the scientific aspects.

The request for proposal (REP) which outlines the process, format, dates, and scientific requirements is sent out just prior to October 1, when the new appropriation bill is finalized. These go to the Proposal Services Branch which then assign them to an appropriate evaluation panel (there are presently 28 panels). About 1/3 of the panel members are selected before proposals come in, the remainder after they are received. This gives us the opportunity to develop a panel to be able to address the technical aspects of the proposals.

We select about one panel member per 10 proposals. For example, we would select 10 panel members to review 100 proposals. A comprehensive review will be made by 3 of the panel members. The distribution of the panel members by rank and geographical distribution is given in Fig. 6 and 7. The route that a proposal takes once submitted is summarized in Fig. 8. Some of the factors used in selecting panel members are:

- o Educational background and experience
- o Representation from different relevant disciplines
- o Representation from different regions and institutions
- o Balanced membership with respect to rank or position, women and minorities
- o Scientific standing in scientific community



Fig. 6. Distribution of evaluation panel members of NRICGP by rank.



Fig. 7. Distribution of evaluation panel members of NRICGP by geographic region.

Fig. 8. Flow of proposals to NRICGP through the review process.



The factors emphasized in evaluation will be of special importance to you. I have summarized those:

- o Scientific merit
 - Hypothesis
 - Objectives
 - Methodology
 - Preliminary data
 - Probability of success
 - Novelty, uniqueness, originality
- o Qualifications of personnel/adequacy of facilities
 - Training
 - Awareness of previous/alternative approaches
 - Performance record
 - Potential for future accomplishments
 - Time allocation
 - Institutional experience/competence
 - Adequacy of support personnel, facilities, instrumentation
- o Contribution of the research to long range improvements in and sustainability of agriculture
 - Conserve natural resources
 - Enhance environmental resources
 - Meet human requirements for fiber and safe nutritious food
 - Increased efficiency of use on nonrenewable and on-farm resources
 - Integrate biological systems and controls
 - Sustain economic viability of farm operations
 - Improve quality of life for farmers, rural citizens and society as a whole

Thus, as you can see, the review process is lengthy and comprehensive. Thousands of proposals are received and processed. The time of many competent scientists is involved in panels and reviews. The reviewed proposal, upon return to the investigator is a valuable document.

One can enumerate the positive aspects of proposal submission, even if the proposal is not selected for funding:

- o The process is prospective, not retrospective
- o It provides a critical assessment of the quality of a proposal
- o The review is done by recognized science leaders for the subject matter

- o It provides constructive advice on how to improve the research process
- o Requires investigators to organize and design the experimental plan in an effective manner
- o It provides intensive training in research evaluation for panel members

In summary, about 75% of the proposals and 77% of the awards are submitted by scientists at land grant institutions. We expect this because of the large research base found at the land grant institutions. However, many new and other institutions are getting into the process and surprisingly, the rate of success is roughly proportional to the number of submissions among the institutions. The process is objective and as fair as we can make it and we encourage all of you to seriously consider preparing a proposal for NRICGP submission.

 Table 1. Numbers of proposals, awards and dollars through NRICGP, 1992 for the NATURAL RESOURCES AND ENVIRONMENT DIVISION.

NRICGP 1992 Natural Resources and Environment

Program Area	Number of Proposals	Award #	Amount Awarded (\$) (in thousands)
Plant Responses to the Environment	190	52	6,979
Forest/Rangeland/Crop Ecosystems*	94	27	3,567*
Water Quality	117	21	3,430
Wood Utilization	108	24	2,132+
Plant Biology TriAgency	•	2	200
Natural Resources Strengthening	-	17	700
Total	509	143	17,008
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*An additional \$93,640 was supported by funds from the Plant Systems Division + An additional \$500,000 from the Processing for Value-Added Division was used for support of wood processing awards

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Table 2. Numbers of proposal, awards and dollars through NRICGP, 1992 for NUTRITION FOOD QUALITY AND HEALTH DIVISION.

NRICGP 1992 Nutrition, Food Quality and Health

Program Area	Number of Proposals	Award #	Amount Awarded (\$) (in Thousands)
Human Nutrient Requirements	116	29	3,664
Food Safety	69	16	2,216
Nutrition Strengthening	-	6	262
Total	185	51	6,142

Table 3. Numbers of proposals, awards and dollars through NRICGP, 1992 for **PROCESSING FOR ADDING VALUE OR DEVELOPING NEW PRODUCTS** division.

NRICGP 1992

Processing for Adding Value or Developing New Products

Program Area	Number of Proposals	Award #	Amount Awarded (\$) (in Thousands)
Processing for Adding Value	143	26	3,634*
Processing Strengthening	-	3	146
Total	143	29	3,780

*Included in this figure are 6 wood processing awards which were reviewed in the Wood Utilization Panel

NRICGP 1992 Markets, Trade & Policy

Program Area	Number of Proposals	Award #	Amount Awarded (\$) (in Thousands)
Markets, Competitiveness, and Technology Assessment	111	24	1,897
Rural Development	84	14	1,765
MTP Strengthening	-	3	130
Total	195	41	3,792

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Table 5. Proposals, awards and dollars through NRICGP, 1992 for ANIMAL SYSTEMS division.

NRICGP 1992 Animal Systems

Program Area	Number of Proposals	Award #	Amount Awarded (\$) (in Thousands)
Animal Molecular Genetics	55	14	2,151
Animal Disease	288	59	9,726
Reproductive Biology of Animals	135	36	5,714
Cellular Growth and Developmental Biology	136	27	5,179
Animal Systems Strengthening	•	20	852
Total	6:14	299	23,622

Table 6. Proposals, awards and dollars through NRICGP, 1992 for PLANT SYSTEMS.

NRICGP 1992 Plant Systems

Program Area	Number of Proposals	Award #	Amount Awarded (\$) (in Thousands)
Genome and Genetics	240	83	12,440
Plant Growth and Development	189	55	5,560
Plant Pathology/Weed Science	209	60	5,770
Entomology/Nematology	266	66	7,288
Nitrogen Fixation/Metabolism	76	34	2,940
Photosynthesis/Respiration	72	28	2,820
Alcohol Fuels	17	3	500
Plant Biology TriAgency	-	2	167
Plant Systems Strengthening	•	28	1,150
Total	1069	359	37,795*

*Includes \$93,640 for an award made to the Forest/Rangeland/Crop Ecosystems Program

 Table 7. Numbers of awards and dollars, categorized by CROSSCUTTING PROGRAM AREAS through NRICGP, 1992.

Crosscutting Program Areas Fiscal Year 1992

Research Topic	Support (in Thousands)	No. of Grants
Plant Genome	\$12,309	95
Forest Biology	7,164	57
Global Change	9,400	83
Sustainable	10,640	97
Animal Genome	5,661	33
Animal Health	11,213	72
Water Quality	4,629	37

GRANT ACQUISITION

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It is a pleasure to spend time with you discussing the significance of research funding for agriculture. Extramural funding has evolved over the last two decades from a component of considerable importance to a critical resource requirement. For example, in 1983 extramural funding for The Texas Agricultural Experiment Station (TAES) provided one dollar for every two dollars available in appropriated funds. In contrast, the TAES extramural funding for the fiscal year 1992 provided slightly more than one dollar for every appropriate dollar. This is a significant increase of support from extramural sources over the previous decades.

The shift in funding source requires a realignment of priorities for effective research management. Research Administrators must insure that the mission of the Center(s) and the needs of the clientele are met. Appropriated funds can be utilized to maintain a minimal level of research activity while providing the funding necessary to collect the preliminary data needed for successful development and response to external solicitations. These funds broaden the research effort and leverage the appropriated funds. In summary, judicious management of all available research funds, regardless of source, results in a Center responding to the mission and clientele requirements proactively.

In order to initiate an effort of this magnitude the Administrator(s) must have access to the various funding sources. Knowledge of these sources is of limited value without descriptive materials defining the program(s), evaluation criteria, funding allocations, etc. Proposals prepared in response to a solicitation must address the specific objective(s), evaluation criteria, and format outlined by the sponsor.

Funding Sources

Potential funding sources are generally placed in one of four categories:

0	State Agencies	0	Federa	Agencies
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o Private Sector o Foundations

<u>State Agencies</u> - A wide range of state supported agencies exist to support agricultural interests. The impact on extramural funding varies from state-to-state, but the importance of this support is increasing. In most instances the interests may not be related to production agriculture, but rather biological, environmental, social and recreational efforts affected by agricultural activities directly or indirectly. State

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agency support is normally restricted to organizations within the state active in meeting the needs of the specific clientele identified in the statement of work. These agencies include the Agriculture Department, Water Commission, Water Development Board, Health, Economic Development, Air Quality and numerous others.

<u>Federal Agencies</u> - Federal funding is available in all phases of research directly and indirectly related to agriculture. In the past, agricultural research was funded primarily by the U.S. Department of Agriculture; however, with the advent of new technologies and techniques a variety of agencies now support agricultural research related to the non-agricultural mission of the agencies. The most visible support agencies for agriculture related research currently are:

0	USDA	0	NSF
0	DHHS/NIH	0	EPA
0	DOE	0	NOAA
0	ONR	0	ARO
0	AFOSR	0	NASA

This list is not inclusive. In fact, a recent review of TAES extramural support indicated acquisition of funds from twenty-five different federal agencies, departments, and programs. In summary, federal agencies have funds available on a competitive basis and the agricultural community must compete for these funds.

<u>Private Sector</u> - Corporations are interested in funding research contributing to their primary thrust(s). In the past barriers existed between for-profit corporations and non- profit organizations such as universities. Due in part to the rapid technological advances of our society, it is recognized that partnerships between these two entities complement the mission of each organization by leverage of resources to obtain a common goal. The legal basis have been implemented to encourage cooperation in research areas of mutual interest(s). In most cases the opportunity for success is increased if contact with the corporate scientific and administrative staff is initiated by the institution.

<u>Foundations</u> - Funding available from private foundations is primarily generated from interest income from investments or trusts. Thus, during good economic times funding is more readily available than in adverse economic conditions. As with soliciting support from corporations, personal contact with the representatives of the foundations enhances the opportunities for securing extramural support.

A Center Administrator must be aware of the Foundations within the geographical region of the Center. Most Foundations prefer to support efforts within their local area; thus, it may be possible to acquire extramural research support as well as funding for maintenance and facilities support.
Personal contact with potential sponsors enhances the success rate. The relationship with the potential sponsor is strengthened if the scientist(s), Center Administrator, and/or a representative from the "main station" establishes a rapport with the program officers and/or administrative officials of the agency. Regardless of the individual(s) making contact with the potential sponsor, a sales document, preproposal, is needed. This document will promote the research interests and expertise of an individual(s). The preproposal concisely presents the interests and abilities of the scientist or collaborative group by providing an outline identifying:

- o What has been accomplished? (specific contact with problem)
- o What is currently being pursued? (preliminary data)
- o What will be achieved? (proposed effort)

Preproposal

Preproposal components are concise and include the following:

- o Title: End-product should be identified
- o Objectives: Specific research effort with organism, process, function and other activities identified
- o Problem: Indicate working knowledge and hands-on experience
- o Methods: Design, collection, and analyses of data including reference to preliminary data
- o Significance: Identify technical and socio-economic benefits to be generated.

A preproposal should be an orderly document limited to two pages. References should not be cited since this an effort to "sell a scientist and idea." No specific funding level or duration or the proposed project should be included.

Preproposals should be utilized with all types of funding sources to initiate discussions relative to the specific expertise and desires of an individual scientist or unit.

Acquisition of Source Material

Specific program announcements, guidelines, application kits, and other descriptive materials are required to respond competitively to an agency for extramural support. A simple individual request is typically all that is required to be placed on state and federal agencies active mailing lists. Electronic submissions of data is also utilized by the various agencies including the NSF, NIH, DOE and USDA. Additional publications are available that provide information on potential funding opportunities. These include:

o <u>Federal Register</u> - is a daily publication providing data on federal activities, particularly specific programs and administrative provisions.

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- o <u>State Registers</u> is typically a weekly or periodical distribution summarizing state legislative and agency activities including requests for proposals.
- o <u>Commerce Business Daily</u> is a daily publication listing specific federal agency request for proposals (RFP) and services. Provides summary data with brief project description, agency contact, anticipated release of the solicitation, and due date.
- o <u>Grant and Contract Weekly</u> provides summary data of title, abstract, and contact point of selected federal agency programs as well as reference to some foundations and for-profit corporations.
- o <u>Grant Advisor</u> is a monthly publication which includes abstracts of select agency programs and includes a list of numerous deadline dates for specific programs available.
- o <u>Trade and/or Society Publications</u> will frequently provide information on competitive programs.
- o <u>National Directory of Corporations</u> provides a guide to corporate support programs.
- <u>The Foundation Directory</u> provides a listing of major foundations summarizing the types of support, restrictions, contact points, and brief financial status of each reference by state.
- o <u>State Foundation Directories</u> identifies specific foundations located within a specific geographical area and summarizes the types of support, restrictions, contact points, etc. May not be available in all states.

There are many sources of information available to identify extramural funding sources. A Center Administrator can, with the knowledge of the scientist's needs, select one or more sources to provide potential resources to meet the mission the Center.

Proposal Preparation

Guidelines provided by the sponsor must be studied in depth to determine the program mission, specific areas of interest, duration, evaluation criteria and funding level. This information must be utilized in conjunction with the prescribed proposal format defining specific sections, sequence of occurrence, specific length, type size and page margins. The text should address the specific evaluation criteria to be utilized by the review panel(s). Familiarity with the program materials will enhance the chance of success; in contrast, failure to adhere to the guidelines can result in proposal rejection.

One program manager suggests developing an outline of the anticipated publication(s) derived from the proposed research. The outline serves as the basis for development of the proposal with program design, techniques, equipment, data collection, analyses and interpretation required to provide the identified end-product.

Preliminary data should be available and used in proposal preparation. These data reflect scientific involvement in the solution of the research problem. The preliminary data can be used to identify the end-product.

Proposal

The proposal is an orderly planned and prepared sales document to the sponsor. It reflects adherence to the guidelines and format. In addition, it identifies the problem and technically sound methods to achieve the identified end-product in an innovative way. The ultimate goal is to provide the reviewers with an innovative, concise document that is gratifying to read.

The technical presentation must be supported by a well-prepared and justified budget. Detailed budgets should be realistic for the effort proposed. The cost components must address the specific allowances of the program and adhere to the institutional policies and procedures. Costs are to be projected in a uniform method; therefore, adherence to the institution's indirect costs agreement and method(s) for estimating salaries and fringe benefits is required. Time commitments of the professional staff are generally satisfied by the employer (Center) providing a portion of the scientists time at no cost or requesting a portion of the salary from the potential sponsor. A combination of these two methods may be utilized within a single proposal. Some programs require a cost sharing contribution by the institution towards the total project costs. NSF requires a nominal 1% cost sharing on basic programs, while EPA requires a 5% cost sharing contribution. Specific programs, especially those developed to support social or educational needs, require dollar for dollar matching funds. The budget is a vital component of the proposal and is often a portion of the evaluation criteria considered in award selection.

The final competitive proposal still has one hurdle to complete--meet the deadline due date. Failure to meet the sponsor deadline will result in rejection.

Summary

It is difficult for Center programs to serve their clientele and encourage the professional growth and development of the professional staff with only appropriated funds in the current economic environment. Extramural funding is a resource that is crucial to the ongoing vitality of the Centers, professional staff, and institution.

ADMINISTERING GRANT & CONTRACT SOLICITATIONS & IMPLEMENTATION

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INTRODUCTION

In 1992 state and federally appropriated funding for agricultural research in Louisiana was about the same as it was in 1985. Research costs significantly increased during that period due to factors such as inflation, higher costs for scientific equipment, and newly mandated administrative requirements. In face of the imbalance between funding and costs, administrators of agricultural research are faced with tough decisions. When expected revenues do not meet anticipated needs the alternatives are limited. If research programs are to be maintained the only alternative to increasing revenue is to economize and that usually cuts into programs. Budgetary shortfalls have been dealt with through a combination of cutting costs and increasing revenues. The reducing of costs versus the increasing of revenue scenarios must be balanced. Reducing costs without cutting programs may be only marginally effective, particularly in light of the many legally mandated requirements constantly imposed on administrators. Increasing revenues usually translates to going after external funds, i.e., grants and contracts.

The objective of this paper to examine how we go about implementing and managing external funding in the Louisiana Agricultural Experiment Station. We will examine the external funding process from three perspectives: (a) finding potential funding sources, (b) getting commitments for the funds, and (c) spending the funds appropriately. The process is not unilateral on the part of the Experiment Station. All involved parties, including scientists, administrators, funding source sponsors, agricultural clientele and consumers/taxpayers, should have some input into the process.

As a point of departure let's set the agenda for agricultural research. From Louisiana's perspective, research programs are designed to develop agriculture as a viable economic endeavor for the producer, the processor, the marketer and the consumer. We recognize that agriculture is an important part of the state's economic future and in a 1990 self-study/strategic plan entitled "Focus 2000: Research for the 21st Century", set as our mission:

"... to enhance the quality of life for people through basic and applied research that identifies and develops the best use of natural resources, conserves and protects the environment, permits further development of existing and new agricultural and related enterprises, develops human and community resources in rural and urban areas, and fulfills the acts of authorization and mandates of state and federal legislative bodies."

Agricultural research encompasses the tenets of most scholarly endeavors such as the search for new knowledge, academic freedom and professional advancement. But we acknowledge that our programs have additional morally mandated requirements. We must be responsive to the needs of society for a biologically, economically, and environmentally sustainable agriculture. To that end our search for external funding must be directed. We must seek and acquire external funding to enhance our mission and we must be cautious when accepting funding that may lead to research contrary to our mandate. We must not reject our obligation to basic research, but must strive for an optimum balance with applications.

FINDING EXTERNAL FUNDS

Most scientists conducting agricultural research have some level of funding from state and/or federally appropriated sources. In the context of State Experiment Station funding through USDA/CSRS all projects have reporting requirements but hardly ever have enough of those appropriated resources to complete the research. The question in many instances is: "Where can we find funds to support research that is either in the planning stage or already underway?"

COMPETITIVE GRANTS/CONTRACTS These opportunities for funding generally require rather lengthy preparation, are usually subject to peer review and quite often are not funded. Often the response time is unrealistically short. Funded projects tend to be those that are more basic in nature. While these grants are often relatively large, a faculty member's entire research program may need to be reoriented in order to be competitive for this type funding.

Competitive grants/contracts can be broadly grouped into several categories. Government Agency grants are generally part of a special program to foster and develop science. The USDA National Research Initiative (NRI) is a rather recent federal program focused on food and agriculture and has subprograms in most of the areas important to production agriculture. Other USDA grants programs include water quality, sustainable agriculture, integrated pest management, pesticide impact assessment and biotechnology. Many other federal agencies offer competitive grants of interest to agricultural scientists including NSF, EPA, NASA, and the Departments of Energy, Interior and Defense.

Many State Agencies also offer competitive grants. In Louisiana we have a constitutionally protected educational trust fund that provides up to \$25 million annually in competitive research grants. Agriculture is a recognized discipline so we can compete quite well for those funds. Faculty from non-agricultural institutions are sometimes awarded these grants. *Private Companies/Foundations* also offer competitive grants.

Proposals for these grants are often not as critically reviewed as are government agency proposals but may be more narrowly limited as to topic and geographic area.

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Commodity checkoff funds at the state and national level can be competitive but are special cases. In many ways they are like state or federally appropriated funds in that they come from a public group, and the funds are usually allocated under state or federal guidelines. They differ in that the research they support may be selected by a committee of producers. Working through clientele groups to design and implement research that they select can be very important in setting the entire research agenda for an experiment station. A healthy partnership can develop that benefits the entire research endeavor. Producers have a direct impact on what research is done and, in the long run, results of research must satisfy the needs of the producers. All should be aware, however, that research which is too broadly focused on immediate needs of producers runs the risk of not being able to provide answers for difficult problems that arise in the future. Balance between applied and basic research must be maintained.

Competitive grants focus attention on the faculty members research and frequently, once a program is funded, additional competitive grants are easier to obtain as the scientist becomes more widely known in the professions. The likelihood of serving on peer panels increases as a scientist becomes more successful in securing competitive grants. This allows the scientist to influence which projects are funded and keeps him/her abreast, at an early stage, of related developments at labs around the world.

One limitations of competitive grants is that they are often not available in many applied areas. Faculty members successfully seeking competitive grants may find their research being directed by the source of funds rather than the needs of agricultural interests of the state. The mission of the Experiment Station may be subjugated.

"WIRED" GRANTS/CONTRACTS Some external funding is relatively certain due to its source. Often these sources require some type of formal proposal or application and there may be some internal competition but the money is in place and one is assured that funding will be forth coming. Faculty tenure committees usually frown upon these types of awards as measures of ones academic prowess, but they can provide significant revenue for operation of research programs, and some of them do not require much of the bureaucratic reporting common for many competitive grants.

Special grants, sometimes referred to as "Pork", out of Washington are often "wired" for a particular institution and usually don't have a lot of strings attached. Special grants have a bad reputation in many academic circles since they do not have to stand a peer review. They are usually political in nature, and often a special interest group provides the clout required to obtain funds that may be dedicated to a particular program. A research administrator must balance the need for research funds with any ill will among colleagues. Many academicians believe that "pork" results in fewer funds available for peer reviewed competitive funds while others think that the reason for "pork" is that the peer review process is in itself "wired" to the exclusion of the lesser institutions and more practical programs. Lingering questions are: How can the best decision be made on what research to fund? Should the scientific community through peer review decide or should it be the political process or, perhaps, a combination of both? Don't overlook special grants. Last year over \$146 million or 20% of total federal "pork" was allocated for agriculture. Of federal academic "pork" appropriated in 1992 over \$150 million came to the southern region.

Single Source contracts for specific research is sometimes offered by governmental agencies or by private companies. While this type of funding has strings attached and usually specific "deliverables" are required, a scientist can often have a steady funding supply through contract research. There is a danger that securing this type of funding becomes an end in itself and that the more important mission oriented program will suffer. Administrators must be sensitive to the funding needs of the faculty and not exert undue pressure to obtain contract research that may impede more important projects. Field testing of new products for private companies can sometimes provide a source of funding and at the same time enhance other research. Other good sources of such funding may be through various state and federal agencies charged with conducting environmental programs.

Over time a working relationship may develop between a faculty member and some individual in an agency that needs certain research work. This may lead to a "sugar daddy" or a "Connection" that can lead to steady funding. The agency administrator or "sugar daddy" knows that a certain faculty member, station or department will always come through in a timely manner with quality research at a reasonable price. Again, with this type of external funding one runs the risk of loosing control over the direction the research program takes. Caution is required to insure that a one doesn't become just a contract researcher.

UNRESTRICTED GRANTS/GIFTS are probably the easiest external funds to spend as they generally have few or no restrictions. Getting these types of funds is sometimes unexpected, and in other instances may require a long "courting" process.

Private Companies often provide unrestricted gifts and/or grants to support research in which they have a vested interest. A company that markets herbicides may, for example, give an unrestricted grant to a station that conducts weed control research. As an administrator one must be careful not to become dependent on such funds as recommendations must be absolutely independent.

From time to time a station may get a *Gift* with no strings attached, from an individual or business. Sometimes such gifts are totally unexpected, but frequently they may be in appreciation for some program conducted by the station. Regardless of why the gift was given, one should not become dependent on such unexpected windfalls in the day

to day operation of a program. They are nice to get, but don't sit around waiting for them.

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Endowments are special and may require a lot of ground work. One should always be ready with some needed project if a sudden opportunity for an endowment comes along. Many families or individuals who have large estates have a desire to leave something for future generations. Projects such as new buildings, special research projects, endowed professorships and scholarships appeal to many. If you are approached about an endowment be sure to work through the appropriate Foundation representative for your institution. They can suggest many ways to encourage such giving by providing tax advantages and other incentives.

GETTING EXTERNAL FUNDS

After a source of external funding compatible with the mission of your program has been identified and the faculty member has a reasonable chance of being successful, the next step is the preparation of the proposal. There is much folklore on "grantsmanship" and a lot has been written on how to be successful. The bottom line is to prepare a proposal that: (a) meets all of the technical requirements of the request for proposals (b) is innovative and attracts the attention of the reviewer, (c) convinces the reviewer that the principal investigator is competent to complete the proposed research and (d) has a reasonable price tag, i.e., has a realistic budget.

PREPARING PROPOSALS In making grant and contract proposals paying attention to detail is critical. Regardless of how exciting the research or how impressive the credentials of the principal investigator, many detailed instructions must be carefully followed.

Follow Request For Proposal Requirements (*RFP Requirements*) to the letter. For example, some of those items are: (a) submitted and/or received by date due, (b) does not exceed the required length, (c) correct number of copies submitted, (d) proper format followed, (e) funds requested are within limits established, (f) unallowed items are not requested, (g) proposal is for the research identified in the rfp, etc. It pays to scrupulously follow the requirements of the rfp. It is unfortunate when a proposal doesn't make it to the peer review process because it has been rejected due to a technical deficiency.

Budget preparation is one of the most perplexing problems for many scientists. This is often due to esoteric forms prepared by accountants that do not reflect the nature or scope of the project and do not conform to the usual accounting procedures of the home institution.

To develop a reasonable budget the scientist should first prepare a working budget based on what the project will require to complete from his/her perspective. Items necessary to complete the project such as personnel, labor, equipment, supplies, travel, professional support, etc. should be decided upon in consultation with the station director or other appropriate administrator. The responsible scientist is usually in the best position to decide what will actually be needed. However, costs for support generally provided by the station such as field preparation, and animal care may not be clearly understood or recognized by the scientist and the station director must be involved in deciding on the actual needs. After the scientist and station director have determined project requirements it is usually desirable to work with someone in the institutional grants and contract office to insure that salary and wages are within university guidelines and that allowable percentages for fringe benefits and indirect costs are used and other university administrative requirements are satisfied.

For *fixed price* grants/contracts budget details are less important. With these types of grants the institution agrees to perform the research for a fixed level of funding. Detailed budgets are not required and considerable flexibility is allowed. If a fixed price option is available it should be taken.

Constant administrative and accounting hassles result from *cost sharing* or *matching* provisions. A sponsor may require that an institution show a commitment to proposed research by pledging to share in the overall cost of the project. Additional support over that provided by the sponsor can be pledged by the institution as "cash" or as "in-kind." A cash match is usually easy for accountants to document if it is in certain categories tracked for such purposes by the institutional accounting system. Often personnel charges including fringe benefits and overhead are the only category accountants will certify for match. In-kind matches such as use of facilities are more difficult to document and are avoided, if at all possible, by accountants. From the perspective of many scientists and research administrators, cost sharing provisions are bureaucratic and accounting nightmares that have little or no relationship to the reality of accomplishing the research called for in the contract. This can be detrimental to programs by adding to the administrative overload. The match is often in the salary of the principal investigator. It seems redundant to require that as a match since the p.i.'s responsibility is to complete the project regardless of whether a match is committed.

ASSURANCES For most federal and state grant and contract proposals *compliance* with various legal requirements must be certified. Generally, these assurances require separate approvals by an authorized university official such as a vice president or chancellor. Some of the more common assurances frequently required are: institutional review board for animal care and/or use of humans as subjects, use of recombinant DNA and biosafety, equal employment opportunity, assurance that funds will not be used for lobbying and a disbarment provision.

Accounting practices are often referred to in the fine print of rfp's. Usually the reference is to the single audit clause that is established through some federal agency. One federal agency has the responsibility for conducting audits in each state and other federal

agencies agree to accept that audit. The federal audit guidelines are identified as OMB Circular A-110 "Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals and Other Non-Profit Organizations." Documentation of the procedures is voluminous. It is best to leave audit decisions to university accountants and try to work with them if audits are necessary. 1

Required *approvals* vary from university to university but generally all administrative channels should be covered. The administrator of any unit that is necessary to complete the research should be required to sign off on the proposal routing sheet. This usually avoids future misunderstandings that may jeopardize successful completion of the project.

NEGOTIATING After a proposal has been accepted and a tentative award made there are often issues to be addressed between the university and the sponsor. Generally these issues can be resolved without to much difficulty as the are usually technical in nature. Negotiations to resolve inconsistencies should be carried out by the grants and contract office rather than the scientist or station director unless the issue of contention relates to the research objectives or protocol. This helps to avoid ruffled feelings between the principal investigator and project officer. Low key negotiations can often keep molehills from becoming mountains. Items that often must be resolved in negotiation after an award has been made include provisions for subcontracts, property rights and university liability.

Often a research contract or grant requires that part of the work be under a *subcontract* to another institution or entity. It is important that provisions for such subcontracting be agreed to in the initial contract. Generally work by other departments or stations within a university do not require a subcontract, but appropriate accounting procedures must be followed in expending funds.

Disposition of intellectual *property rights* such as inventions and copyrights can become a big issue. Fortunately, with most federal grants the government allows the university to retain the right to commercialize any technology that may arise with minor restrictions and limitations. For private company contracts and for most commodity checkoff funding programs there are usually unresolved issues of ownership to be addressed. Generally, the university should insist on ownership of technology developed by a university employee regardless of whether the research was funded by an external grant or contract. A grantor, particularly a private company, may be given some protection on their investment with an option or a right of first refusal for licensing any technology developed through their funding. It is best to let the university grants and contracts office handle these negotiations. Often legal counsel is required.

University *liability* is another issue that must be carefully considered. While this is obviously a legal question, the station director must always be cautious when accepting products for testing. The university must assume the responsible for using products in a

safe manner and according to labeled directions but the company providing the product should assume liability for any inherent risk when using their product according to their instructions. This is fertile ground for university lawyers to explore. Once a clause on liability is agreed to by legal counsel that language should be used in future contracts.

SPENDING EXTERNAL FUNDS

A good "rule of thumb" to follow when spending external funds is: "There is no rule of thumb for spending external funds." Another way to say the same thing is that "all grants are not created equal." Down through the years many research station scientists have grown to equate all external funds with unrestricted grants or gifts. A familiar explanation of why certain unallowable expenditures have been made is: "These are grant funds and I can spend them anyway I wish." While this may still be the case in some instances, most grant and contract funds must be spent within the guidelines of the contract.

BUDGETING Budgets are plans for expenditures and, particularly with "cost reimbursable" contracts, they become the expectation for how funds are to be used. A cost reimbursable grant is one for which payment is made to the university only after the funds have been spent according to an accepted budgetary plan and a formal invoice has been submitted by the university accounting office. Generally, the proposal has spelled out in detail how the funds will be spent and the budget finally agreed to in the contract is the one that must be followed. Any substantial departure from that established budget requires approvals of some sort.

Usually *fixed price* agreements do not have many of the budget limitations common to cost reimbursable contracts. For example, with a fixed price contract, the funds are considered to pay for the deliverable and not for specific expenses that produce that deliverable. That removes the requirements of spending within the strict confines of a preaward established budget. Even with fixed price agreements it is recommended that a realistic budget that directly relates to deliverable be established. This can be particularly important if questions arise as to what work was actually done or if an audit is conducted.

Perhaps the most misunderstood budgetary item is the *indirect costs or overhead*. Most faculty members have a rather jaundiced view of overhead. They view it as somewhere between an unwelcome tax and an outright administrative "theft" of their research funds. Administrators usually view overhead as another source of funds to cover costs of research and to plug budget gaps. A lot of the problem that faculty have with indirect costs is that they do not see any benefit accruing to their research. The correct interpretation is probably somewhere between what the faculty member sees and what the administrator sees. In practice, a good policy is to keep as much of the funds as possible for direct expenses. Often the overhead percentage can be negotiated. Audits are not usually performed on most accounts. Sampling procedures are used so you have a good chance an audit will not take place unless there is some misunderstanding with the granting agency, or other problems with the research. Audits should be handled by the appropriate university accounting office, not by the faculty member or station administrator. Do not attempt to give information that is not requested by auditors as they are looking for very specific information and, quite often, it doesn't seem to be at all related to achieving the objectives of the project. The best way to avoid problems with audits is to spend funds in accordance with the established budget and file all required progress and final reports in a timely manner.

MID-TERM CHANGES Frequently some change is necessary during a project. Items such as *budget adjustments*, *change in principal investigator*, *or changes in the scope of the project* usually require either sponsor approval or notification. Any time a change is contemplated it is critical that the contract be carefully evaluated to see what must be done. For many USDA contracts budget adjustments of no more than 5% are allowed under institutional procedures, often with sponsor notification only. Exceptions to this blanket approval are for additional travel, equipment and certain other expenditure categories. Nearly always when a budget change is requested it must be thoroughly explained and documented. Most contracts have established provisions for amendments, termination, cancellation or changes. Those provisions should be carefully followed.

CLOSING OUT For accountants the close out of a contract is often trying. Unresolved issues regarding expenditures that may not have been made in accordance with provisions of the contract must be addressed. The scientist should remember that the financial officer puts his/her signature of approval and certification on the final billing attesting that all necessary provisions have been met, and that expenditures have been made in accordance with all requirements of the agreement.

Many agreements require various progress reports as the research is taking place and most require a *final report*. This final report is frequently the "deliverable". Accountants usually will not issue a final invoice to a sponsor until they have the final report on file. This gives them some assurance that necessary deliverables have been made. Other documentation or reports are sometimes required, and the principal investigator is usually the party responsible to see that all such reports are submitted to the sponsor. It is a good idea for copies of the final report to be kept in various administrative offices.

Frequently when a principal investigator nears the completion of a project *unspent* funds remain in the budget. When a project comes in under budget, the reason is often due to unforseen resignations, lower costs than projected for equipment and other such factors. If, in fact, the costs for the project were lower than anticipated then it is appropriate that funds be allowed to go back to the sponsor. However, often there are cost overruns for other items or categories that can be justified. In those cases it is usually necessary to get sponsor approval for such budget changes prior to termination date of the contract. If a project legally terminates with money still in the budget or without authorized budget changes, funds are often lost. Any requests for last minute budget adjustments should be very well documented and justified.

If a project cannot be completed on time an *extension* should be requested. It is usually easy to get a no-cost-extension that allows for a later termination date but does not provide any additional funds. These requests must also be submitted in a timely manner prior to project termination date.

CONCLUSION

External funding of research through grants and contracts has become a necessary source of support for many experiment station programs. Administrators should use deliberate caution in securing outside funding. Commitments must be carefully matched against the mission of the program. Externally funded research should be chosen on the basis of how it can compliment or enhance that mission. Care should be taken to insure that the mission is not compromised. Scientists should be constantly aware of what, if any, deliverables are required by a contract. All should recognize that there are more restrictions on how some external funds are spent than others. Finding sources and securing commitments can take a lot of time from the scientist and the administrative staff. The signed contract is the legal document that establishes the requirements of the contract. Questions about allowable expenditures and what procedures to follow when making changes are usually spelled out in the contract. When in doubt, contact the university grants and contracts office for clarification, guidance and advice in complying with contract This can often save a lot of extra work and grief for the principal requirements. investigator and the station director. Remember, "All grants are not created equal."

CLEAN AIR ACT AND PESTICIDE UPDATE

Mark Sather Air, Pesticide and Toxics Division U.S.E.P.A. Region 6, Dallas, TX

The Clean Air Act, as amended November 15, 1990, contains the following provisions:

- o Provisions for attainment and maintenance of national ambient air quality standards.
- o Provisions relating to mobile sources
- o Hazardous air pollutants
- o Acid deposition control
- o Permits
- o Stratospheric ozone protection
- o Provisions for enforcement
- o Miscellaneous provisions
- o Clean air research
- o Disadvantage business concerns
- o Clean air employment transition insurance

In regard to ozone, the general equation for formation (tropospheric) is

 $NO_x + VOC \longrightarrow O_3$

the standard (ozone national ambient air quality) is attained when the expected number of days per calendar year (with maximum hourly average concentrations greater than 0.12 ppm [235 ug/m^3]) is less than or equal to one.

With regard to pesticide application, an alternative control techniques document has been developed. The control of VOCs from pesticide use may benefit ozone nonattainment areas. EPA is developing the document which will contain:

- o An estimate of the VOC emissions nationwide associated with pesticide use
- o Identification of control options
- o An estimate of environmental and cost inputs from control alternatives

The ambient air quality standards for total suspended particulates has been revised from the old standard which permitted 75 ug/m^3 annual or 250 ug/m_3 daily. The new standard which relates numbers of PM 10 particulates is 50 ug/m^3 annual or 150 ug/m^3 daily. The change was effective July 1, 1987 and is found in the Federal Register volume 52, number 126.

Several areas of the USA are designated nonattainment for PM 10 particulates, by emission type, which are:

- o Areas nonattainment due to stationary source emissions
- o Areas nonattainment due in part to word smoke emissions
- o Areas nonattainment due to fugitive dust emissions
- o Areas nonattainment due to multiple types of emissions

The major areas of nonattainment are the western US, including Texas the Great Lakes States.

The PM 10 emissions are especially important to agriculture because of potential adverse health effects. The soils, wind erosion, agriculture and particulate studies (SWEAPS) involve the EPA (region 6 and headquarters), USDA-ARS (Big Spring, TX), SCS (Texas and South National Technical Center), Texas Dept. of Agriculture, Texas Cooperative Extension Service, Agricultural Stabilization and Conservation Service, Texas Air Control Board, City of Lubbock, and Texas A&M Research Center at Lubbock. The data being gathered will be used to more accurately determine ambient PM-10 emissions from agricultural soils under varying meteorological conditions.

The wind blown dust equation, based on the EPA document, Control of Open Fugitive Dust Sources is:

$$E = kaIKCLV$$

where:

- E = PM-10 wind erosion losses (tons/acre/yr.
- k = estimated fraction of the total suspended particulate which is PM-10
- a = 0.025, the portion of total wind erosion losses that would be measured as suspended particulate
- I = the soil erodibility factor in tons/acre/yr
- K = surface roughness factor
- C = climatic factor
- L = unsheltered field width factor
- V = vegetative cover factor

The estimated erosions resulting from agricultural tilling is:

$$E = K (4.8) S^{0.6}$$

45

where:

- E = PM-10 emissions from agricultural tilling operations in lbs/acre
- K = 0.21, particle size multiplier for PM-10

S = silt content

EPA has proposed projects in the San Joaquin Valley, CA; with the Northwest Wind Erosion Air Quality Task Force in Idaho, Oregon and Washington; and with Texas Tech on a wind erosion study. The long-term goals of EPA are:

- o Develop a PM-10 module to the WEPS which will accurately estimate emissions due to wind erosion.
- Quantify emission reduction resulting from implementation of the conservation provisions.
- Obtain technical assistance/support from USDA in identifying and analyzing soil types susceptible to generating PM-10 emissions.
- o Gain a better understanding of the implementation and compliance of the conservation provisions.
- o Provide assistance in public outreach.
- Meet with USDA official to discuss EPA long-term goals and the need for joint policies.
- o Provide input on air quality benefits to 1995 Farm Bill.

Clean Water Act and Water Management

Kenton Kirkpatrick Deputy Director, Air, Pesticide and Toxics Division U.S. E.P.A. Regional 6, Dallas, TX

I appreciate the opportunity to meet with the RCAS because agriculture groups have such an impact on the environment and natural resources. I represent region 6, EPA, which is responsible for a 5 state-region (Louisiana, Arkansas, Texas, Oklahoma and New Mexico). Environmental and farm groups can share information and technology and mutually determine where the problems and the emerging issues are and especially enlist the expertise of experts.

Most of the discussion this morning will be concerned one way or another with the Clean Water Act and Safe Drinking Water Act. We have had some forums dealing with emerging environmental issues in the past few years and maybe some of you have attended. One included a 5 state meeting at Dallas and consisted of the Extension service, Soil Conservation Service and the Agricultural Stabilization and Conservation Service. We also participated in a similar conference at a Louisiana station.

Carol Browner, the new administrator of EPA, is from Florida and has extensive experience in environmental affairs, both from the federal and state legislative level. She is presently assembling her assistant and regional staffs. The emphasis in the past in EPA has been in controlling toxic substances and we are doing that better now. However, I suspect the emphasis of the EPA leaders will continue in that direction.

Congress mandated through the 1986 amendment of the Safe Drinking Water Act and the 1987 Amendment of the Clean Water Act that a more complete job to be done in controlling toxic substances in the waters of the US. Congress was very prescriptive in the Safe Drinking Water Act. They mandated that the EPA add about 25 additional toxic substances to the list of monitored contaminants. That is prescriptive legislation from the perspective of we who deal in federal or state legislation. We have not experienced this type of interacting in such a precise manner. There is also some discussion about amending the Safe Drinking Water Act to reevaluate some of the mandates and maybe slow down the rate of enforcement. About 60 contaminants are now on the monitoring list. We started with 25 and have to add several every year, driven by legislation.

The Clean Water Act concerns the water in rivers, lakes, and coastal areas. We are directed to control toxics in a stronger sense than we have in the past. The Clean Water Act has had an impact on reducing toxic materials and we have a closely controlled monitoring of the conventional pollutants. Biochemical oxygen consuming substances that are being discharged into the water are also of concern. There are possibilities that some toxic substances may be in ambient waters and some of those accumulate in fish. This of course can lead to human consumption.

Pollution prevention is the primary goal of our environmental programs. There is a cultural change taking place in America and people are being asked to change their mind set. Recycling and reuse water are things some of you, but not by any means all people, have been doing for a long time. I grew up in Kansas in an agricultural community. My grandfathers were farmers, so I know that in agriculture in rural America efficient recycling has been going on for a long time.

There is a great deal of concern for groundwater protection. Of course, there is the Superfund Program and the Resource Conservation Recovery Act which mandate the cleaning up of the abandoned hazardous waste sites found all over the country. We are in the process of cleaning up those old sites. There is a growing interest in Congress to regulate the protection of groundwater. I think there were 10 to 15 bills introduced in the last session of Congress to thrust the Federal government more into groundwater protection than in the past. Protection of groundwater is now getting the emphasis that surface water received in the 1950's.

Many in the EPA take the position that we presently have enough legislation. The problem is the massive task of enforcement. The Federal government intends to control and prevent water pollution throughout the country. We, the EPA, do not presently advocate legislative action on groundwater, but there are many who believe the solution to the problem of contamination of water is through legislation. I feel sure there will be more groundwater legislation enacted this year.

One of the popular topics in the Southwest recently is the importation of New York City sludge to west Texas. You folks in Oklahoma may be aware of this because the initial plans were to bring it to Oklahoma. New York City had been dumping the municipal sludge into the Atlantic Ocean off the east coast. However, courts recently ruled this practice illegal and ordered that it be disposed of by landfilling, land applying or incinerating.

A contractor, Merco Joint Venture, first proposed to apply several tons per day to farmland in Oklahoma. People in Oklahoma objected strongly, so they approached the west Texas area. The Texas Water Commission did not find that such applications violated their permit so they permitted the land applications in Hudspeth County about 75 miles east of El Paso.

Numerous studies have been conducted on sludge applications on the soils of the western US and it has been shown to be a safe practice if done within prescribed limits. The beneficial application of sewage sludge is a fairly common practice in many regions. In fact, I participated in giving an award to the city of Tulsa last fall for successfully using sludge in a beneficial way on agricultural land. The Oklahoma Health Department has

indicated that 60% of the city sludge produced in the state can be beneficially spread on farm land.

In Austin, Texas the city combines shredded leaves and wood chips with sludge to make a compost which they sell in nurseries. They package it with an armadillo emblem on the sack and say the demand is greater than they can supply. The EPA in general promotes the beneficial use of sludge. Of course, there have to be limits on the amount of microorganisms and heavy metals such as cadmium.

There is a big need for efficient and low cost technology, especially in rural regions. Technology to treat wastewater in small rural communities is becoming more important. There is a system called microbial rock filter which is used fairly widely to breakdown organic matter and help purify sewage water. Water-adapted plants are used to produce the oxygen for aerobic breakdown of sewage solid materials. These systems are much cheaper to operate and maintain than the large sewage treatment plants. We also need research and technology in order to use recycled water for irrigation and other beneficial uses.

Congress amended the Clean Water Act in 1987 to include storm water runoff. Storm water runoff in larger cities and around some industrial sites in the country has to be permitted through the National Pollutants Permit System storm water runoff. Congress appears to be satisfied with the job which has been done in monitoring industrial and municipal point source systems and ensuring a good quality water.

There is a relatively new concept with regard to water quality called "geographic targeting". This is not new to the SCS which has dealt with it for a number of years. The Federal Water Pollution program considered this aspect in the 1960's and I was involved in my role then with the US Public Health Service. This approach dealt with anything in the watershed that was water quality related.

There is also now a strong emphasis on the coastal water areas. These are the bays and estuaries along the coasts, such as the Gulf of Mexico and Atlantic and Pacific coasts. In region 6, those estuaries along the Louisiana and Texas coast in the Gulf of Mexico are of concern. Nationally, Galveston Bay, Corpus Christi Bay, Chesapeake Bay, the east coast of Florida, Western US coasts, bays and estuaries, etc. are under strong scrutiny.

It has been estimated that by the year 2000, 60-75% of the nation's population will be living within 50 miles of a coastal area. It is astounding how the coastal areas have grown in recent years. This will place a great emphasis and strain on the municipal and industrial treatment and reclamation programs in coastal areas. It will also tend to focus the interagency water quality plans.

The type of pollution that would be found in discharges (from pipes) from cities or industries, which we now control pretty well, is called point-source contamination. Many

of the larger cities, 10,000 people and above, must have advanced water treatment before they can discharge sewage or industrial effluent into rivers or streams. River systems such as the Canadian, Arkansas and Trinity will not accept sewage water that has been given only the basic treatment.

Another important part of water quality monitoring is called "nonpoint source contamination". Nonpoint source is that from runoff of agricultural or forest areas, from mines or even storm runoff from urban areas. It is in essence, water shed runoff. An example of this situation is the project conducted in New Mexico on some of the cold water fishery streams that were adversely affected by contamination, sediment and erosion.

Congress has asked that we focus on nonpoint source pollution areas. In 1987, we were funded to begin work on this aspect and this was a change in their emphases. Nationally, Congress has provided about 140 million dollars since 1990. Most of this money has been contracted out to state research under section 319 of the Clean Water Act. An assessment of the problem and concerns was done initially and then management plans for agriculture, urban areas, forestry, etc. were developed.

Region 6 has gotten about \$5 million and we have funded projects for a couple of years for demonstration projects. Some have been in the rice areas of southern Louisiana and Texas, and there have also been quite a few dairy and waste management projects. Congress is showing patience and hopes we can cleanup the nonpoint source problems with a nonregulatory approach.

In Arkansas and Oklahoma, there has been a big project on chicken composting by the poultry industry. Chickens which had been diseased or otherwise died had been dumped into rivers, streams or watershed. We have supported research that has established a beneficial composting process that has significantly reduced contamination.

The farm assist program, which originated in Wisconsin, has been very beneficial. It is an educational program being tried in 3 states at present. A workbook was developed for the farmer to use in assessing his farm, yards, silos, structures and practices so that he minimized or eliminated groundwater contamination from such things as pesticides.

We have initiated another program under the Safe Drinking Water Act known as the "Well Head Protection Program." This was provided for in 1986 Safe Treatment Water Act amendments. We have gotten all 5 states in region 6 and region 1 (New England states) has gotten compliance to adopt a well protection plan. It has been going on for 3-4 years and prescribes broadly how a state and city should identify drinking water wells. They can determine how large an area around that well might contribute to the contamination of that well. They usually select a finite area, usually 1/2 mile around the well. There are some situations like the Edward's Aquifer near San Antonio which are a more complex system of groundwater recharge and require a more comprehensive assessment. One instance of note occurred in west Texas where cotton hulls and trash had been used to protect a well from freezing in cold weather. Unfortunately, the cotton had been treated with a herbicide which was incorporated into the plants. When it rained, the herbicide was leached into the wellhead contaminating the water. That well had to be taken out of use. The Wellhead Protection Program ensures that wells are not located near landfills, recharge areas or possible nonpoint source type of pollution from agriculture.

We had an interesting situation when some cattle feeders approached us asking to be regulated. This was surprising because normally people in industry believe there is too much regulation. It turns out that under the Clean Water Act, citizens can sue the owners of an operation if they do not have a permit which was the case here. We were able to issue a permit once we determined that this operation was not in violation of any of the provisions of the Clean Water Act. We have come up with a permit signed by the regional administrator on January 5, 1993. It is a general permit that refers to all kinds of animal feeding operations over certain sizes.

We have done extensive work with the SCS and some universities on confined and concentrated animal feed and lagooning of animal waste. There is no discharge permit so we require that concentrated animal feeders do not discharge to ponds which present a problem of overflow during rains. There are some areas where dairy waste runoff gets into rivers and it is necessary to control this runoff. It is also very important to line the lagoons or ponds so that they do not leak into groundwater. We need to especially monitor the ground water for nitrates. This can be expensive so more research is required on that aspect.

I advise those of you who might be involved in any of the topics I have discussed to think in terms of helping us where you can. There is a lot to do and room for good research to help us solve problems.

WETLANDS ISSUES

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Introduction

The fate of wetlands is a controversial public policy issue. People on both sides of the debate are adamant. One side wants preservation and protection of wetlands in the public interest, whereas the other side believes the issue is the right to use and develop private property. The situation is complex because there are really two issues:

- 1. What activities should be permitted on land that is acknowledged to be a wetland.
- 2. How can a wetland be defined for regulatory purposes.

The term "wetlands" includes a wide variety of wet environments. In the South this includes salt marshes, mangrove swamps, freshwater marshes, evergreen shrub bogs, palustrine forested wetlands, and many others. For many years wetlands have been viewed as waste lands that should be drained to make them useful. Wetlands were desolate places that were associated with diseases and danger. Federal and state governments encouraged and funded wetland drainage. The US Department of Agriculture (USDA) estimates that 24% of all cropland in the United States has drainage. Not all of the drained land would have been wetland, but much of it undoubtedly was.

Wetland Losses

Documenting original wetland acreage and wetland loss is difficult since historically some surveys included only wet soils while others included land under water. Using a variety of information sources, the US Fish and Wildlife Service (USFWS) estimates that there were originally 221.1 million acres of wetlands in the lower forty eight states of the United States and that approximately 116.7 million acres, or about 53% of the original acreage, has been converted to other uses (Table 1). The USFWS was required to gather this information to comply with the North American Wetlands Conservation Act which was enacted into law in December 1989.

The largest concentrations of wetlands outside of Alaska are in the southeast, the Mississippi valley, and the upper midwest. Forty seven percent of the wetlands remaining in the in the lower forty eight states are in the Southeast.

Area - Million Acres (Rounded)							
State	Total	Original Wetland	Present Wetland	% Lost			
Alabama	33.0	7.6	3.8	50			
Arkansas	34.0	9.9	2.8	72			
Florida	37.5	20.3	11.0	46			
Georgia	37.7	6.8	5.3	23			
Kentucky	25.9	1.6	0.3	81			
Louisiana	31.1	16.1	8.8	46			
Mississippi	30.5	9.9	4.1	59			
N. Carolina	33.7	11.1	5.7	49			
Oklahoma	44.7	2.8	0.9	67			
S. Carolina	19.1	6.4	4.7	49			
Tennessee	27.1	1.9	0.8	59			
Texas	171.1	16.0	7.6	52			
Virginia	26.1	1.8	1.1	42			
Lower 48	1,934.2	221.1	104.4	53			

Table 1. Wetland losses in the Southern states 1780's to 1980's. Adapted from "Wetland Losses in the United States 1780's to 1980's". U. S. Fish and Wildlife Service, Dept. of the Interior, August 1990.

Wetland Values

The public view of wetlands has changed and many people now see wetlands as invaluable public resources that should be preserved and protected at all costs. They have identified many functions and values of natural wetlands. Some wetlands are very productive as habitat for a wide variety of plants and animals. Many fishes find food and cover in coastal marshes, and waterfowl and wildlife utilize wetlands. Endangered species of both plants and animals are found in wetlands.

Some wetlands are important for maintaining or improving water quality. Others help moderate flood waters, control sediment, absorb pollutants, and contribute to climate control.

Natural wetlands also have socio-economic values such as flood control, erosion control, water supply, and the harvest of timber and other products. Other wetlands provide energy (peat mining) and income opportunities from livestock, fishing and hunting. Wetlands are sought out for relaxation, aesthetic values, and recreation.

This is an impressive list, but not all wetlands perform all functions, and not all wetlands perform any one function to the same degree. Some people point out that developed wetlands can also perform functions important to society. They believe that the right to use and develop private property is being denied without just compensation. They see wetland regulations reducing property values and limiting economic growth. They see wetlands with the potential to become productive, valuable farmland, or used for urban and industrial development.

Local governments are well aware that protected wetlands usually have far less tax value than developed land. In some cases the only land available for economic development in a community is wetland. The public supports wetland conservation in theory, but still wants super highways to the beach and restaurants and motels once they get there. At times both preservation and development can be argued to be in the public interest. As our population grows, there will continue to be conflicts between potential uses of wetlands.

WETLAND CONSERVATION

Much of the concern about wetland loss resulted from the extensive wetland drainage during the 20 years from the mid-1950's to the mid-1970's. During that time, the USFWS estimates that about 458,000 acres of wetland were converted each year, most of it for crop production. Pressure began to build to conserve wetlands, and Government policy began to shift away from wetland development.

Wetland protection at the federal level can be traced to December 1969 when Congress passed the National Environmental Policy Act (NEPA) which was designed to reconcile conflicts between economic growth and environmental protection. The Act did not prohibit development in environmentally sensitive areas but required all involved Federal agencies to consider the environmental impacts of proposed actions. The heart of the NEPA was the <u>Environmental Impact Statement</u> (EIS). The regulating agencies could require an EIS if the area under consideration was judged to be especially sensitive. In practice an EIS involved extensive environmental analysis, evaluation of alternatives, lengthy reviews, public hearings, and considerable expense. The EIS became a major tool in preventing wetland conversion, and in many cases the threat of requiring an EIS and public hearings stopped proposed development.

In May 1977 President Carter issued Executive Order No. 11990 entitled <u>Protection of</u> <u>Wetlands</u> which established wetland protection as the official policy of all Federal agencies. Agencies were directed to minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands as they carried out their duties. In the case of agriculture, direct Federal assistance for wetland conversion was prohibited.

Section 404 of the Clean Water Act

Federal wetland protection efforts were further strengthened when the Clean Water Act was amended in 1977. Section 404 requires that the Corps of Engineers (Corps) regulate discharge of dredged and fill materials into "waters of the United States". This has been interpreted to mean protecting the integrity of wetlands and has become the primary means of regulating activities in wetlands. Initially the Corps did not apply Section 404 to inland, isolated wetlands but only to wetlands adjacent to navigable waters. Later, isolated wetlands were included under the logic of interstate commerce, in that such wetlands might be used by migratory birds. This issue is still under debate.

At the time Section 404 was passed, there was concern that the Corps would be conservative in their enforcement of the program. As a result, Congress gave oversight authority to the Environmental Protection Agency (EPA). The EPA can over-rule the Corps under the "Special Case Designation". The EPA has exercised this prerogative in only a few cases, one of which was the Pocosin wetlands case in eastern North Carolina. Another case concerned the Mississippi Valley bottomland hardwood forests. The EPA has even sued the Corps to require them to enforce Section 404 rigorously.

In addition to EPA oversight, the Corps was mandated to give "full consideration" to comments from the USFWS and the National Marine Fisheries Service (NMFS) when reviewing permit applications. In reality this often amounts to veto power. Because of different agency objectives and policies, the 404 permit process soon became a source of litigation and controversy.

Wetlands Definition

As was stated earlier, one of the primary issues is "what is a wetland; or how do you define a wetland for regulatory purposes?" In the broadest sense the answer is simple;

wetland is land that is wet. But the real questions are, how wet, and when is it wet? Land exists in all degrees of wetness, and most wetlands occur in transition zones between well drained uplands and open water aquatic habitats. The USFWS has identified 55 classes of wetlands and deep-water habitats in the United States and utilizes this system in their wetland mapping program.

Concisely defining a wetland is complicated by the diversity of wetland types and the many functions wetlands perform on an individual and regional basis. This is the general wetland definition used by the Corps since 1977:

"those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas".

This is very similar to the general definition used by the USFWS. It includes the factors of hydrology and vegetation but does not mention soils. But notice the terms "normal circumstances", "prevalence", and "typically". These are inexact terms, and when used by regulators, are open to wide interpretation.

Jurisdictional Wetlands

When Congress passed the Clean Water Act it did not include a wetland definition. However, the legal definition of a wetland is a critical issue because wetland regulations demand a yes or no answer. For regulatory purposes a wetland is whatever can be <u>defined</u> as a wetland. The term "jurisdictional" wetlands is used for those wetlands that regulatory agencies judge to be covered by a particular law or regulation.

No transition zone from wetland to non-wetland is allowed in the regulations, so there are actually two elements involved in identifying jurisdictional wetlands; (1) a "determination", or decision whether or not a particular area is a jurisdictional wetland, and (2) a "delineation", or establishing the <u>boundaries</u> of the jurisdictional wetland. There must ultimately be a decision as to where the jurisdictional wetland ends and the non-wetland begins. Wetlands tend to gradually become non-wetlands over a transition zone of some distance, but for regulatory purposes a sharp line must be drawn. The placement of the line can have great economic consequences.

Until 1985 the main three agencies concerned with regulating activities in wetlands were the USFWS, the EPA, and the Corps of Engineers. Each had its own in-house rules for regulating wetlands.

Food Security Act of 1985

Wetland regulation became more muddled in 1985 with the passage of the 1985 Farm Bill and its wetland conservation provisions, commonly called "swampbuster". The Act required the Soil Conservation Service (SCS) to make jurisdictional wetlands determinations and denied United States Department of Agriculture (USDA) benefits to anyone who violated the provisions of the Act. The provisions and goals of the Farm Bill are entirely separate from the regulations of Section 404. To carry out their responsibilities, the SCS used the hydric soils list to develop its own jurisdictional wetland definition. This resulted in four federal agencies, each with a slightly different definition for jurisdictional wetland. Each agency operated under its own mandate with its own wetland manual. The lack of agreement resulted in much confusion with the possibility of one agency claiming jurisdiction for one law while another agency said the area was not a jurisdictional wetland for another law.

1989 Federal Wetland Manual

Because of this interagency conflict, an effort was made to resolve the differences. An interagency committee was formed and produced the "Federal Manual for Identifying and Delineating Jurisdictional Wetlands". The unified manual was adopted on January 10, 1989, and implemented on March 20, 1989 by the USFWS, EPA, Corps of Engineers, and the SCS.

The agencies had been using similar criteria but with slightly different definitions. In the 1989 manual, as in the agency definitions, the key factors are vegetation, soils, and hydrology. The 1989 manual defined wetlands as possessing three essential characteristics: (1) hydrophytic vegetation, (2) hydric soils, (3) wetland hydrology. The manual went into great detail as to the procedure for evaluating the three criteria.

First, the site must have over 50% plants that require, or can adapt to, wet soils. There are other much more technical requirements as well. The plant community is determined using published lists of plant types. The main difficulty is identifying the many plants that may be present and determining the relative composition on transitional sites. The manual describes exact procedures to follow.

The second requirement is that hydric soils be present. Hydric soils are soils that developed under conditions sufficiently wet to support the growth and regeneration of hydrophytic vegetation. In general hydric soils are flooded, ponded, or saturated for one week or more during the period when soil temperatures are above biological zero. They are mapped on the basis of soil color, gleying and mottling. The hydric soils list developed by the National Technical Committee on Hydric Soils is used as a guide but on-site investigation is often required. The hydric soils list predated the debate over jurisdictional wetlands and was not really designed to be used for wetland determination. There is an effort underway now to revise the hydric soils list to separate true wetland soils from those that are marginally wet. Each county SCS office maintains a list of hydric soils for that county. The main difficulty is determining soil properties in transitional areas with enough certainty to make a decision. Soils seldom change abruptly. A line must be drawn for jurisdictional purposes, but in reality it is usually a best guess. Hydrology is the third and least exact factor and has caused the most difficulty. In simplest terms hydrology means depth to the water table, and how long the water table is at a certain depth. An obvious difficulty is that the site may have to be monitored for some time to determine its hydrology. Also, normal variations in rainfall can certainly be a factor. The 1989 manual said that a site could be a wetland if the water table was within 18 inches of the surface for as little as seven days during the growing season. This was a broader definition than had generally been used up to that time. The 1989 manual also said that organic soils with managed water tables often, quote: ----"retain their hydric characteristics and if so, meet the wetland hydrology criterion". This note leaves an area of concern for lands with managed water tables, either for subirrigation or for water quality reasons.

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The adoption of the 1989 Manual created a great deal of controversy. Many landowners contended it was too restrictive and applied to land that should not be included as wetland. In essence, land that was always dry on the surface could be designated a jurisdictional wetland. Under pressure from landowners, the Bush administration directed that the 1989 manual be revised. A revised manual was released for comment on August 14, 1991. The revised manual said that a wetland must be inundated for 15 or more consecutive days or saturated to the surface for 21 or more consecutive days in order to be a jurisdictional wetland. This is obviously a much less inclusive definition.

A few days after the proposed revision was released for comment, Congress mandated that the Corps stop using the 1989 manual and return to their 1987 manual. From August 17, 1991 until revisions to the 1989 manual are finalized through the rule-making process, all first-time delineations will be made using the 1987 manual (1992 Energy and Development Appropriations Act). The rules are still under review and the Corps is still using the 1987 manual.

These are some of the concerns about the 1989 manual that were identified in the introduction to the proposed revision:

- (1) Concern that wetlands determinations were based on less than all three of the basic parameters (hydrology, vegetation, and soils), and in some cases on only one parameter.
- (2) Concern that 7 days of wetness is not enough to create wetlands.
- (3) Concern that areas which are dry at the surface (potentially all year round) are considered wetlands based on the presence of water as deep as 18 inches below the surface.
- (4) Concern that under the 1989 Manual wetlands hydrology could be considered demonstrated even without strong evidence of the presence of water. If wetland plants and other indicators were present, the hydrology could be assumed in some cases.
- (5) Concern that actual conditions in the field are not accurately reflected by the method by which the growing season is determined in the 1989 Manual. In the 1989 manual, growing season was defined as the portion of the year when soil

temperatures were above 41 degrees Fahrenheit (biological zero). The revised manual defines growing season as the interval between three weeks before the average date of the last killing frost in the spring to three weeks after the average date of the first killing frost in the fall.

(6) Concern that the 1989 Manual was developed without meaningful public input.

The revised manual was released for comment on August 14, 1991. The comment period originally extended to October 15, 1991 but it was later extended to mid December 1991, then to early 1992. Comments were solicited on specific questions about the revisions:

- (1) The proposed manual explicitly requires all three components. The manual needs the necessary flexibility to perform wetlands determinations throughout the year regardless of normal fluctuations in conditions such as seasonal wetness. It was also essential that revisions to the Manual not exclude obvious, long recognized wetland types. How are determinations to be made at any time of year?
- (2) The proposed manual identifies several secondary indicators of wetlands hydrology. Are these valid and useful? Indicators mentioned included water stained leaves, trunks or stems that are grayish or blackish in appearance as a result of being under water for significant periods.
- (3) Certain wetlands including prairie potholes, vernal pools, playa lakes, pocosins, and other special wetlands are identified as exceptions and are not required to meet all three of the technical criteria. Is this valid? This provision might surprise you. Some wetlands are exempted and do not have to meet the three mandatory criteria.
- (4) The 1989 manual is in effect until the revision is approved. How should requests for reevaluation be handled if the manual is changed? (NOTE: CORPS is using the 1987 manual).
- (5) Comments were solicited on the facultative neutral classification and how to use it. Some plants are considered to be equally well adapted to wetlands and to uplands. Should these be considered at all in making a decision, and if so, how?
- (6) Comments were solicited on how to define the hydrologic period. The revised manual changed the hydrology requirement to inundation for 15 or more consecutive days or saturation to the surface for 21 or more consecutive days during the growing season in most years. This is the key change in the proposed manual and the one that has generated the most controversy. The 1987 manual now used by the Corps basically defines wetland hydrology as a water table within 12 inches of the surface for 12.5% or more consecutive days of the growing season. For saturated only systems, saturation must be to the surface.
- (7) Comments were solicited on the basic approach of delineating each site separately versus instant classification of "obvious" cases.
- (8) Comments were solicited on the length of the growing season. The growing season is defined as killing-frost free days. The 12.5% requirement amounts to about 21 days for a 170 day growing season. Between 5% and 12.5%, maybe; under 5%, a non-wetland.

The proposed revisions generated a political firestorm. Those who wanted the 1989 manual changed were pleased, but those advocating strict and broad wetland protection were very critical of the revision. Claims were made that up to half of the lands covered under the 1989 manual would lose regulatory protection in some states. Others argued that they never should have been included in the first place. A large number of comments with strongly stated opinions were received.

President Bush originally supported the proposed revision of the 1989 manual, primarily because of pressure from landowner groups concerning loss of land development potential. But on November 22, 1991 he reversed his position and said that any revisions would be in accordance with his campaign pledge of "No Net Loss" of wetlands while he was President. (During the 1988 presidential campaign, candidate George Bush pledged more than once that he favored "no net loss" of wetlands. For the next four years the Republican administration tried to decide exactly how to implement that pledge.)

The proposed manual has become such a hot issue that Congress has asked the National Academy of Sciences to review the literature on wetlands and help formulate a wetland definition. A new definition and manual may not be released for several more years. There is much speculation as to the role the new administration will play in wetland regulation. President Clinton has called for using the scientific community to develop wetland protection policies. He has also been quoted as supporting the continued farming of prior converted wetlands.

We will now turn away from the issue of wetland definition and examine the issue concerning permitted activities in wetlands.

Section 404 Exemptions

When Section 404 of the Clean Water Act was enacted, Congress included exemptions for normal agricultural and silvicultural activities. The interpretation of "normal" is now at issue. For example, most farmers consider ditch maintenance a normal activity on drained hydric soils, but some environmental groups believe it should be a regulated activity under Section 404. This has been an area of great controversy and one reason many farmers have been opposed to wetland regulations.

Some of the concern about the vulnerability of farmed hydric soils was put to rest when the Corps of Engineers announced on October 4, 1990 that "prior converted cropland" as defined by the SCS, (land put into production before December 23, 1985), would be exempt from Corps regulation. In essence the Corps gave Prior Converted Cropland the same status as upland. This ruling has pleased developers but upset preservationists who are interested in using wetland regulation of farmland as a way to block commercial development. One cautionary note is that prior converted cropland will revert to wetland status if it is not cropped for five years.

Forestry practices on wet soils have recently become more controversial. Drainage, bedding, and water management have traditionally been considered "normal" silvicultural practices on wet soils. This interpretation is under attack. Some environmental organizations are attempting to have such practices removed from the North Carolina Best Management Practices list for forestry. Also, they contend that establishment of pine plantations results in loss of wetland functions, specifically "biodiversity". The biodiversity issue illustrates how far current wetland regulations have shifted from the original interpretation of the Clean Water Act. This issue is the subject of a lawsuit by environmental groups (N. C. Environmental Defense Fund, N. C. Coastal Federation, The National Audubon Society, the Sierra Club and others) against the EPA, the Army Corps of Engineers, and Weyerheauser Co. in North Carolina. The suit contends that logging hardwood swamps and replanting to pine plantations are not "normal" activities. The outcome of the suit will have strong implications for the use of wetlands for commercial forestry.

Nationwide Permits Under Section 404

Nationwide permits are general permits issued on a nation-wide basis by the Corps to authorize minor activities in wetlands with little or no paperwork. However, there are a number of regional conditions which must be met. Some activities require that the Corps be notified before action is taken. There are about forty nationwide permits in effect now. Some examples are: installation of aids to navigation, construction of small docks and piers, and temporary construction and access. The nationwide permit most often encountered by the general public is number 26, entitled "headwaters and isolated waters discharges". Nationwide permit 26 allows dredge and fill materials to be deposited on wetlands without prior approval if the area affected is under a minimum size (generally one acre or less) and if they are isolated, low-flow wetlands. Areas between one and ten acres that meet the other criteria require prior notification of the Corps. The minimum size may change and certain areas, such as trout waters, are not

included. Anyone contemplating activities that may affect any wetland area should check with the appropriate authorities before proceeding. The issuance of any nationwide permits is criticized as too lenient by some preservationists.

General Permits

The Corps also issues General Permits on a district by district basis. (General permits that apply to all districts are called Nationwide Permits). General Permits can cover such things as maintenance and repair of bulkheads or other activities unique to the district. An example of a General Permit is the one issued November 5, 1992 by the Wilmington District in North Carolina concerning discing of fire breaks and wildlife food plots and the use of fire plows in wetlands. It has specific requirements tailored to local conditions.

Mitigation Under Section 404

Mitigation is defined as lessening the effect of an adverse action. In the case of wetlands it means to minimize the impact on the wetland or to replace destroyed or damaged wetlands when a permit is issued. Mitigation has become an important part of the Section 404 permitting process due in large part to the "no net loss" policy announced by former President Bush. It is especially important for urban development in wetlands.

Implementation by various agencies has been variable, but the Council on Environmental Quality has adopted a mitigation step process that goes as follows:

- (1) Avoiding the impact entirely by not taking a certain action.
- (2) Minimizing impacts by limiting the degree of action.
- (3) Rectifying the impact by repairing, or restoring the affected environment.
- (4) Reducing or eliminating the impact over time by preservation and maintenance operations.
- (5) Compensating for the impact by replacing or providing substitute resources.

In November 1989 the Corps agreed that they would, when reviewing 404 permit applications, follow the CEQ mitigation steps in sequence and strive to achieve the "no net loss" goal. Mitigation is not a simple issue. There is concern by some people that manmade or restored wetlands prepared for mitigation will not fully compensate for natural wetlands even when replaced on a greater than 1:1 basis.

Food, Agriculture, Conservation and Trade Act of 1990

The 1990 Farm Bill which was signed into law on November 28, 1990 continued and expanded the wetland conservation provisions of the 1985 Farm Bill. The definition of a wetland was reaffirmed, requiring all three points for wetland determination. More latitude on minimal effect and provisions for mitigation were included. In addition there is a "good faith" exemption and graduated penalties rather than "sudden death" violation. One significant difference is the change of the violation trigger time from planting of a crop to time of wetland conversion.

The 1990 Farm Bill also contains a wetland and environmental easement program. This establishes a "National Agricultural Wetland Reserve". The purpose of the reserve is to restore the hydrology and native vegetation to its original condition and protect the functions and values of wetlands. This is also part of the strategy to meet the goal of "No Net Loss".

The Wetland Reserve Program was implemented on a trial basis in 9 states in 1992; California, Iowa, Louisiana, Minnesota, Mississippi, Missouri, New York, North Carolina, and Wisconsin. To be eligible for the reserve the land must be farmed wetland, wetlands farmed under natural conditions, or prior converted croplands. Landowners in the Wetland Reserve Program agree to control public access, give a permanent easement to the ASCS, allow right of access to the ASCS, and implement a Wetland Reserve Plan of Operation that will restore wetland functions permanently. There may also be other requirements. The deadline for submitting bids was September 25, 1992. A goal of 50,000 acres was set for 1992 and 2.5 million acres between 1990 and 1995. The sign-up in 1992 was 466,000 acres competing for the allotted 50,000. The winning bids have been announced, and it appears that much of the acreage accepted will be in the midwest. Prairie potholes have a high priority. North Carolina submitted 25,000 acres and was allotted 4,700 (ranked number 5 out of 9 states). At this point no money has been appropriated for 1993, so the future of the program is not known.

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Another provision of the 1990 Farm Bill was the creation of an Office of Environmental Quality which would have responsibility for evaluating the effects of agricultural programs on the environment. I don't think this has been funded as yet.

Emergency Wetlands Resource Act of 1986; PL 99-645

Even though Section 404 is the main legislation affecting wetlands, Congress has passed other wetland legislation. PL 99-645 was enacted in 1986 to promote the conservation of the nation's wetlands in order to maintain the public benefits they provide. The USFWS was directed to complete a wetland inventory of the United States and wetland mapping is well underway. Section 301 of the Act also directed the USFWS, in consultation with the EPA, Dept. of Commerce, USDA, and the Chief Executive Office of each State, to establish and periodically review and revise a "National Wetlands Priority Conservation Plan".

The plan for the Southeast Region was published in August, 1992. This plan identifies wetlands by state that are deemed worthy of protection, either through acquisition or easements.

The criteria used by the USFWS were (1) historic wetland losses,

(2) threat of future loss, and (3) functions and values. The report identified the priority loss areas as (1) the lower Mississippi River Valley, (2) Coastal Louisiana, (3) the Everglades of Florida, and (4) eastern North Carolina.

Table 2 shows the states covered by the report for the Southeast and the number and acreage of identified wetlands. This is a detailed report and some very small areas are identified. The point is, areas are being targeted for preservation.

	Areas Meeting Wetlands Assessment Criteria		Areas Identified but <u>Requiring Additional Review</u>	
State	No.	Acres*	No.	Acres*
Alabama	8	203,300	21	
Arkansas	60	948,400		
Florida	47	622,700	96	390,000
Georgia	54	653,350	11	6,900
Kentucky	8	60,800	39	79,900
Louisiana	89	2,415,850		·
Mississippi	72	299,300	2	
North Carolina	20	222,300	48	39,900
Puerto Rico	11	20,350	21	
South Carolina	15	318,300		
Tennessee	24	104,300	3	20,000
Virgin Islands	4	650	12	1,300
TOTALS	412	5,869,600	253	538,000
* Acreages are app	oroximate			

Table 2.	Important wetlands in the Southeast Region (Regional Wetlands	Concept Plan for
	the Southeast, 1992).	-

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Possible New Legislation

Congress is taking a more active role in wetland regulation, and new legislation concerning wetlands can be expected. An example is HR 1746 "Wetlands No Net Loss Act of 1989". Let me emphasize that this bill was not enacted, but it illustrates the type of legislation that is being introduced in Congress. Under this bill jurisdiction of Section 404 would have been shifted to the USFWS and give USFWS veto power over CORPS permits under Section 10 of 1899 Rivers and Harbors Act which affect wetlands. It would have established "no net loss of wetlands" as national policy and authorized the creation of a Wetland Preservation Trust. An inventory of all federally-owned wetlands and development of federal wetlands restoration and enhancement plans would have been required.

Another bill of special interest in the last session of Congress was HR 1330, The "Comprehensive Wetlands Conservation and Management Act of 1991", which would require that wetlands be classified according to value and function. It would remove the EPA from the wetland regulatory process and would legally define wetlands similar to the definition in the revised 1989 manual. Environmental groups have rallied opposition to this bill.

Key Wetlands Issues

The key wetlands issues are:

- (1) Definition of Jurisdictional Wetlands: This issue has been referred to the National Academy of Sciences. The new administration is likely to view wetlands differently from the previous administration. It is important to note that the existing wetland regulations have come about almost entirely through court decisions and agency rule-making. Congress has not yet been able to pass a true wetland protection act. There are many lands that would unquestionably be included under any reasonable definition, but there are others that are marginal or transitional. Wetland regulations require a clear delineation but wetlands often do not occur as clearly defined units. There will always be areas of controversy.
- (2) <u>Definition of "no net loss"</u>: There is no clear definition of "no net loss" and whether it should include natural wetland losses. Large amounts of land are lost annually to natural and legitimate causes. Examples are shoreline erosion and flooding to make reservoirs or duck ponds. Also, there is debate on whether or not agricultural lands should be included in the "no net loss" equation. To achieve "no net loss" including <u>all</u> wetlands would demand the reversion of large amounts of converted wetland and construction of new wetlands.
- (3) Exemptions for agriculture and forestry: "Normal" agricultural and silvicultural activities are exempted under section 404. Also, the Corps has issued a Regulatory Guidance Letter exempting prior converted cropland (Dec. 23, 1985). Recently the Corp and EPA published a proposal in the Federal Register to codify this decision. However, the issue of what is "normal" has not been settled. Specific issues are: (1) the inclusion of drainage as well as deposition as prohibited activities, (2) how to administer nation-wide permits, and (3) what are acceptable best management practices.
- (4) <u>Mitigation and the value of man-made versus natural wetlands</u>: Some people want total wetland preservation. They contend that no constructed wetland will ever replace a natural one even when the mitigation requires a high replacement ratio. They are skeptical of replacing rare or complex wetlands with constructed or reverted wetlands located some distance away from the impacted wetland. Others view mitigation as a practical matter of compensating for legitimate conversion of wetlands in essential or high value locations.
- (5) <u>Cumulative Impacts</u>: There is concern that permit decisions made on a case by case basis can "nibble away" at a wetland resource and result in the eventual loss of the wetland or impairment of its function. Many feel that the "cumulative impact" of all projects together must be considered. I believe that this will become a major issue and become a more important part of over-all wetland policy.

- (6) <u>Biodiversity:</u> The conversion of mixed woods to pine plantations has become a hot issue in wetland regulation. This is not really a "clean water" issue, but involves wetland values and functions as habitat.
- (7) <u>Isolated wetlands:</u> The regulation of isolated wetlands such as prairie potholes, playa lakes, and other wetlands not connected to navigable water is still unclear. A court recently ruled that Section 404 did not apply to isolated wetlands because there was no effect on navigable waters. This will be watched with a great deal of interest.
- (8) <u>The "takings" issue:</u> The takings issue centers on loss of economic use of the resource. Should the public pay for wetlands if the public benefits from their preservation? In general the courts have ruled that no compensation is given as long as all economic use of the property is not lost. For now it is unclear how far restrictions on wetland use may go before compensation is granted.

Implications for Agriculture

What does the future hold for agriculture and forestry?

- (1) Wetlands determinations and delineations will continue to be controversial. The technical definition of jurisdictional wetlands is in limbo and may ultimately be written by Congress. Right now each agency is using its own manual or definition. The Corps is mandated to use their 1987 manual and the EPA has decided to do so also.
- (2) It will be difficult if not impossible to get a permit to clear jurisdictional wetlands for agriculture on any large scale. The public perception is that there is a cropland surplus and more land clearing is not justified. Arguments about property rights and loss of economic return will probably not be effective in the short run.
- (3) The outlook for prior converted cropland is mixed. On one hand the amount of drained wetland in agricultural production is formidable and regulation would be a nightmare. However, there is still pressure to regulate agricultural activities on prior converted cropland, or what some wish to call "degraded wetlands". The Corps now considers "prior converted cropland" exempt from Section 404 regulation. This may be tested in the courts. If agricultural lands should become jurisdictional wetlands, water table management could become an issue.
- (4) Normal agricultural and forestry practices are being challenged. Establishment of commercial pine plantations as monoculture is a hot issue. Creation of firebreaks in wetland forests now require a CORPS permit, and emergency firebreaks must be immediately restored to their original contours.
- (5) Development and implementation of acceptable BMPs for both agriculture and forestry will become more important. The EPA has a lot of interest in this.
- (6) There will be incentives and pressures to allow converted land to revert. A major driving force will be the "no net loss" policy, even if it excludes agriculture and natural events. Developers are already using farm land reversion for mitigation. The future of the wetland reserve under the 1990 Farm Bill is unclear at this time.
- (7) Mitigation is a growth industry. Possibilities include procedures for reverting farm land, and use of dredge spoil to construct man-made marsh.

Conclusion

The South is rich in wetlands resources. Historically about half of the region's wetlands have been converted to other uses. There are those who believe that the remaining natural wetlands must be preserved for the public good. They see irreplaceable water quality, wildlife habitat, and recreational and aesthetic values. Others see at least some wetlands as no different from other private property that has greater monetary value if it is developed. They see the potential for agricultural and forestry lands or other investment opportunities. It is often difficult to balance private property rights against valid public concern about environmental quality.

The South also has an expanding population and many wetlands occur in close proximity to rapidly developing communities. Pressure for wetland development will probably increase rather than decrease. The fate of wetlands will almost surely continue to generate debate and controversy.

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HOW DOES YOUR SAFETY PROGRAM STAND UP

Chip Riedesburg North Carolina Department of Agriculture Raleigh, North Carolina 27611

As superintendents, directors, managers or administrators of research stations, you all have key roles in a good safety program. From your standpoint, what is the importance of a safety program? You might say to protect people or to prevent litigation. Litigation is very prominent in the news today. Many chief executives are being cited for doing the wrong thing and wind up paying fines or even going to jail. Another reason is to protect property. Accidents can be very expensive. Fires destroy a lot of property every year and it is to our benefit to protect property, and of course, the taxpayers, who are paying our salary. Worker's compensation is another aspect. Are you familiar with those expenses that continue to grow every year? A good safety program will help reduce your worker's compensation costs.

The operation with which I am involved in the Research Station Division of Department of Agriculture has reduced its worker's compensation costs from \$80,000 to \$30,000 per year in the last 2 years. This reduction coincides with the length of time we have had a well-documented safety program. That represents a significant savings especially when most other organization's expenses are rising about 10% per year.

I would like to review some key aspects of a good safety program and discuss some techniques and methods to implement safety programs. Implementation is the most difficult part. The situation I will describe is not from a textbook or wishful thinking. It is a program that is actually happening in the research station farm environment similar to that with which you are involved.

The most important aspect of a safety program is to have top management support. Safety programs can not be built from the ground up. Our top manager in the Department of Agriculture is the commissioner. In a university environment the top manager would be or the chancellor or president.

The other key part of a safety program is that it is a line management responsibility. In the times past, before the 1980's, it was common to hire a safety officer and place all responsibility on that person. It doesn't work because a safety officer can't do it all. It has to be a line management responsibility. Everybody from the first line supervisor to the top of the organization has a role in a safety program. The organization must also set measurable goals to determine how well the safety program is doing. There must also be a focal point for information. That is the role of the safety officer. That person can serve as a resource to help you with your program. But there must be a system of accountability. It does no good to tell people to work safely, if you don't reward them for working safely or penalize them for not doing so.

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Another important factor in preventing accidents is total employee involvement. This is easier said than done, but everybody is responsible for safety. It will not work if just run from the top or the superintendent's level. This means you have to develop the attitude of safety through a good orientation program. The safety officer must have had experience and training in safety. The items one deals with--chemicals, electricity, moving machinery--in a safety program are very dangerous and must be addressed from a background of knowledge. A farming and research environment can be among the most dangerous because of the nature of the things one deals with. The safety officer and the employees for which he/she is responsible must also know that you as the administrator totally support the program.

There are many hazards in agriculture. Probably the most dangerous aspects of farming are machines and motorized equipment. Half the deaths caused on the farm are tractor overturns. So, machines and guards for moving parts become very critical. The rollover protective devices and proper use of seat belts become prime safety objectives.

Those of you who deal with livestock know they are unpredictable. Animals do not always do what you expect and there are right and wrong ways to handle livestock.

Heat stress is another potential problem. In the hot and humid Southeast, this can be especially dangerous in the summer. People work outside, start sweating and can get heat stoke.

Noise is another important problem on a farm. Of course, noise at an excessive level can damage hearing. Tractors, lawn mowers, chain saws, grinders, or any type of equipment that makes loud noise can be dangerous at certain levels.

There are electrical hazards especially extension cords that are not well maintained. Farmers or people who work on farms tend to be "jacks of all trades" and often try to do electrical work which they do not do in line with safety codes. Then there are instances of moving portable grain augers, or other tall farm equipment hitting power lines and injuring or killing people.

Flying debris is another problem which can be caused by a grinder to a lawn mower. There was a recent instance where a rotary lawn mower picked up a piece of metal and embedded it into another person's back. The non-ionizing radiation, or ultraviolet radiation from arc welding, can be dangerous to skin and eyes.

Engulfment is always problem when you are working with grains. People climb into grain elevators, or when filling elevators people fall into the grain pile and it collapses on them causing suffocation. There are also many chemicals hazards. The obvious one in the farm environment is pesticides. Pesticides are safe when used properly. The key is to make sure that the people use them properly. They must use protective equipment, gloves, respirators, face shields, goggles, that offer good protection.

Silo gas can be a problem. This is particularly troublesome in silos freshly filled with silage that begins to ferment. The fermentation process uses up oxygen and can lead to suffocation. Paints around the farm can be flammable if they are petroleum based. High lead paints which could also be very deadly are often used. Dust is a constant problem on a farm. This damage is often termed farmer's lung disease. It is really just acute bronchitis and there are respirators to prevent these types of hazards. Anhydrous ammonia is now being phased out because of its potential danger and being replaced by liquid fertilizer.

The OSHA regulations that apply to commercial farms also apply to the university/research situation. There are no exemptions. The first one is the most general, and is called the General Duty Clause. The General Duty Clause states that the employer, which means the university, is obligated to give the employee a safe and healthful work place. This means that you are required to identify any material which is a danger to the employee. The Hazard Communication Standard is another OSHA regulation. Hazard Communication Standard mandates that you have to have a written program to describe how you are communicating hazards and safety measures at your work place to the employees. You have to have a list of every chemical on site such as paints, pesticides, gasoline, etc. You are also obligated to have, readily accessible, corresponding Material Safety Data Sheets to those chemicals.

There is also a Hearing Conservation Standard. That is to protect employees from being exposed to loud noises. Loud noises as defined by the Standard relate to the decibel intensity and time duration. Anything below 85 decibels for 8 hours, does not require hearing protection. Anything above that would require you to start a hearing conservation program. There are elements of the Act that you need to be aware of. One is that you have to give the people annual hearing tests. Again, I am talking sound levels above 85 decibels. Eighty-five decibels is about the sound you have with an electric drill. Another standard is if you are within three feet from somebody and you have to raise your voice, you are above 85 decibels. I took some measurements at one of our research stations which showed that just about all the equipment from tractors to chain saws, lawn mowers, bin blowers, are all above 85 decibels. Eighty-five decibels is a base level and for every 5 decibel increase above that, you are doubling the noise level. If you use this type of equipment on your research station, you do need a hearing conservation program. This will involve the annual hearing test and the annual training in how to use hearing protection devices.

The safety policy statement for our organization reads as follows: "The policy of our department is that every employee is entitled to a safe and healthful place to work, and that the department's activities will be conducted in a manner that does not adversely effect the

public or the environment. As such, all Department of Agriculture employees are responsible for insuring the work environment which is free from safety, health, and environmental hazards. The primary concern in every job is to evaluate the safety, health, and environmental aspects to avoid detrimental exposure. To accomplish this, management at all levels must provide a safe work place, safe equipment, proper materials, obtain a full knowledge and understanding of our safety, health and environmental responsibilities, and insist upon safe methods and practices at all times. All employees will be held accountable for fulfilling these safety practices. Overall safety performance helps. Performance and safety, health, and environmental awareness can result and be valued equally with production, quality and cost. Furthermore, compliance will be insured through evaluation and assessment performed by a safety officer to ensure that you established safety, health, and environmental programs."

Guidelines for employees are established in published safety, health, and environmental standards developed by our safety office and a department safety committee. This would ensure a safe work place requirement's program for safety, health and is approved by division directors, deputy commissioners, and commissioner. That says much about how the commissioner views the safety program in his establishment. Without a statement like this from the top administrator, it is hard to construct and enforce a safety program.

There is also a confined space entry standard. That dictates if an area is not really meant to house people, that certain requirements have to be met to insure that the environment is free from toxic fumes and has sufficient oxygen if people use it. Lockout tags are required if it is not suitable for human usage. If, for instance, you are working on a electrical panel, you have to have it tagged and locked out to prevent people from coming behind you and kicking on that breaker while you are still working the equipment. It also relates to hydraulics, too. Anytime a mechanic is working on a tractor, the hydraulic system has to be neutralized and the hydraulic system blocked to make sure that someone cannot be accidently crushed.

We are all required to have CPR and first aid training. If you have a medical facility that you are able to reach in three minutes, you do not have to have this training. However, I don't know of any practical case where medical help is only 3 minutes away. So, practically speaking you have to have at least one person certified in CPR and first aid.

We are also required to have an evacuation plan to handle a situation if there is a fire. Does everyone know what to do? Does everyone know how to handle a fire extinguisher? People have to be trained and you can't assume they know how to use a fire extinguisher. We have to provide for contingencies like chemical spills. Employees need to know what to do initially and who to call. These kinds of exercises need to be planned. An emergency telephone list should be posted somewhere in the work place. The same type of exercise is applied to tornado emergencies. Another OSHA requirement is access to medical records. You have to be generating medical surveillance. Medical records should be filed where anybody can have access to them. There are strict requirements on access to medical records and privacy release which are listed in the 1910 standards from the Labor Department. There are also some 1928 standards which are specific for agriculture. These deal with rollover protective structures and enclosures for tractors, machine guarding PTO shafts and field sanitation.

Record keeping is something you have to pay attention to, because OSHA often checks it. A good starting point is a first aid log. This is good to record an accident, regardless of its seriousness. Later on, that person may have an infection or something and they will come back and say, "Look, my cut got infected and I need to go to the hospital". If you have it documented, that it happened at work it is okay. If it hasn't been reported, there is no proof it is work related. The OSHA 200 law requires you to record your accidents on this log. This log has to be kept at your site five years. You do this every year and you have to post it for one month.

A fire in North Carolina that killed 25 people in a chicken processing plant created much regulation and oversight. Right after that happened, the legislature got very serious about safety in our state. Not only did they say that private industry had to cleanup its act, but they also established requirements for public sector too. The Department of Agriculture has the same requirements as private industry, which means that we can be fined also.

There are more regulations and we have to deal with them. The way we have dealt is to establish safety policies. Safety policies are statements of how management plans to deal with the particular standards. The policy usually summaries the standard and then addresses how it is being dealt with within our department. It outlines who is responsible for doing what, and how this particular standard is communicated to the employees.

One of those standards that probably everybody has to deal with is the respirator standard. With the respirator standard, we are required to conduct physical exams. We decided that the standard doesn't spell out how often you have to have those physicals. Our policy is to have people over 35 years old have a physical exam every other year and if under 35, every four years. I know a lot of you think of a respirator as a rubber mask with two cartridges on it, but the respirator is broadly defined even as the paper mask that you put on. The respirator program requires training, physical exams and instruction in the proper care and maintenance of the respirator on an annual basis.

We do cholinesterase biomonitoring although it is not required. If you work with organophosphate pesticides, it is not a bad thing to do. We try to emphasize the proactive program, but when an accident happens, we have to find out what caused it to prevent it from reoccurring. One of the techniques we use to identify hazardous jobs can also be used as an orientation tool. Job safety analysis basically breaks every task down to its job sequence steps. It describes each step's potential hazard and what is being done to counteract it. It could be use of personal protective equipment or it could be a certain procedure that one is applying, but every step has to be delineated to prevent that person from exposure or injury. We also have a near miss report for those accidents that almost happened. A lot can be learned from those because a free shot was obtained from an incident that didn't hurt anybody. Safety observation reports are a way to document hazards on site and can be submitted anonymously. This enables the manager to determine problems and to correct them before something happens.

We have an aggressive inspection system which involves people from the site inspecting for any health and safety hazards they might find and documenting on checklists. It is very important to document, because OSHA demands documentation. If OSHA audits your unit and doesn't find documentation, they consider you haven't done it.

One of the key methods we communicate hazards is by a safety committee. There is a safety board at the division level, and people from it can form a safety committee to include the superintendent or a representative of that particular research site. The safety committee is divided into interest groups to handle emergency procedures, accident investigations, rules and procedures. This committee meets once a quarter. We have 18 research stations and much of the same information can be passed around. So, each research station takes one topic, writes a report which is distributed to all stations.

The other level of the safety meeting is right at the site and where again it is important to document. This is a good way to get your employees involved, and to get them into a safety meeting, to get them talking. Employees also serve as a forum or faculty to facilitate training.

I know some of you are thinking that there are a lot of things to cover, and you don't really have the expertise or time to prepare safety meetings. There is a service available called "Safety Talks". For two dollars, you can get one of these summary sheets to the person giving the presentation and about 15 handouts are included. The work is essentially done for you, there are even blanks to list names of people who attended, a good way to document your meeting.

It is important to keep track of your program and we call this safety by objective. Under this system, once a year, the superintendent of the research stations decide on goals which should be achieved. I have illustrated a sample of how we do this. This is a wonderful way to keep track of how you are doing, independent of accidents. It is a way to measure your program by objective feedback. Some of the goals deal directly with complying with regulations and others deal with complying with your own university requirements or prevention. It also serves as a tool for me to use to convey the progress of all of our divisions. We have about 12 divisions in the Department of Agriculture, and research is just one of them. I compile the results from all divisions and give the commissioner a summary of the status of the Department to comply with OSHA and other regulations, independent again of accidents.

It is important to define clear and realistic goals. There are many resources for safety information. Your agricultural extension agent is a good one, and the National Safety Council has a division dealing with agricultural safety. The National Agricultural Chemical Association (NACA) provides a wonderful video tape on pesticide safety, The American Society of Agriculture Engineers and equipment suppliers like John Deere have a series of safety tapes too. There are also a lot of articles in your own professional magazines.

There are some inherent problems which can cause an immediate meltdown in your program, even if most of the guidelines are followed. One is when managers do not obey their own rules. Nothing is worse than you as a manager or superintendent telling someone not to do something and then going out in the field without your safety glasses or without your respirator. Another one is failure of your supervisors to point out employee mistakes, and to give inconsistent enforcement of discipline. If you, as a superintendent, see someone on a tractor without a seat belt or roll over structures in place and the person knows that you saw the violation, you must say something. If you just walk away without pointing out the violation, you are saying it is okay to ignore safety rules. So, it is important to enforce your rules and point out discrepencies to employees not in compliance.

Another problem is in the assignment of a safety officer. While it is good to have one person as a safety focal point, you have to get the employees themselves involved. The only way they will take safety seriously is to get involved in it. You just can't have a safety person handling everything. Relying on one person to do all the inspections, all the safety meetings and everything else it is not good. Also safety must be treated with the same importance given to other activities. Safety has to be right up there on the top of your priorities, and if it is not, you can pay a lot of lip service, but people sense that you really don't mean it. You have to continue to make sure it is a highly visible part of your program. Again, treat the fundamental concepts about safety as part of the job, not something independent. Lack of leadership by upper management is the surest way to make it fail. Safety efforts must be kept visible and integrated with every job and part of the annual review process. Human beings are naturally very perceptive and people are not going to take safety seriously if they are not recognized or rewarded in some way.

Another mistake is attempting to achieve a comprehensive safety program in a short time. If you are starting from square one, it will probably take five years to get in compliance with a good program. Another danger is complacency. Many of you think you have everything in good shape and nothing can go wrong. That is the day somebody is going to get killed. You should never sit back and smell the roses when you are dealing with safety programs. Some other considerations are environmental. SARA Title III requires you to report chemicals to local authorities. Certain kinds of chemicals are extremely hazardous substances if ingested. You are supposed to report these chemicals to the fire chief, your local Emergency Planning Commission and the State Emergency Response Commission.

Hazardous waste is another problem we have to deal with. Used oil should be picked up and recycled. The same applies to antifreeze, and laboratory chemical waste. You can't just dump waste chemicals in the sink or toss them out on the ground. You have to deal with those according to law.

I have given you a number of topics which require attention because many are now law. Safety is important because lack of it can cost you money (and fines), injured employees and ultimately low morale and an inefficient work operation.

HOW DOES YOUR SAFETY PROGRAM STAND UP? A SUMMARY OF IMPORTANT CONSIDERATIONS

Why should you have an aggressive and documented safety program?

- 1. Comply with government regulations.
- 2. Control liabilities and legal actions.
- 3. Reduce worker's compensation costs.
- 4. Track progress of your program.
- 5. helps insure a safe and healthful work place.
- 6. Increased productivity.

Important elements of a good safety program.

- 1. Top management support and commitment.
- 2. Line management responsibilities for implementation.
- 3. Measurable goals.
- 4. A focal point for access to information on safety and health (safety director).
- 5. A system for accountability.
- 6. Total employee involvement.
- 7. Comprehensive safety orientation.

SAFETY IN AGRICULTURE

I. THE COUNTRY'S MOST HAZARDOUS OCCUPATION.

A. Physical Hazards

- 1. Machines and equipment (Tractor overturns)
- 2. Livestock
- 3. Heat stress
- 4. Noise
- 5. Electrical (moveable grain augers)
- 6. Confined spaces (silos, grain bins)
- 7. Flying debris (eye)
- 8. Flammable liquids
- 9. Nonionizing radiation (ARC welder)
- 10. Engulfment

B. Chemical Hazards

- 1. Pesticides
- 2. Silo gas
- 3. Paints

- 4. Dusts farmer's lung disease
- 5. Anhydrous ammonia

II. OSHA REGULATIONS AFFECTING AGRICULTURE (1910).

- A. General Duty Clause
- **B.** Respirators
- C. Hearing Conservation
- **D.** Confined Space Entry
- E. Lock Out/Tag Out
- F. First Aid/CPR Certification
- G. Evacuation Plan
- H. Hazard Communication
- I. Lab Standard
- J. Access to Medical Records

III. OTHER STANDARDS/LAWS FOR COMPLIANCE.

A. 1928 - Safety and Health Standards for Agriculture

- 1. ROPS
- 2. Protective enclosure for tractors
- 3. Machine guarding PTO
- 4. Field sanitation
- B. NFPA Fire Codes
- C. Local Building Codes
- D. Record Keeping
 - 1. First aid log
 - 2. OSHA 200 log
 - 3. OSHA form 100
 - 4. Worker's compensation forms
 - 5. MSDS inventory
 - 6. Chemical lists

IV. SETTING UP YOUR PROGRAM - SAFETY POLICIES.

- A. Policy Statement Head of Agency
- **B.** Safety and Health Policies
 - 1. Hazard communication
 - 2. Emergency response plan
 - 3. Hearing conservation

- 4. Respirators
- 5. Lock Out/Tag Out
- 6. Confined space entry
- 7. Accident investigation
- 8. Medical surveillance
- 9. Cholinesterase biomonitoring
- 10. Respirator physicals
- 11. Medical records access
- 12. Motor vehicle safety

V. IDENTIFYING WORK PLACE HAZARDS.

- A. Job Safety Analysis
- **B.** Near-Miss Reports
- C. Safety Observation Reports
- D. Safety Inspections buildings, equipment
 - 1. Shop, chemical storage, laboratories
 - 2. Office, storage buildings
 - 3. Forklifts, tractors, other farm equipment
 - 4. Fire extinguishers
 - 5. Respirators
 - 6. Eyewash
- E. Regular Safety Meetings (monthly)
 - 1. A chance to get employees involved
 - 2. Train workers
 - 3. Communication between staff and management and exchange of ideas

VI. SAFETY TRAINING.

- A. Correct lifting methods
- B. Respirator fit testing
- C. Fire extinguisher use
- D. Chain saws
- E. Job safety analysis
- F. Emergency action plan

VII. DEFINING CLEAR GOALS.

- A. Safety-By-Objectives
- B. Set a realistic goal for accident rate

VIII. RESOURCES FOR SAFETY INFORMATION.

- A. Agriculture Extension Agent
- B. National Safety Council
- C. National Agricultural Chemicals Association
- D. American Society of Agricultural Engineers
- E. Equipment Suppliers
- F. Professional Magazines
- H. Each other

IX. PITFALLS CAUSING SAFETY PROGRAM FAILURE.

- A. Managers not obeying their own rules
- B. Failure to point out employee mistakes and inconsistent reward/discipline
- C. Appointing a "safety officer" to do everything
- D. Not treating safety with the same importance of quality, production, costs and personnel relations
- E. Lack of leadership by upper management
- F. Not keeping safety efforts visible and integrated with every job-part of the annual review process
- G. Attempting to achieve a comprehensive safety program in a short time
- H. Complacency
- X. OTHER CONSIDERATIONS
 - A. SARA Title III Reporting
 - **B.** Hazardous Waste
 - 1. Used oil
 - 2. Antifreeze
 - 3. RCRA wastes

Equipment	Average (db)	<u>Maximum</u>
Case 265 Tractor	95	
JD 2355 Tractor	98	
JD 2550 Tractor	97	
International 140 Tractor	89	
JD 6000 Sprayer	88	
JD 4420 Combine	90	
Long Tobacco Harvester	92	
Tobacco Barn Fans	97 (side)	106 (front)
JD 4450 - Field Leveling*	95	98
JD 2940 - Field Leveling*	97	
JD 3155 - Field Leveling*	90	93
JD 4455 - Field Leveling*	93	98
Ford 6610 - Ditch Cutting*	91	94
Mill Room	91	95
Bin Blower	97 (@ 15 ft.)	107 (@ switch)

Some average sound intensities for selected pieces of farm equipment.

⁸Measurements taken during actual field operations.

A chemical list for cholinesterase monitoring. The chemicals on this list are organophosphates which meet the toxicity criteria for biomonitoring as per Medical Protocol. All of these pesticides are considered dangerous and protective equipment must be worn when mixing, loading and applying the chemical as specified by the label and MSDS for that chemical.

> **AZODRIN 3.2EC AZODRIN 5EC BOLSTAR 6EC COUNTER 15G DASANIT 15G** DASANIT 6L DEF 6E **DI-SYSTOM 15G DI-SYSTON 2G DI-SYSTON 8L DIMETHOATE 2.67E DURSBAN 2E DURSBAN 4E** DURSBAN 50W **DYFONATE 10G GUTHION 2L**

GUTHION 50WP IMIDAN 50WP LORSBAN 4E LORSBAN 50WP **METHYL PARATHION 4E** MOCAP 10G **MOCAP 6EC** NEMACUR 15G NEMACUR 3EC **PARATHION 15WP PARATHION 8E PHOSPHAMIDON 8EC** SYSTOX 6EC THIMET 15G VAPONA 2L **ZOLONE 3EC**

LOC	ATIC	ON: CHERRY FARM UNIT	DA	TE: 7/2/92				
			DATE OF LAST		FOURTH QUARTER DATE(S) OF ACCOMPLISHMENT			
<u>PRO</u>	GRA	M ELEMENT AND GOAL	FREQUENCY	<u>Y OCCUR.</u>	APRIL	MAY	JUNE	
I.	HAZ	ZARD RECOGNITION						
	On	Job Safety Analysis	Annual	5/28/92		5/28/92		
II.	INC	CIDENT INVESTIGATION						
	А. В.	Accident Investigation Near Misses	Upon Occ. Upon Occ.	2/ 5/92 4/23/92	4/23/92			
III.	HE	ALTH SERVICES						
	A.	Physical for Respirators >/= 35 years old < 35 years old	Biennial Every 4 years	9/ 9/91 9/ 4/91				
·	В. С.	Audiograms for Noise Exposure Noise Monitoring [*]	Annual Biennial	3/10/92 1/23/91				
	D.	Cholinesterase Biomonitoring	Baseline by end of year	N/A				
	Е.	Respirator Fit Test*	Biennial	1/23/91				
IV.	INI	TERNAL SELF-INSPECTIO	N					
	А. В.	Buildings Farm Equipment	Monthly	6/30/92	4/28/92	5/30/92	6/30/92	
		1. Operational Check	Before each use	DAILY	DAILY	DAILY	DAILY	
	C.	2. Safety Inspection Forklifts	Quarterly	4/30/92	4/30/92			
		Operational Check	Before each use	6/11/92	N/A	N/A	6/11/92	
	D.	Shop Equipment	Monthly	6/26/92	4/30/92	5/30/92	6/26/92	
	E.	Fire Extinguishers	Monthly	6/ 3/92	4/ 6/92	5/ 4/92	6/ 3/92	
	F.	Fire Doors & Exits	Monthly	6/26/92	4/30/92	5/30/92	6/26/92	
	G.	Pesticide Inventory	Monthly	6/ 3/92	4/13/92	5/ 4/92	6/ 3/92	
	<u>H.</u>	Health Services	<u>Quarterly</u>	4/28/92	4/28/92	······································	·····	

A sample of the quarterly safety report used by the North Carolina Department of Agriculture.

North Carolina	Job Title:					Page <u>1</u> of <u>1</u>	JSA No
Department of Agriculture <u>Measuring & mixing pes</u>			ticides			<u>,</u> ,	
JOB SAFETY ANALYSIS Per		ho Does .	Job:	Supervisor:		Date:	New
······································	Farm L	<u>abor Fo</u>	rce	Benny E.Graham		7/17/92 Revis	
Organization: Loc		in:		Department:		Analysis By:	
	Stations	Stations URU; Farms		Various			
Required And/Or Recommended	Safety Glasses	5 <u>X</u>	Hard Hat	Respirator <u>X</u>	Other <u>Rubber</u>	- Approved By:	
Personal Protective Equipment:	Safety Shoes	<u> </u>	Gloves <u>X</u>	Coverails or Apron	<u>X</u> Boots		
SEQUENCE OF BASIC JOB STEPS PO		POTENTIAL HAZARDS		RECOMMENDED ACTION OR PROCEDURE			
Put on required safety gear Dermal, respiratory co with harmful substance			ontact e	Wear safety gear even when doing #3 below because of possible spills or dusts			
Make sure someone else is in B attendance or knows where you are			Being overcome by toxic substance		If no one can be with you, make sure someone is aware of where you are and what time you started		
Read the label		Label directions may have changed or you may have forgotten		Read to be sure you know sequence of mixing, relative toxicity and danger			
Place material to be measured and container under fume hood		Highest concentration of chemical you will ever be exposed to		Carefully measure material standing as far back as possible			
Fill tank with 1/3 water to be used		Reaction of chemical if poured directly into empty tank		Put in water and start agitation			
Pre-mix material and water and pour in tank		Possible concentration of material in clumps (flocculation)		Add materials in following sequence: powder, flowable, liquid (treat soluble packs like powder)			
Add remaining 2/3 water	Add remaining 2/3 water Vapor escaping as wat			ter enters	Introduce water carefully - do not stand over filler opening - do not let tank run over		
Rinse containers and disposeToxic substanceaccording to regulations - cleanevaporating inteup measuring areaevaporating inte			ubstance being ating into atmo	spilled or sphere	Use approved housekeeping practices and follow the label and leave		

AMERICAN DISABILITIES ACT

Ray L. Thompson, Director Employee Development and Training Clemson, University Clemson, SC 29634

The information included in this presentation is an overview of the Americans with Disabilities Act (ADA). The technical aspects of the Act, Public Law 101.336, has been promulgated by federal agencies charged by Congress to write the regulations of the Americans with Disabilities Act.

As President Bush conveyed to the nation at the signing of the Americans with Disabilities Act on July 26, 1990, the law will enable every man, woman and child with a disability to pass through once closed doors into a bright new era of equality, independence and freedom.

The Americans with Disabilities Act is powerful in its simplicity. It will ensure people with disabilities are given the basic guarantee of independence, freedom of choice, control of their lives, and the opportunity to blend fully and equally into the right composition of the American mainstream.

Equally important to all businesses in the private and public sector is the availability of qualified workers who will bring to jobs, diversity, loyalty, and a chance to prove themselves in the workforce. This is indeed a civil rights for over 43 million persons with disabilities and it is the intent of this booklet to provide an overview as well as to assist public and private sector in the implementation of the Americans with Disabilities Act.

Information pertained in this presentation has been derived from a variety of sources. It is intended to serve only as an overview as well as a suggested guide to assist in the implementation of the Americans with Disabilities Act - Public Law 101.336.

CONGRESSIONAL FINDINGS:

- 1. Forty three million Americans have one or more physical or mental disabilities.
- 2. Society has tended to isolate and segregate individuals with disabilities, which continues to be a serious and pervasive social problem.
- 3. Census data, national polls, and other studies have documented that people with disabilities, as a group, occupy an inferior status in our society, and are severely disadvantaged socially, vocationally, economically, and educationally.

4. Individuals with disabilities have been faced with restrictions and limitations, of purposeful unequal treatment, and relegated to a position of political powerlessness in our society.

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- 5. The nation's proper goals regarding individuals with disabilities are to assure equality of opportunity, full participation, independent living and economic self-sufficiency for the individuals.
- 6. Discrimination against people with disabilities persists in areas of:

Employment Housing Public Accommodations Education Transportation Communication Recreation Institutionalization Health Services Voting Access to Public Service

- 7. Unlike individuals who have experienced discrimination on the basis of race, color, sex, national origin, religion, or age, people with disabilities have often had no legal recourse to redress such discrimination.
- 8. People with disabilities continually encounter various forms of discrimination, including:
 - 1. Outright intentional exclusion
 - 2. Discriminatory effects of:
 - a. Architectural barriers
 - b. Transportation
 - c. Communication barriers
 - d. Overprotective rules
 - e. Policies
 - f. Failure to make modifications to existing qualifications, standards and criteria

PURPOSE OF THE AMERICANS WITH DISABILITIES ACT (ADA):

- 1. To provide a clear and comprehensive national mandate for the elimination of discrimination.
- 2. To provide clear, strong, consistent, enforceable standards addressing discrimination.
- 3. To ensure that the federal government plays a central role in enforcing the standards established in the act.
- 4. To evoke the sweep of congressional authority including the power to enforce the 14th Amendment and to regulate commerce in order to address the major areas of discrimination.

THE FIVE MAJOR TITLES OF THE AMERICANS WITH DISABILITIES ACT ARE AS FOLLOWS:

- I. Employment
- **II.** Public Service
- **III.** Public Accommodations
- **IV.** Telecommunications
- V. Miscellaneous

DEFINITIONS:

Covered Entity:

- An employer, employment agency, labor
- Organization or joint labor management committee and states.

Disability:

- Physical or mental impairment
- Substantially limits one or more major life activities (without regard to the availability of medicines, assistive devices or other mitigating measures)
- Record of such an impairment
- One regarded as having a substantially limiting impairment

Substantially limits:

- Unable to perform a major life activity that the average person can perform
- Significantly restricts an individual in performing a major life activity as compared to an average person in the general population

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MAJOR LIFE ACTIVITIES:

- Caring for oneself
- Performing manual tasks
- Walking
- Seeing
- Hearing
- Speaking
- Breathing
- Working

Qualified individual with a disability (skill, experience, education, and other job-related requirements):

- With or without reasonable accommodations
- Essential functions of the job
- Employer will determine essential functions
- Job descriptions
- Health and/or safety of others

ESSENTIAL FUNCTIONS:

Means the fundamental job duties of the employment position - not marginal functions.

- Employer's judgment as to which functions are essential

- Written job descriptions prepared before advertising or interviewing applicants for the job
- The amount of time spent on the job performing the function
- The consequences of not requiring the employee to perform the function
- The terms of a collective bargaining agreement
- The work experience of past employees in the job
- The current work experience of employees in similar jobs

REASONABLE ACCOMMODATION:

Making modifications to the workplace, acquiring equipment or devices, modifying personnel policies and practices

UNDUE HARDSHIP - Means an action requiring significant difficulty or expense

PHYSICAL OR MENTAL IMPAIRMENT:

- Physiological disorder/condition
- Cosmetic disfigurement
- Anatomical loss affecting one or more body systems or mental or psychological disorder
 - Neurological
 - Musculoskeletal
 - Special sense organs
 - Respiratory (including speech)
 - Cardiovascular
 - Lymphatic
 - Skin
 - Mental retardation
 - Organic brain syndrome
 - Mental or emotional illness
 - Specific learning disabilities

AUXILIARY AIDS AND SERVICES:

- Qualified interpreters or other effective methods of making aurally delivered materials available to individuals with hearing impairments.
- Qualified readers, taped texts, or other effective methods of making visually delivered materials available to individuals with visual impairments.
- Acquisition or modification of equipment or devices.

TITLE I - EMPLOYMENT:

The Americans with Disabilities Act requirements become active on:

- July 26, 1992 for employers with 25 or more employees
- July 26, 1994 for employers with 15 or more employees

The implementation of this title covers:

- 1. Private and public employers
- 2. States
- 3. Employment agencies
- 4. Labor organizations
- 5. Joint labor-management committees

Congress and legislative agencies will enforce the law through internal administrative procedures.

Religious organizations may give preference in employment to their own members and may require applicants and employees to conform to their religious doctrine.

The Americans with Disabilities Act prohibits employers from discriminating against "qualified" individuals with a disability in regard to:

- 1. Job applications (qualification standards, and employment tests which tend to screen out qualified workers with disabilities unless the standard is job related).
- 2. Hiring
- 3. Advancement
- 4. Discharge

- 5. Compensation
- 6. Training

REASONABLE ACCOMMODATION:

Includes the following:

- 1. Making existing facilities readily accessible
- 2. Job restructuring
- 3. Modifying work schedules
- 4. Reassigning to vacant positions
- 5. Acquiring or modifying equipment or devices
- 6. Adjusting or modifying examinations
- 7. Adjusting or modifying training materials
- 8. Providing readers or interpreters

An accommodation is not required under the Americans with Disabilities Act if it imposes an "undue hardship" on the employer's business, which means a significant difficulty or expense. To determine the undue hardship, the following factors would be considered:

- 1. Nature and cost of the accommodation
- 2. The size, type and financial resources of the specific facility where accommodations would have to be made
- 3. The size, type and financial resources of the covered employer
- 4. The type of operation, including the composition, structure and its workforce.

Employers must reasonably accommodate the disabilities of qualified applicants or employees, unless an undue hardship would result.

- Employers may reject applicants or fire employees who pose a direct threat to the health or safety of himself/herself or others in the workplace.
- Applicants and employees are not protected from personnel actions based on their current illegal use of drugs. Drug testing is not affected. Although current illegal drug users and alcoholics who cannot safely perform their jobs are not protected by the Americans with Disabilities Act, those who have been rehabilitated, who participate in a supervised rehabilitation program and are not currently using drugs are covered.

- Employers may not discriminate against a qualified applicant or employee because of the known disability of an individual with whom the applicant or employee is known to have a relationship or association.

Evaluation of a request for reasonable accommodation is a four step process. To determine what changes might be made so that a qualified worker with disabilities can perform the essential functions of a particular job.

A. Identification of the barriers to Equal Employment Opportunity by;

- Job analysis (determination of essential job tasks);
- Evaluation of the work-related abilities and limitations of the individual;
- Determination of the tasks or work environment factors that prevent the individual from effectively performing essential job tasks.
- **B.** Identification of accommodations options that would enable effective performance of the essential job tasks by the individual with disabilities.
- C. Assessment of the reasonableness of each accommodation option in terms of its effectiveness for the individual with disabilities and equal opportunity.
- **D.** Implementation of the reasonable accommodation which is most effective and does not impose undue hardship on the employer.

UNDUE HARDSHIP IS MEASURED BY EVALUATING FOUR FACTORS:

- The nature and cost of accommodation needed;
- The overall financial resources of the business or organization, the number of persons employed there, the effect of the accommodation on its operation;
- The overall financial resources of any parent company or organization with respect total employees, and total facilities;
- The structure and type of operation of the parent company/organization, including the relationship of the particular work site to the larger unit.

Although most accommodations involve little or no cost, an employer may refuse to provide accommodation for a worker with disabilities if making such accommodation would constitute an undue hardship in the particular employer's circumstances. In situations where there are two effective accommodations, an employer may choose the method that is less expensive or easier to accomplish so long as it results in equal employment opportunity for the employee or applicant with a disability. If a current employee's work performance is slipping and the reason appears to be disability-related, an employer may initiate efforts to improve the employee's performance, including making accommodations. It is advisable to document all efforts to accommodate an individual's disability and to review the effectiveness of accommodations provided.

MEDICAL EXAMINATIONS:

- 1. Employers may require medical examinations only if they are job related and consistent with business necessity and only after an offer of employment has been made to a job applicant.
- 2. The medical examination may be given before the beginning of employment duties, however, and an offer of employment may be contingent on the results if:

A. All employees are subjected to examinations.

B. Information obtained is kept confidential and maintained in separate medical files.

C. Employers may conduct voluntary medical examinations that are part of employee health programs but must be kept confidential and maintained in separate files.

3. Inquiries concerning whether an applicant has a disability or the severity of the disability are prohibited. Employers may inquire whether the employee can perform job-related functions. Example of job-related function: Employer is prohibited from inquiring about a person's epilepsy but may ask if the person has a driver's license.

NOTICES AND ENFORCEMENT:

- 1. Employers are required by the Americans with Disabilities Act to post in a conspicuous place notices summarizing the bill's pertinent provisions. The Equal Employment Opportunity Commission (EEOC) is designated as the enforcement agency for the law.
- 2. The Americans with Disabilities Act adopts all the power remedies and procedures set forth in Title VII as follows:
 - A. Charges must be filed with EEOC within 180 days of the alleged discriminatory act or; 300 days in states with approved enforcement agencies.
 - B. EEOC has 180 days after a charge has been filed to investigate and either sue the employer or issue a right to sue letter to the complainant. The complainant then has 90 days to file a lawsuit.

REMEDIES:

- 1. Designed to make the individual or class "whole" and to prevent the employer from engaging in future discrimination.
- 2. Reinstatement, with back pay and other benefits, reasonable attorney's fees an costs.

The Americans with Disabilities Act as with Title VII, prohibits employers from retaliating against complainants or those who assist in the investigation of a complaint. With the passage of the Civil Rights Act of 1990, the remedies in the Act changed and thus allows complainants with disabilities may be entitled to jury trials and compensatory and punitive damages in cases of intentional discrimination. Remedies are those that are equitable in nature only.

TECHNICAL ASSISTANCE:

In South Carolina the Vocational Rehabilitation Department will provide assistance in the implementation of the Americans With Disabilities Act. You should investigate to see which agency in your state has been assigned this responsibility.

- 1. Vocational Rehabilitation will provide qualified workers with disabilities;
 - A. vocational rehabilitation process
 - **B.** vocational assessment
 - C. personal, social, and work adjustment
 - **D.** planned vocational rehabilitative services
 - E. vocational objective, leading to job placement
 - F. follow-up to ensure successful performance
- 2. Reasonable Accommodations
 - A. barrier surveys leading accessibility
 - B. guidance in selecting proper equipment, etc. to meet standards
 - C. rehabilitation engineering consultation (case by case basis) for job-site restructuring

SUGGESTIONS FOR EMPLOYER COMPLIANCE:

TITLE I - ADA

- 1. Job Descriptions Only essential job functions or tasks should be included.
- 2. Job Application Forms Job application forms must eliminate any potentially discriminatory questions about disability or medical status

- 3. Job Application Process Individuals who are involved in the application and hiring process should be sensitized to good practices under the ADA. Applicants should have good access to the interview premises during the interview process arranging for accommodations to the communications or mobility needs of any applicant
- 4. Interviews Interview questions should focus on employment tasks and objectives
- 5. Testing and Medical Exams Tests or screening criteria must be job-related and consistent with business necessity. Employers may require medical examinations only after a conditional offer of employment has been made, provided that such exams are required of all entering employees in the job category. The examining physician should be provided with a job description that reflects the essential functions of the job in evaluating whether an applicant can perform those tasks.
- 6. Hiring Decisions

Hiring decisions should be based on an individuals qualifications for the essential duties of the position.

7. Benefits

Workers with disabilities are entitled to employment benefits that are the same as or equal to those provided by a particular employer for workers who have no disabilities.

HEALTH INSURANCE; An employer may not refuse to hire an otherwise qualified individual with a disability because the cost of the employer's group health insurance program would increase

WORKER'S COMPENSATION; An employer could not contract with an insurance company that refused to cover accidents to persons with disabilities

- 8. Working Conditions Employment activities should be arranged in an integrated manner so that employees with disabilities are not placed in separate work areas. Access to all facilities, or alternative comparable facilities, should be available to employees with disabilities.
- 9. Raises and Promotions A routine process for evaluating the work of all employees according to a pre-established criteria can provide objective information about the performance and capabilities of all employees.
- 10. Reasonable Accommodations The employer has a duty to make reasonable accommodation only to known disabilities of employees or applicants.

Practical Advice for Employers

- A. First and most important, employers should treat every physical or mental condition upon which they wish to make an employment decision as a handicap protected by the ADA. They should be sure that any decision based on such conditions are related to the specific individual's ability to perform the essential functions of the job, with reasonable accommodation to his condition, safety to himself, to other employees and to the general public.
- B. Employers should refrain from making class based decisions involving physical or mental conditions. They should not automatically reject from employment or advancement all persons having certain conditions. Where employers use pre-employment practices, they should make sure that they, not their doctors, make the final employment decisions, Doctors employed in conducting medical examinations should understand the physical and mental requirement of the positions the employer offers.
- C. Employers Should Limit Pre-Employment Inquiries, such as those contained in pre-employment medical history questionnaires, and physical examination to matters which directly relate to the ability of the applicant to perform the job for which they applied
- D. Employer should evaluate all employment procedures and job requirement, particularly physical requirements, to ensure they bear a direct relationship to the ability to perform the essential functions of the job in questions and are consistent with business necessity.
- E. An individual should not be rejected for a position for which he is otherwise qualified based on a physical or mental condition unless there is medical evidence that the individual cannot perform the duties of the job safely to himself, others or the general public. If a decision to reject or terminate an employee due to disability in contemplated, the specific factual findings and medical evidence on which it is based should be documented. In addition, employers should build a record of all accommodations considered and offered, the projected costs of those they cannot do, and the employee's or prospective employee's response to each discussed with the individual.
- F. Employers should consider steps to make the workplace accessible to disabled workers. Keep the disabled in mind when making structural alterations. Widen aisles and doors, lower shelves, and purchase office furniture and equipment that can be adjusted to the needs of the disabled, if necessary.
- G. Medical insurance programs should be examined to insure that they are up to date and provide appropriate limitations for potentially catastrophic losses to the employer.

For a two hour overview of the ADA write to:

ADA Compliance Video (\$15.00) Ray Thompson Clemson University 212 University Square Clemson, South Carolina 29634

You will be invoiced by Clemson University.

He has 180 days after a charge has been filed to investigate and either sue the employer or issue a right to sue letter to the complainant. The complainant then has 90 days to file a lawsuit.

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REMEDIES:

- 1. Designed to make the individual or class "whole" and to prevent the employer from engaging in future discrimination.
- 2. Reinstatement, with back pay and other benefits, reasonable attorney's.

LITIGATION AVOIDANCE: THINKING LIKE A LAWYER CAN BE GOOD FOR YOU

Genevieve G. Stubbs Associate General Counsel The Texas A&M University System February 1, 1993

The material in this paper is a reorganization and expansion of information prepared and presented by the Litigation Section of the Office of General Counsel, The Texas A&M University System. The assistance and contributions of Mr. Daniel Hernandez, Assistant General Counsel, and Ms. Tami Sayko, Senior Staff Attorney, are recognized and greatly appreciated.

Introduction

Today's highly charged legal environment makes it imperative that managers in both the public and private sectors be aware of the sensitive to the myriad of legal issues that surround their actions and decisions. Employee suits against employing entities (both public and private) and individuals have risen steadily over the past 20 years, and there is no indication that the trend will reverse itself any time in the near future. In order to protect themselves and their employers, managers--those persons whose choices and actions are most often brought under scrutiny by employees filing suit--must devote some time to learning how to avoid litigation before it happens. Unquestionably, there is still truth to the old saying, "Anyone can sue anyone." But time and energy invested in the present can often prevent suits in the future, or at least lessen their likelihood of success.

In order to best 'immunize' oneself against liability, it is often wise to learn how to think like the potential opponent, i.e. "know you enemy." Attorneys are training in such techniques generally as a matter of course. However, most managers and directors lack expertise in analyzing situations to seek out those weak spots in their operation that an opponent may seek to exploit.

Employment "Exposure" Areas

Most employee suits can be classified under six categories that encompass the full range of relationships and activities in the work place. These include the following:

- o Hiring
- o Evaluation
- o Promotion/Transfer/Demotion/RIF/Salary
- o Discipline

- o Interpersonal Relations
- o Termination

The 'real world' is rarely capable of being so neatly divided into categories, the most lawsuits involve several of these areas at once. However, the same analysis of actions and motives applies across the board when assessing the degree of exposure of the employer.

These steps represent actions taken by management based, presumably, upon decisions that take place within a legal framework of state, federal, and common law regulation. It is in these areas that employment cases are litigated. When decisions are well-documented, follow established procedures, and are made by thoughtful managers who are mindful of the wider impact of their actions/decisions and chances of a successful suit by an employee or applicant greatly diminish.

Hiring

Disappointed applicants often sue for jobs and opportunities they believe were illegally denied them. In such a case, several actions and decisions made by management are scrutinized for the purpose of building a case. Some of these include:

- o Job Descriptions
- o Advertisements
- o Interview
- o Job Requirements
- o Working Conditions
- o Reasonable Accommodation for Disabled
- o Salary Offered

Evaluation of Employee Performance

While no law mandates such evaluations in the private sector, some governmental agencies require them either by policy or statute. Areas of performance evaluation that can serve as the basis for litigation may include:

- o Communication to Employees of Performance Standards
- o Application of Performance Standards
- o Accuracy of Documentation of Performance
- o Timeliness

Promotion/Transfer/Demotion/RIF/Salary Issues

All of these actions generally relate to decisions made by the employer that directly impact a potential plaintiff employee. It is in these areas that clearly written objective standards and procedures are most critical. Trigger points for litigation may include:

- o Distribution of Salary and Benefits Among Employees
- o Basis for Salary Allocations
- o Career Opportunities
- o Notice of Problem Areas

Discipline

Perhaps the least favorite of all responsibilities that a manager must undertake, discipline of employees involves a complex set of issues and results. At the very least, it can evoke deep feelings in both the manager and the employee. Since few people enjoy being criticized, much less punished, the manager must pay extra attention to these factors:

- o Notice of expectations/performance standards
- o Uniformity in application of policies and standards
- o Consistency in treatment
- o Opportunities to correct problems

Interpersonal Relations

As long as people continue to act like human beings, relationships among and between employees will continue to present both opportunities and problems for managers. Experienced managers are well aware that the actual lines of power and communication rarely follow those found on an organization's chart. Overlying all of this 'invisible' structure are the official procedures and policies that ostensibly regulate life in the office.

Frequently managers are also concerned about interactions and relationships between employees outside of office hours and activities. However, with few exceptions, most attempts on the part of employers to limit or otherwise control such activities are not permitted.

Numerous interpersonal factors that are created by or arise from the office can be the basis of various legal actions, including:

- o Office/work environment
- o Non-work related interactions between colleagues
- o Peer and subordinate relationships
- o Expression of personal opinions

Termination

This area is, for obvious reasons, the one that is most ripe for litigation. It is critical in such cases that managers make a concerted effort to properly follow all procedures and policies. Minor deviations are not necessarily going to prove fatal to a defendant/manager's case, but when taken out of context or otherwise exploited by a plaintiff's attorney, they can be very damaging. Termination cases are usually highly dependent on good documentation and correct procedures. At trial, a typical juror will tend to identify more with an individual employee that with a decision-maker. Factors to be remembered include:

- o Notice to employee
- o Opportunity for dialogue
- 0 Basis for action/decision

Potential Causes of Action for Plaintiffs

Plaintiffs rarely sue for just one legal reason, or cause of action. Most often, several are pleaded in the alternative. Evidence supporting one will often support several others as well. The distinctions between these causes are too complex to be fully analyzed here, but each carries its own form of remedy, i.e. monetary damages, injunctive relief, attorney's fees, etc. This list is not exhaustive but represents those most frequently seen in employment litigation:

- o Constructive discharge
- o Intentional infliction of emotional distress
- o Denial of equal protection
- o Discrimination based on sex, race, national origin, age, disability, or religion
- o Slander/libel
- o Whistleblower
- o First Amendment
- o Criminal statutes

Discoverable Matter

It usually comes as a shock to individual defendants when they learn how much information is available to a plaintiff's attorney through the process of discovery. Practically speaking, almost any type of information capable of being communicated is subject to discovery. It is extremely rare for a trial judge to prevent discovery of requested material. The limits of discovery are very broad indeed. It is best for managers to act as if there is no such thing as "confidential information" in the context of a civil case.

It is because of this that managers need to carefully consider what they put in print or electronic storage/retrieval systems, such as e-mail. Personal testimony of witnesses is influential in a trial, but perhaps even more so are documents and other information created by either party long before a lawsuit was even considered. The most credible and self-serving testimony from the stand can be severely undermined by documentary evidence showing the party's motives and reasoning at the time of the action.

While most jurors have never been bosses, nearly all have been employee, or at the very least in some subordinate role in their lifetime. Jurors are generally going to assess

evidence according to an inherent feeling of fairness on the part of the parties--what is sometimes called the "equity bone." A memo or note in the file predating the act that brought about the lawsuit can quickly and effectively damage the live testimony of a manager trying to explain his or her motives for a decision.

"Think like a lawyer"

Plaintiff's lawyers are trained to take advantage of every factor that favors their client's case. This includes the jury's potential identification with the employee. It also means taking great pains to cumulate the evidence against the defendant such that, while standing alone particular acts or statements themselves may not seem onerous, when taken together in a group the "truth" about the situation emerges for the jury. To counter this, managers must learn to view the totality of their actions over time, not just isolated acts.

With all of these potential sources of problems facing him or her, the manager making a decision may be tempted to throw up their hands and say, "To heck with it, I'll just do what feels right since I'll get sued anyway." A fatalistic attitude such as this is not really necessary. As was mentioned above, a better strategy is to examine decisions and actions in light of the same questions and framework a plaintiff's attorney would use. Below is a list of questions a manager can ask beforehand, or at least in midstream, that can steer off trouble if carefully considered:

Is it uniform in application? Am I applying the same standard to everyone, or am I treating people differently based on non-job related reasons?

Is it consistent? Does this square with my past practices?

Is it job related? Does this have a substantial, demonstrable connection with the requirements of the job, or does it reflect the way I wish people would act or be?

Have I made reasonable accommodation? What have I done to try and explore changes that can be made to accommodate? Have I sought advice from anyone else on this or am I assuming that I am an expert?

It is a bona fide occupational qualification? Is this a requirement that is absolutely essential to the function of the job, so much that even immutable characteristics like race and sex are not protected?

Is it a business necessity? Can my business function without this or without any other reasonable way of doing it?

Is it properly documented? What does the file contain that shows what led me to this decision? How recent is the documentation? Does it follow company policy? Forms? Deadlines?

How will this be interpreted by worst critic or his/her attorney? What is the worst possible interpretation of my decision/action?

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Is it accurate? What is the basis of this information? Am I prepared to stake a lawsuit on this source? How can I independently verify it?

Has notice been given? Will this be a "bolt from the blue?" What is the requirement in my policy manual for this type of action?

Has an opportunity to respond been given? What chance have I given the employee to explain what happened? Am I being fair?

If it is written, is it reasonable and defensible, or damaging? If it is damaging, can I show more evidence to explain it? Does it reveal my feelings and motives in a way that points toward arbitrariness? Can I express this with less "passion" and more objectively?

Did I follow my employer's policy? Do I even know the policy? If it does not follow the policy, why not?

What is my staff's perception of me regarding my motives and rationale? Will these potential witnesses have been me in action in a fair and reasonable light?

Have I been reasonable and acted in good faith? Am I treating this person fairly? Would I want the boss to treat me the same way? Do I have a "hidden agenda?"

Does it adversely impact a particular group? If not intentionally, will be nevertheless cause an adverse impact in practice?

Is it a statement of public concern? Does it go beyond an individual's complaints and touch on areas the voters, taxpayers, etc. have an interest in? Is it a First Amendment situation?

Conclusion

While it may seem as if a manager cannot function today without a lawyer at this or her elbow, the fact is that a little forethought and preparation such as has been described herein can save a lot of trouble later on.
R.C.A.S. Executive Committee Meeting

by Dennis Onks, Secretary Lexington, Kentucky February 2, 1992

Committee Members Attending:

Randy Akridge, Brewton, AL; Roy J. Constantin, Hammond, LA; Jonathan Edelson, Lane, OK; Jake Fisher, Portageville, MO; James Riley Hill, Jr., Blackville, SC; Bob Horsburgh, Winchester, VA; Ben Kittrell, Florence, SC; Bill Loe, Hope, AR; Dennis O. Onks, Springfield, TN; Bill Peterson, Lexington, KY; James A. Reinert, Dallas, TX; Will E. Waters, Bradenton, FL; Bill Webb, Stillwater, OK; F. T. Withers, Jr., Mississippi State, MS; Ed Worley, Calhoun, GA; Joe High, Jr., Spring Hill, TN; Tom Evrard, Keiser, AR; Larry Wells, Headland, AR; David Calvert, Ft. Pierce, FL; Joe Musick, Crowley, LA; Jere McBride, Bossier City, LA; Howard Malstrom, El Paso, TX.

Chairman Worley opened the meeting at 3:00 PM and welcomed the committee. The minutes of the September 24, 1991 Executive Committee meeting had been mailed earlier and weren't reread. Motion was made and seconded to accept minutes as presented.

Local arrangements Chairman Bill Peterson reviewed the Meeting's arrangements and Spouses tour. The section tour includes visiting two Horse operations, one which includes triple crown winner, Seattle Slew. An overview of the University Agronomy program is also planned with the Banquet being held at Spindletop Hall. The ladies will visit Shakertown and local historical sites. Costs for the event will be within budget.

Proceedings Chairman Howard Malstrom reported on this year's manuscripts. The past method of submitting papers on computer disks has worked well and should continue. He reported overdue balances on the past two years which were \$1438 and \$655 for 1990 and 1991, respectively. These expenses will be taken care of following the annual meeting.

He reported extra copies are available if anyone should need them. He also reported on the need for another person to become involved in this process if the Society will continue the publication. This will maintain continuity and spread the work load.

Historical Chairman, Bill Webb reported that the early formation of the Society has not been documented and requested help from the committee to obtain this information. His report is attached to the minutes.

Awards Chairman, Joe High reported that two Service Awards will be presented this year, Dr. Jere McBride and Mr. Gene Morrison will both be presented awards at the Banquet. Law changes were finalized, due to the possibility of printing a permanent address for information if such a position is created. A vote will be made at the Fall Meeting for action.

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Chairman Worley presented the state of the By-Law changes and asked James Riley Hill to review the changes which were approved at the Fall, Executive Committee Meeting. These changes were mailed within the 45 day limitation to the committee and action can be taken by the committee if it so desires.

Discussion followed on separating the editorial changes from the actual operations change. Motion was made and seconded. Motion passed on voice vote.

Motion to change title of some officers to the neutral gender term "chairperson, vice chairperson" was made and seconded. Voice vote defeated motion.

Motion to change officers to current SAAS version, terminology "president, vice-present" was made and seconded. Voice vote passed motion.

Motion to delete officer, Secretary/Treasurer, and add a Secretary and an Executive Treasurer was made and seconded. Discussion was made for an alternative name for the Executive Treasurer. Question was called for and passed unanimously.

Committee chairman Hill will make appropriate changes and forward to the committee.

Chairman Worley opened floor for nominations concerning the Executive Treasurer and receiving none, appointed a nomination committee to report at the Fall meeting. The committee will be Chairman Bill Loe, and members Bill Webb and Ben Kittrell.

With no other business being presented, meeting was adjourned.

R.C.A.S. Specially Called Meeting of the Executive Committee Minutes

by Dennis Onk, Secretary Lexington, Kentucky February 3, 1992

Chairman Worley stated that a specific vote by the committee concerning the officer name had not been taken at the February 2nd meeting. Therefore, a motion and vote were needed prior to the annual business meeting.

A motion was made to change the names of RCAS officers to President and 1st and 2nd Vice-Presidents. Motion was seconded and passed unanimously.

These actions will be presented to the membership at the annual business meeting on February 4, 1992 for approval.

R.C.A.S. Annual Business Meeting Minutes

by Dennis Onk, Secretary Lexington, Kentucky February 4, 1992

Chairman Will Waters opened the business meeting and welcomed all Society Members.

Secretary Dennis Onks read the minutes of the past meeting as submitted by past secretary Joe Musick. Minutes were accepted as read and approved.

Treasurer Dennis Onks gave the financial report of the Society through the beginning of this year's meeting. The report was accepted and approved as presented. Discussion was made concerning outstanding debts owed by the Society, the treasurer stated these will be paid with the current receipts and be reported upon at the next meeting.

The nomination committee report, composed of Ed Worley as chairman and members Bill Loe and Howard Malstrom was made by Mr. Worley. The committee nominated the following for officers of the Society for 1992-1993:

Will Waters: Executive Committee Chairman James Riley Hill: Chairman Joe Musick: 1st Vice-Chairman Dennis Onks: 2nd Vice-Chairman Jim Pitts: Secretary With no other nominations being made from the floor, motion was made and passed unanimously to accept this slate of officers.

Reporting for the By-Laws Change Committee, James Riley Hill presented the Executive Committee's Decisions to alter the By-Laws by adding an Executive Treasurer to oversee the financial concerns of the Society on a continuing basis. He explained and change of officer names from Chairman to President. The Executive Committee chairman will remain the same. The primary reason for changes is to make titles gender neutral.

Discussion followed on the legality of the action which was within the power of the Executive Committee. Pro and Con discussion followed, which ended with a motion to accept the changes, which was seconded and passed unanimously by the membership.

Dr. Hill then outlined the duties of the Executive Treasurer and the changes associated with this addition. The assembly discussed these events and voted approval of the actions of the executive committee.

Chairman Waters stated that an awards committee needed to be appointed and asked Jake Fisher to Chair this committee with members, Jim Reinert, Bob Horsburgh and Wallace Griffey.

Chairman Waters then recognized the retirements from the society. Earl Gilmore and Shelby Newman from Texas. Bobby Moss and Jim Dobson from Georgia. E. A. Borchers and J. L. Tramel from Virginia.

One death was reported from Virginia, Bill McClure.

Recognition was made to Howard Malstrom from his leadership in publishing the proceedings of the Society.

Recognition was made to Bill Peterson for the excellent local arrangements.

James Riley Hill was introduced as the next President of the Society for 1992-93.

Jonathan Edelson was introduced as the local arrangements chairman for next year's Tulsa, Oklahoma meeting.

Tom Evrard introduced the foreign participants in attendance, who are enrolled in Arkansas's 'Experiment Station Operation' Graduate Program.

James Riley Hill announced the future publication of the RCAS Brochure which will receive final review at the next Executive Committee meeting.

Chairman Waters announced that the Fall, Executive Committee meeting will be hosted by Joe High on September 24-25 in Spring Hill, TN.

Meeting was adjourned.

R.C.A.S. Executive Committee Meeting

by Jim Pitts, Secretary Spring Hill, Tennessee September 24, 1992

Committee Members Attending:

Randy Akridge Brewton, AL; David V. Calvert, Ft. Pierce, FL; John R. Clark, Clarksville, AR; Jonathan Edelson, Lane, OK; Jake Fisher, Portageville, MO; James Riley Hill, Blackville, SC; John Hodges, III, Knoxville, TN; Bob Horsburgh, Winchester, VA; Ben U. Kittrell, Florence, SC; William C. Loe, Hope, AR; Joe Musick, Crowley, LA; Dennis Onks, Springfield, TN; Bill Peterson, Lexington, KY; Jim Pitts, Clanton, AL; Jim Reinert, Dallas, TX; Will Waters, Bradenton, FL; Ed Worley, Calhoun, GA; Bill Webb, Stillwater, OK; F. T. Withers, Jr., Mississippi State, MS; and Carl Tart, Raleigh, NC.

Chair Will Waters called the meeting to order at 8:30 AM, September 24, 1992. On behalf of the committee, he thanked Joe High for hosting the mid-year committee meeting.

Joe High welcomed the group to Tennessee and the Middle Tennessee Experiment Station. He presented the schedule of events for the day.

John Clarke (AR) and John Hodges (TN) were introduced to the committee as new members.

The February Executive Committee Minutes were approved as presented.

The July 1, 1992 financial report was approved as presented by past Secretary/Treasurer, Dennis Onks. Onks pointed out that refreshment costs at Lexington were somewhat out of line primarily because of traffic flow and table setup limitations. Joe Musick moved that President James Riley Hill check with SAAS for options available to prevent other sections from taking advantage of free refreshments, seconded and approved unanimously.

Considerable discussion about dues resulted in President Hill appointing a committee to look into a dues structure and report back at the January 1993 Executive Committee

meeting. Jim Reinert, Chair; John Clark, and Butch Withers, were appointed as committee members.

Chair Waters stated that the primary purpose of this committee meeting is to plan the program for the annual meeting in February, with this statement the floor was opened for potential subject matter areas.

Considerable discussion followed on various topics, with Program Committee Chair Joe Musick presiding. The discussion resulted in five areas of interest:

- 1. Employee evaluation, motivation and retention.
- 2. Current future environmental concerns and its impact on production agriculture, to include swampbuster/sodbuster, clean air, coastal zone, and animal act bills.
- 3. Program prioritization/downsizing.
- 4. Grant opportunities.
- 5. Regulation affecting research stations, including safety, disability acts, general litigation avoidance.

Local Arrangements Committee Chair, Jonathan Edelson, reported for the committee. The tour to the Stillwater Campus and banquet at the Gilcrease Museum in Tulsa is tentatively scheduled for Monday afternoon if the cost can be kept to \$30 or less per person.

Committee Reports:

President Hill reporting for the new By-Law Committee stated that the new By-Law changes were printed in the 1992 RCAS proceedings.

Bill Loe, Chair of the Executive Treasurer Nomination Committee, moved that Jere McBride be nominated for the office and Dave Calvert seconded. Discussion followed concerning length of service. Joe Musick amended the motion that Jere McBride be nominated to serve a five year term, and nominations from the floor, none were made. Joe Musick moved that nominations be closed, Dave Calvert seconded, and a voice vote was unanimous in favor of Jere McBride serving as Executive Treasurer.

Howard Malstrom, Proceedings Committee Chair, was not present but reported by letter. The letter is attached to the minutes. Reports were approved, seconded, and unanimously accepted by the committee.

The report from Mike Schubert, chair of the RCAS Brochure Committee, was given by Jim Reinert. Reinert asked permission to print the executive treasurer's name and address on the brochure and the request was granted. Joe Musick moved to accept the brochure as presented to the committee and print 500 copies and Dennis Onks seconded. A decision was made to hand out the brochures in Tulsa. The motion was unanimously approved.

Jake Fisher, Awards Committee Chair, moved to accept Howard Malstrom and Bill Loe for Distinguished Service Awards. Bill Webb seconded and the motion was unanimously approved. 1

Bill Webb, Historical Committee Chair, requested past years programs from RCAS Executive Committee meetings to complete his records. Chair Waters suggested including these programs in the 1993 proceedings.

Ed Worley Nominating Committee Chair, requested suggestions for secretary and will report to the Executive Committee in January 1993.

Chair Waters requested state representatives to provide the secretary with a list of retired and decreased members in order to be recognized at the next board meeting and annual meeting in Tulsa.

New Business:

The 1993 fall meeting will be held at the Winchester Agriculture Experiment Station in Winchester, Virginia, October 6 and 7.

President James Riley Hill encouraged industry experiment station personnel participation in RCAS and the group concurred.

Carl Tart announced that North Carolina was revising its station brochures and requested sample brochures from other research stations be sent to him for review.

The next meeting of the Executive Committee will be in Tulsa, Oklahoma on January 31, 1993 at 3:00 PM in the Dover Room of the Double Tree Motel.

Meeting was adjourned at 5:00 PM.

BY-LAWS AS AMENDED FEBRUARY 4, 1992

BY-LAWS

OF THE RESEARCH CENTER ADMINISTRATORS SOCIETY OF THE SOUTHERN ASSOCIATION OF AGRICULTURAL SCIENTISTS

Article I

Name

The name of this organization shall be "Research Center Administrators Society" and for the purpose of this document shall be frequently referred to as "Society".

Article II

Objectives

The objectives of the Research Center Administrators Society shall be to hold educational meetings; to provide opportunities for interaction with colleagues; and to enhance the profession within the scientific community.

Article III

Members

Section 1

The membership shall include superintendents, resident directors, center directors, and other individuals with various titles having administrative responsibilities involving a field station, branch station, research station, research center, or other branch research facility of a state agricultural experiment station or any other public or private agricultural research organization.

Section 2

Membership shall be composed of regular and active members. Any unit head of a branch research facility in any participating state shall be considered a regular member. Any individual, with administrative responsibilities involving a satellite research facility, who attends the annual meeting and pays the designated fees shall be considered an <u>active member</u> with all rights and privileges afforded by the Society.

Article IV

Officers

Section 1

The officers of the Society shall be a President, a First Vice-President, a Second Vice-President, and a Secretary and an Executive Treasurer. These officers shall perform the duties prescribed by these bylaws and by the parliamentary authority adopted by the Society.

Section 2

The officers shall be elected by rising, show of hands, or by voice vote to serve for one year or until their successors are elected, and their term of office shall begin at the close of the annual meeting at which they are elected. The Executive Treasurer shall serve at the pleasure of the Executive Committee and the Society for specified term announced upon the election of the officer. An additional term may be served if deemed in the best interest of the Society.

Section 3

No member shall hold more than one office at a time, and no member shall be eligible to serve more than one consecutive term in the same office. The Executive Treasurer may serve more than one term upon recommendation of the Executive Committee and approval of the Society.

Section 4

Duties of the President shall include:

- o Serve as overall coordinator of Society activities;
- o Preside at annual meeting;
- o Prepare letters for distribution to State Agricultural Experiment Station Directors requesting them to invite and to encourage attendance of membership from their state at annual meeting;
- o Appoint Nominating Committee in accordance with bylaws;
- o Appoint Local arrangements Committee Chair;
- o Serve as a member and attend Executive Committee meetings;
- o As immediate past President serve as Executive Committee Chair.

Section 5

Duties of the First Vice-President shall include:

- o Serve as Chair of the Program Committee;
- o Mail copy of program to Secretary-Treasurer of the Southern Association of Agricultural Scientists at designated time;
- o Mail a copy of program to all Society officers;
- o Serve as a member and attend Executive Committee meetings.

Section 6

Duties of the Second Vice-President shall include:

- o Serve on Program Committee;
- o Perform other duties as President assigns;
- o Serve as a member and attend Executive Committee meetings;
- o Assist Secretary in registration at Annual meeting.

Section 7

Duties of the Secretary shall include:

- o Responsible for registration at annual meeting;
- o Collect fees at annual meeting;
- Prepare minutes of business session, prepare financial statements; prepare attendance roster from registration cards; and send copies of each to incoming and outgoing President and Executive Committee officers;
- o Mail programs and other appropriate information to membership;
- Serve as a member and attend and serve as Recording Secretary of Executive Committee meetings.

Section 8

Duties of the Local Arrangements Representative:

- <u>Survey assigned meeting room well in advance of annual meeting and decide</u> <u>if adequate</u>:
- o Set up and arrange for banquet and/or social;
- o Arrange for coffee breaks at annual meeting;
- o Arrange for visual aid equipment and other needed equipment;
- o Coordinate all of the above with other Program Committee Members;
- Shall have the option to solicit additional assistance from the membership as needed;
- Attend the Executive Committee meeting prior to annual meeting at the invitation of the President.

Section 9

Duties of the Executive Treasurer shall include:

- o Maintain the Societies' banking accounts, fiscal records and provide annual reports;
- o Issue checks for payment of bills as submitted by Secretary;

- o Represent the Society when designated by the President;
- o Maintain current Membership List;
- o Maintain current copy of By-Laws;
- o Maintain liaison with SAAS Secretary-Treasurer on matters of interest to the Society;
- o Serve as voting member and attend Executive Committee Meetings.

Article V

Meetings

Section 1

The regular meeting of the Research Center Administrators Society shall be held annually in association with the Southern Association of Agricultural Scientists, unless otherwise ordered by the Society or by the Executive Committee.

Section 2

Special interim meetings can only be called by the President in conjunction with the Executive Committee.

Section 3

Active members in attendance at any regular or special meeting shall constitute a quorum.

Article VI

Executive Committee

Section 1

The Executive Committee shall consist of current officers, the immediate past President, and one representative from each participating state. Section 2

The Executive Committee shall have general supervision of the affairs of the Society between its annual business meeting, fix the hour and place of meetings, make recommendations to the Society, and shall perform such other duties as are specified in these bylaws. The Committee shall be subject to the orders of the Society, and none of its acts shall conflict with action taken by the Society or the Southern Association of Agricultural Scientists.

Section 3

The immediate past Society President shall serve as Chair of the Executive Committee. In his absence, the current Society President will serve as Chair.

Section 4

State Representatives shall be selected by the regular Research Center Administrators Society membership of their respective state. Each state Representative will serve a minimum

of two years.

Section 5

The Executive Committee shall meet at least twice annually. One meeting will be held during the summer and one meeting will be held the day prior to the annual meeting. The Chair of the Executive Committee shall establish the date and place of the summer meeting.

Section 6

Duties of Executive Committee Chair;

- o Preside over Executive Committee meetings;
- o Set date and place of summer meeting;
- o Establish program agenda;
- o Provide committee members with agenda 30 days prior to meeting;
- o Appoint Executive Committee sub-committees.

Article VII

Committees

Section 1

A Program Committee shall be appointed by the President to be headed by the First Vice-President and to include the Second Vice-President and the Local Arrangements Representative. The duties of the Committee shall be to plan the annual program of the Society. This committee shall submit a progress report on the program plans to the Executive Committee at its regular summer meeting.

Section 2

The President shall appoint a Nominating Committee consisting of three immediate past Presidents. The Committee shall be appointed during the Executive Committee meeting held the day prior to the annual meeting. It shall be the duty of this committee to nominate candidates for the offices to be filled except for the office of Executive Treasurer. The Nominating Committee shall report during the business session and prior to the election of officers. Before the election, additional nominations from the floor shall be permitted. An Executive Treasurer candidate shall be selected by the Executive Committee and the appointment shall be recommended to the Society for approval. The Society may also make nominations from the floor.

Section 3

Special committees shall be appointed by the President as the Society or the Executive Committee shall from time to time deem necessary to carry on the work of the Society. The President shall be ex-officio member of all committees except the Nominating Committee.

Article VIII

Parliamentary Authority

The rules contained in the current edition of "Robert's Rule of Order Newly Revised" shall govern the Society in all cases to which they are applicable and in which they are not inconsistent with these bylaws and any special rules of order the Society might adopt.

Article IX

Amendment of Bylaws

Section 1 - Amendment by Active Membership

The bylaws can be amended by a two-thirds vote of the active membership during the business session of the annual meeting. Notice of the proposed change must be given to the Society President one week prior to the annual meeting. The notice shall include the full text of the amendment.

<u>Section 2</u> - Amendment by Executive Committee

The bylaws can be amended by action of the Executive Committee provided strict procedures are followed. A member proposing the amendment shall provide the Executive Committee Chair with the full text of the proposed change. The Chair shall distribute copies of the full text to the committee members 45 days prior to the voting deadline. Voting may be by letter, telephone with confirming letter, by roll call if taken during an Executive Committee meeting. State Representatives of the Executive Committee are to review the amendment with their respective delegation and cast one vote reflecting the delegation's view. A two-thirds vote of the Executive Committee members voting is required for adoption of an amendment. The Chair shall announce the results, revise the bylaws to include the amendment and distribute the revised bylaws to the Society membership.

Revised 10-1-85 Revised 2-5-89 Revised 2-6-92 DR. JOHN A. EWING Dean Emeritus Institute of Agriculture University of Tennessee Knoxville, Tennessee

Award Recipient - 1987, Nashville, TN



The Research Center Administrators Society had the honor of presenting Dr. John A. Ewing, Dean Emeritus, the first "Distinguished and Dedicated Service Award". Dr. Ewing believed for many years that station superintendents should have their own section within the Southern Association of Agricultural Scientists. While he was director of the Tennessee Agriculture Experiment Station, he was instrumental in getting superintendents together and initiating the organization that has now evolved to the Research Center Administrators Society.

John Ewing was born in Tennessee in 1912 and received B.S. and M.S. degrees from the University of Tennessee. He gained the Ph.D. from Harvard

University in Public Administration in 1956. He was responsible for much of the development and expansion of the Tennessee Agricultural Experiment Station, both at Knoxville and the branch stations. Some of the work on effects of radiation on large animals done at Oak Ridge has earned international recognition.

Dr. Ewing contributed to the planning and development of agricultural research in the Southeast. He has been chairman of the Directors of the Southern Agricultural Experiment Stations, and advisor to several regional technical research committees. He has also contributed to planning and coordination at the national level, particularly while chairman of the Experiment Station Section for Land-Grant Colleges and Universities.

Dr. Ewing is Dean Emeritus of the Tennessee Agricultural Experiment Station and has been a member of several honorary fraternities such as Phi Kappa Phi and Alfa Zeta. He continues to participate in civic and community affairs. He was appointed by the Governor of Tennessee to serve an the Tennessee Air Pollution Control Board. The RCAS can be very proud that its' founder was a person of such prestige and integrity.

MR. ROBERT B. MOSS Superintendent, Southwest Georgia Branch Experiment Station University of Georgia Plains, Georgia



Robert B. Moss served as chairman of the Branch Station Superintendents (BSS), the parent organization of the RCAS in 1969-70 and 1978-79. This was during the early years of the organization when things were more informal and the interaction focused on mutual concerns and problem solving.

Bobby was one of the organization's original leaders, instrumental in making the superintendents of branch stations in the southern US aware of what BSS had to offer. Program quality, then as now, had a great influence on attendance and interest. One of Bobby's major objectives was to help develop and present a quality program. His leadership, guidance and cooperation were important factors in enabling the later development of RCAS.

Bobby Moss was born and raised in Georgia. He attended Abraham Baldwin College and the University of Georgia from which he received the B.S. degree and the M.S. degree in agricultural economics. He was appointed assistant superintendent in 1961 and superintendent in 1963 of the Southwest Georgia Branch Station at Plains. He was responsible for coordinating research programs involving up to 50 scientists and supervised an on-site staff of almost 20 people.

Bobby and Betty have three children and are the grandparents of four beautiful granddaughters. In addition to being committed to a wonderful family, Bobby has been very active in local community and church programs. He was named "Lion of the Year" in 1977 by the Plains Lion Club.

DR. JOE W. HIGH, JR. Superintendent Middle Tennessee Experiment Station Spring Hill, Tennessee

Award Recipient - 1989, Nashville, TN



On February 5, 1989, the Research Center Administrators Society had the honor of presenting Joe High with the "Distinguished and Dedicated Service Award" at the annual convention in Nashville, Tennessee. This award presented because was of .Joe's active participation in this organization from it's inception. He has been active as a state representative for 10 years, served as chairman of various committees and served in each of the Society's Leadership positions. He has held the **Executive Committee Meeting at Spring Hill and** been the State Host for numerous annual meetings in Nashville.

Dr. High, a native of South Carolina, received the B.S. from Clemson University, the M.S. from the University of Tennessee and the Ph.D. from Iowa State University.

Joe served on the Animal Husbandry staff of the University of Tennessee for nine years, was Superintendent of the USDA's Iberia Louisiana Livestock Research Station for three years and has served as Superintendent of the Middle Tennessee Experiment Station since 1964.

He has been active in many public and civic organizations and been an active member in Sigma Xi, Phi Kappa Phi and the American Society of Animal Science. His most recent leadership role has been in the development of the Maury County, Tennessee, Leadership Development Training Course called the "Leadership Maury".

Joe married the former Sarah Greer of Spartanburg, SC and they have four sons.

MR. WALLACE A. GRIFFEY Superintendent, Upper Costal Plains Substation Auburn University Winfield, Alabama

Award Recipient - 1990, Little Rock, AR



Wallace Griffey, after receiving the award made the following statement, "If there is anything in all of this, that has meant the most to me, it is the privilege of being elected to and serving as an officer of RCAS. I'll always treasure working with all of the membership and have many pleasant memories to carry through the rest of my life". He served as secretary/treasurer in 1980-81. as vice-chairman and program coordinator in 1981-82, and as chairman in 1982-83. He also served as the RCAS representative to the Board of Directors of the Southern Association of Agricultural Scientists from 1981 1983. He served as the Alabama to representative on the RCAS Executive Committee from 1985 to 1989. Wallace was chairman in 1983 and showed the insight and resolute leadership in authorizing the Section to conduct a survey of the membership to elicit concerns and suggestions for change and improvement.

This action ultimately led to the formation of the study group, of which he was a member, which worked to establish By-Laws.

Wallace is a native of Tennessee and obtained the B.S. degree in Animal Science and the M.S. degree in Animal Nutrition and Breeding at the University of Tennessee. His research has been with agricultural production, and management with most contributions in Animal Science. He has been directly involved in research for 30 years in several disciplines. He has worked with scientists and administrators of three land grant universities and with counterparts in regional projects involving other research center administrators.

Mr. Griffey has published approximately 40 professional abstracts, professional research journal papers, and popular news articles. He has made numerous presentations to the RCAS as well as other professional organizations. He is a member of Gamma Sigma Delta, American Society of Animal Science, Southern Association of Agricultural Scientists, and Research Center Administrators Society. Wallace and Frieda have two children and 3 grandchildren.

DR. BILLY B. WEBB Professor and Assistant to the Department Head Department of Agronomy Oklahoma State University Stillwater, OK 74078

Award Recipient - 1990, Little Rock, AR



Dr. Billy B. Webb was recognized for his long, distinguished and devoted service to the RCAS. Bill Webb joined the then Superintendents Section, an affiliate of SAAS, many years ago. He regularly attended, advocated and worked for the Section and was elected chairman in 1984. He also served as secretary, treasurer, program chairman and Executive Committee member. He was an active participant as a state representative and chairman when the By-Laws committee made the transition to RCAS in 1984-85.

Bill Webb's contributions have been recognized by many internal and external professional groups. He has been on many committees at Oklahoma State University and with administrative reviews in Missouri and Tennessee. He was elected chairman of Division A-7 of the American Society of Agronomy in 1980 and served on the ASA Board of Directors.

Bill received a B.S. degree from Oklahoma State University after which he farmed for four years. He returned to Oklahoma State University in 1961 and obtained a M.S. degree while serving on the faculty. He was then appointed as Superintendent of the OSU Irrigation Research Station at Altus, Oklahoma.

Dr. Webb got a Ph.D. degree in 1970 at Kansas State University. He returned to Oklahoma State University as an Assistant Professor and Superintendent of Agronomy Research Stations and advanced to the rank of Professor. He is now Assistant to the Department Head and supervises thirteen agronomy research stations. He has broad responsibilities in personnel administration, budgeting, faculty and staff training, and public information.

Bill and Jean Webb are the parents of six children and grandparents to seventeen grandchildren. Their children have also made many contributions as professionals in their communities. He and his family take time to work in their church and assist with programs for the elderly in their community.

DR. NORMAN E. JUSTUS Professor of Agronomy and Superintendent Southwest Research Center University of Missouri Mt. Vernon, Missouri

Award Recipient - 1991, Ft. Worth, TX



Dr. Norman Justus is recognized for his leadership and efforts in supporting the RCAS for the past 15 years. He was secretary-treasurer in 1983-84, program coordinator in 1984-85 and chairman in 1985-86. He was one of the core members responsible for the development of the By-Laws and the positive effects that resulted. He has served on the RCAS Executive Committee for many years during which he provided useful ideas, guidance and counsel.

Norman Justus grew up on a southwest Missouri farm and received B.S. and M.S. degrees with honors in 1954 and 1955 from the University of Arkansas. His Ph.D. came in 1958 from Oklahoma State. Dr. Justus joined the staff of USDA-ARS and was assigned to cotton programs at Stoneville, Mississippi and Knoxville, Tennessee.

In 1965, he was named Professor of Agronomy and Superintendent of the University of Missouri's Southwest Research Center, Mt. Vernon, Missouri. Dr. Justus has provided the leadership to bring an international reputation in forage and agricultural research to the Center. There are currently more than 70 research projects, representing eight departments at the center. The genetics program at the center has released an orchardgrass and three tall fescue grass cultivars. The orchardgrass was named 'Justus' in his honor.

Norman has provided significant service to a variety of professional societies. He was active in establishing Division A-7 of the American Society of Agronomy and served as program chair for 2 years, and chair in 1982.

Norman and Anna Belle are parents of two sons and very much enjoy being grandparents to their grandchildren. They have traditionally been very active in church and community affairs.

MR. E.G. "GENE" MORRISON Director, Central Mississippi Research & Extension Center Mississippi State University Raymond, Mississippi

Award Recipient - 1992, Lexington, KY



E.G. "Gene" Morrison, Head of Central Mississippi Research and Extension Center, has dedicated to the Research Center been Administrators Society. He has supported the ideals, goals and objectives of RCAS while serving as vice chairman and chairman of the **Branch Station Superintendent Section in 1976** and 77. He was the Mississippi state representative on the Executive Committee and was an active participant on the By-Laws committee in 1984-85 during the transition to RCAS.

For more than 40 years, Mr. Morrison has been associated with the Mississippi Agricultural Research and Forestry Experiment Station. A native of Hinds County, he received a B.S. in Animal Husbandry from Mississippi State University, and later the M.S. in Animal

Husbandry from the University of Tennessee. His association with the Branch Experiment Station system began as Livestock Project Leader at the Delta Branch Experiment Station in Stoneville where he served for 4 1/2 years working in Animal Nutrition. In 1956 he was appointed Superintendent of the Brown Loam Branch Station located near Raymond, a position he held for 32 years.

In 1988, he was promoted to Head of the Central Mississippi Research Center, which included the Brown Loam, Coastal Plains, South Mississippi and Truck Crops Branch Experiment Station. In 1990, Extension responsibilities were added and he was appointed Head of the newly formed Central Mississippi Research and Extension Center, where he served until his retirement in 1992. He has been a member of the RCAS, National and Mississippi Cattleman's Associations, Mississippi Farm Bureau and the American Society of Animal Science and authored more than 70 publications

Gene believes the most significant research contributions he has been associated with were the development of profitable winter grazing systems to increase weights of lightweight calves and the crossbreeding research with beef cattle. This work has received a high rate of acceptability and has provided significant benefits to the producers of Mississippi.

Gene and his wife, Yancie, now live on their farm in Utica, Mississippi where he runs a small cattle operation. They spend time on the business, travel and enjoy their family, 2 sons, a daughter, and 8 grandchildren.

DR. JERE MCBRIDE Resident Director Red River Research Station Bossier City, LA

Award Recipient - 1992, Lexington, KY



Dr. Jere McBride is recognized for his leadership taking the present Research in Center Administrators Society into its second phase of development, a development associated with major changes in structure, organization and performance. As one peruses the history of the Branch Station Superintendents Section as part of SAAS, he notices a significant change which occurred in 1984-85 to include a new name and a new dimension. That change did not occur spontaneously, it required visionary leadership. Jere McBride, more than any other individual, provided that leadership.

Jere says that the inspiration for stimulating an organizational change occurred on a bus tour during the annual meeting in 1983 in Atlanta. He and Wallace Griffey, then chairman,

discussed how the Branch Station Superintendents Section had seemed to have reached a plateau that was not changing. That discussion resulted in the authorization by chairman Griffey for McBride to conduct a survey of the membership. The completed questionaire pointed to some obvious needs to give the organization better definition, enhance the programs and increase membership.

Several of us met in Jackson, MS in 1984 and Little Rock, AR in 1985 to work under the leadership and guidance of Jere McBride (and Roberts Rules of Order) to hammer out what is now our permanent By-Laws. Establishment of the Executive Committee meeting in the fall of each year provided the forum for developing the annual program. Few members would contend that programs haven't improved in each of the past several years. The name was changed to more accurately reflect the true nature and function of the organization and attendance at the annual meeting has increased accordingly.

Dr. McBride has served in all officer positions and is currently the permanent Executive Treasurer. He has served in many other ways such as getting the plaques and engraving the awards, hosting the Executive Committee meeting and giving thoughtful advice and counsel to the Society.

Jere is a native of Louisiana, got a B.S. from Louisiana Tech and M.S. and Ph.D. degrees from LSU. He is one of our few members with industry experience, having worked for Shell Chemical prior to returning to the LSU System in 1975, to head the Pecan Research Station in Shreveport.

DR. WILLIAM C. LOE Associate Professor of Animal Science Director, Southwest Research and Extension Center University of Arkansas Hope, Arkansas

Award Recipient - 1993, Tulsa, OK



Dr. Bill Loe has been an active member of the RCAS for approximately 20 years and has made many significant Society. He served contributions to the 28 secretary/treasurer in 1986-87, second vice-chairman in 1987-88, first vice-chairman in 1988-89, and chairman in 1989-90. He was chairman of the Executive Committee in 1990-91. He has served numerous Society committees including the reorganization committee of 1984-85 which developed into the Research Center Administrators Society, where the By-Laws were drafted. He has also served on the RCAS Historical Committee and hosted the RCAS Executive Committee meeting in Little Rock in 1985. The annual meeting was held in Little Rock in 1990 and Bill was instrumental in helping make arrangements. He has made numerous professional presentations to the annual RCAS Convention.

Dr. Loe is a native of Arkansas and obtained college degrees from Arkansas State College, University of Arkansas and Louisiana State University. He has been Resident Director of the Southwest Research and Extension Center since 1978. He coordinates 30 research and educational programs which are led by 20 scientists. His training is in animal science and he is project leader of two animal science projects.

Dr. Loe has been involved in Gamma Sigma Delta and is a member of the American Society of Animal Science, Council for Agricultural Science and Technology, Southern Association of Agricultural Scientists, and several state organizations. In recognition of his organizational support he has been honored by the Arkansas State Farmers and the Dairy Shrine Club. He is listed in the biographical reference "Personalities of the South".

Bill and Betty are very active supporters of community programs. They support and enjoy their children and grandchildren.

DR. HOWARD L. MALSTROM Professor and Resident Director of Research Texas A&M Research and Extension Center El Paso, TX

Award Recipient - 1993, Tulsa, OK



Howard Malstrom attended his first RCAS meeting in 1983 in Atlanta. He represented the Texas delegation at the first RCAS organizational meeting in Jackson, MS in 1984. Since then, he has been an active participant in RCAS functions giving support and leadership to the newly organized society. Howard began his service as an officer with his election as secretary/treasurer in 1986. As first vice-chairman in 1988, Howard began recording program presentations at the annual meeting in New Orleans. Because of his dedication and persistence, these papers were later published as the RCAS's first proceedings. The "Proceedings of the RCAS - 1988" has become a true milestone in the development of In 1989, he served as the organization. chairman. His meticulous attention to detail and

organizational skills served him well and set the stage for an excellent annual meeting in Nashville, TN.

Howard received his B.S. degree at the University of Illinois and his M.S. and Ph.D. at the University of California, Davis in Plant Physiology. He was employed at the USDA field station at Byron, Georgia for seven years prior to his employment at Texas A&M where he conducted research on the physiology of pecan trees. In 1977, he joined Texas A&M University at the El Paso location to conduct research on pecans and grapes in the Trans-Pecos area. Howard became resident director of the Research Center in September, 1982 after serving as acting resident director for one year.

Following his tenure as an officer Howard has continued his interest and dedicated service through various committee assignments and as editor and publisher of the "Proceedings." The Society wishes to express its appreciation to Howard and his clerical staff for continuing the tedious task of editing and publishing the "Proceedings." Past Recipients of the **Distinguished Service Award** for service, leadership, and outstanding contributions to RCAS over an extended period of time.

Year Awarded

Recipient

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PAST PRESIDENTS, RCAS

Years

<u>Chairman</u>

1969 - 1970	Robert Moss
1970 - 1971	Preston Reed
1971 - 1972	Charles Douglas
1972 - 1973	Charles Douglas
1973 - 1974	D. M. Gosset
1974 - 1975	Henry Marshall
1975 - 1976	Tom Corley
1976 - 1977	H. Rouse Caffey
1977 - 1978	E. G. Morrison
1978 - 1979	
1979 - 1980	· · · · · · · · · · · Joe High, Jr.
1980 - 1981	Julian Craigmiles
1981 - 1982	Freddy Peterson
1982 - 1983	Wallace Griffey
1983 - 1984	· · · · · · · · · · · · Bill Webb
1984 - 1985	Gary Elmstrom
1985 - 1986	· · · · · · · · · · · · Norman Justus
1986 - 1987	
1987 - 1988	· · · · · · · · · · · Jere McBride
1988 - 1989	Howard Malstrom
1989 - 1990	Bill Loe
1990 - 1991	Edward Worley
1991 - 1992	Will Waters
1992 - 1993	James R. Hill, Jr.
1993 - 1994	Joe Musick