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ABSTRACT

Agri Tech Prep 2000 (ATP 2000) is a 4-year tech prep program intended to link high school and postsecondary curricula preparing New York students for careers in agriculture or acceptance into a college program in agriculture. Because teacher development was designated an integral project component for fiscal year 1992-93, a weeklong teacher development program was conducted in cooperation with the State University of New York in summer 1993. The program focused on classroom pedagogy, agricultural concepts, technologies/laboratory methods, core curriculum topics, and agricultural careers. Other inservice objectives were as follows: foster discussion about issues related to secondary-postsecondary articulation of agricultural instruction, establish professional dialogue between agriculture and academic core teachers and between teachers and project administrators, and assess the project and develop plans for future activities. Ten schools sent one or more representatives to the inservice program. Participants also received laboratory teaching kits/materials sufficient to teach a class of 20 secondary students, lesson plans and related instructional materials, and evaluation instruments. Project feedback obtained from written questionnaires and discussions was quite favorable. (Appendixes constituting half this document include the inservice and course program, course materials, presenter evaluations, and a review of week and summary evaluations.) (MN)

agri tech prep 2000

Teacher Development for ATP 2000 Project Report 1993-1994

Partial Fulfillment of Cornell Subcontract
NYS Project 137305
in Conjunction with
ATP 2000

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July 26-30, 1993

SUNY Alfred
College of Agriculture and Technology
Alfred, NY

Preface

The teacher development program summarized in this report was a joint effort of the ATP consortium members and cooperators. Many individuals contributed to the success of this phase of the project.

Table of Contents

Appendices

Introduction

Teacher development, an integral component of the ATP 2000 Project for fiscal year 1992-93, was part of the Cornell subcontract. This report summarizes the major events and activities associated with the teacher development phase. In addition, related activities of the primary project sponsor, members of the consortium and project cooperators are indicative of the team effort given to this project.

Needs Addressed by Project

Several needs apparent in agricultural education in New York State were addressed in this phase of the project.

Fragmentation and duplication of curriculum has been a current problem. In this phase of the project teachers began to incrementally integrate new curriculum in their programs. Teacher inservice is leading to an improved curricula continuum between high school agricultural education and New York State two year colleges of agriculture and technology. This is responding to a rapidly expanding and changing agriculture industry.

Declining enrollment in agricultural instructional areas is leaving a shortage of properly educated personnel for agricultural industry. The newly developed innovative instruction and contemporary curriculum will help address this problem, attracting students from a wide range of ability levels to meet employment demand in the broad agricultural industry. In addition, program options for entry, exit and re-entry in a continuum of instruction will match students' needs and interests.

Science, mathematics, communications and technology are essential components of agricultural instruction and are prerequisite skills for employment in the industry. However, many students aren't motivated by traditional instruction in these areas. Additionally, these academic instructional areas haven't been as prominent as they should be in traditional agricultural instruction at the secondary level. Infusing academic instruction in agricultural programs provides a familiar context to study that is intrinsically motivating to many students. This approach is addressing the problem of adequate preparation of high school students for higher education. Teacher inservice exposes teachers to various techniques which will enable them to incorporate traditional academic areas into their agricultural instructional programs.

Misconceptions about agriculture, agricultural education and related career opportunities have rarely been addressed in public education. Instructional materials presented in this inservice program included information on a wide range of career options in agriculture. These materials will create an awareness of the field of agriculture and related careers.

Teacher Development Objective

Teacher inservice education is a major component of ATP. The purpose of this phase is to facilitate implementation of a state-wide, comprehensive and articulated four year agricultural education curricula, encompassing the last two years of high school and the two years of post secondary education, with options for qualified students to continue in higher education. The past one and one half years have focused on revision of the high school curriculum. The project is approaching closure on this phase and is moving toward revision of college curriculum.

Specifically, this teacher development initiative is one of three objectives specified in the Cornell subcontract.

> Facilitate the implementation of new curriculum by planning and implementing a five day teacher development program for pilot school staff during Summer 1993.

Activities and Events

A summer teacher development program was planned and conducted in cooperation with SUNY Alfred, Cobleskill and Morrisville. Instruction focused on classroom pedagogy, agricultural concepts, technologies and laboratory methods, core curriculum topics and agricultural careers. Plans for the second in a series of teacher development activities were initiated during Spring 1993, Although the week long summer professional update was July 26- 30, much of the planning and development were within this contract year which ended June 30, 1993.

The thrust of the inservice was preparation to teach selected components of the first phase of ATP. Facilitating an exchange of information between core academic subject matter teachers and agriculture teachers is integral to this mission. Informational and instructional events were developed during Spring and Summer 1993 to encourage interdisciplinary communications.

SUNY Alfred hosted the inservice. Morris Mead, ATP Summer Session host institution site coordinator gave administrative leadership for local arrangements. Faculty and administrators from SUNY Morrisville and Cobleskill were equal partners in planning and conducting the summer program. The Cornell Instructional Material Service played an integral part in session planning and curriculum development. Additionally pilot school teachers were active in developing and presenting the inservice materials.

Planning and development activities for the summer inservice were part of the entire project activities, not an isolate event linked to this subcontract. Key players were the ATP steering committee, SUNY Agriculture and Technical College faculty, administrators and the teaching staff in the secondary pilot schools, the Instructional Material Service at Cornell and the authors of this report. Other areas of activities include research evaluation and project administration. These efforts will be addressed in a subsequent report.

Inservice Objectives

The inservice objectives for the ATP Project in 1992-1993 were to:

- demonstrate instructional materials and methods of instruction.
- model teaching events.
- foster discussion about issues related to secondary to post secondary articulation of agricultural instruction.
- improve communications and establish professional dialogue between agriculture and academic core teachers and between teachers and project administrators.
- assess progress and develop plans for future

Planning

The planning activities for the summer inservice included:

- Review of evaluations from Teacher Inservice Session at Morrisville, July 1992. Fall, 1992
- Review initial summer session plans with ATP steering committee, January 1993.
- Select topics for curriculum and instructional materials development, March 1993.
- Select SUNY Alfred as the summer session site and identify a site coordinator, March 1993.
- Survey pilot teachers for topics of most interest and greatest need for inservice. April, 1993.
- Identify topics and presenters for each topic. May, 1993.
- Develop curriculum materials. April through June 1993.
- Review of Environmental Science curriculum by pilot school teachers and two year college faculty. Emphasis on academic integration. June, 1993.
- Review of desires and needs of participants through in-depth interviews. Respondents included pilot school teachers, guidance counselors and administrators. May through June, 1993.
- Make local arrangements, develop the summer program and register participants, June and July, 1993.
- Deliver and evaluate the program, July 1993.

Throughout this process there was a close coordination of teacher inservice, project evaluation, and the development of instructional material through the Cornell Instructional Materials Service (IMS).

Instructional Topics

Materials developed by IMS provided content for the summer inservice. The curriculum writers for IMS served as presenters during the inservice programs, along with other participants in the ATP project. Presenters included high school, post secondary and Cornell University faculty.

Topics for the summer inservice were selected by the project steering committee. These are the areas targeted for the first phase of curriculum implementation. Each topic is described in the summer session program (Appendix A). The focus areas were:

- Overview
- Ecosystems
- Tissue Culture
- Soils
- Water and Air
- Plant Science Using Long Distance Learning and Multi-media Communication
- Plant Morphology and Taxonomy
- Population Dynamics
- Innovative Ideas in Animal Science
- Review of Week

Participants

Teachers and project staff directly responsible for ATP program implementation attended the summer inservice program. Academic core subject matter teachers and non-pilot school teachers were also encouraged to attend. Administrative representatives were invited to attend in order to update themselves on administration, guidance and counseling practices related to the project.

The pilot schools include:

Cuba–Rushford
Fillmore
John Bowne
Madison–Oneida BOCES
Pioneer
Vernon–Verona–Sherrill
Greenville
Friendship
Lowville
Putnam Westchester BOCES
St. Johnsville
Tri Valley

All schools with the exception of Cuba-Rushford and Putnam Westchester BOCES sent one or more representatives. Additionally, approximately one third of participants were non-pilot school teachers.

Products and Services

Summer Inservice

Products and services provided to participants in the summer session program included:

- Laboratory teaching kits and materials for each topic to teach a class of 20 secondary school students. See Appendix B for a list of the material distributed.
- Lesson plans and related instructional materials for the Environmental Science curriculum assimilated in a three ring notebook, *Environmental Science Pilot Materials*(Available on request from Cornell Instructional Materials Center).
- Inservice instruction on the use of instructional and curriculum materials.
- Evaluation instruments

Each secondary school and BOCES received a set of materials. In addition, a set was provided to each participating post secondary college and the Instructional Materials Service at Cornell University.

Due to the Cornell linkage to teacher development, the week long activity also carried an option for credit from the Cornell College of Agriculture and Life Sciences, Department of Education, Summer Session Division. Learning contracts related to curriculum development were developed for those who registered for credit. As with most conferences, there were significant intangible benefits including the professional exchange that occurred between presenters and those in attendance.

Teacher Updates

Updates were held during 1992-1993 at various meetings that agriculture teachers typically attend. Perhaps the most notable will be the Annual New York State Agriculture Teachers' Conference held the last week of September. Typically this conference is held in June but was delayed this year because of schedule conflicts. Additionally, "Options for Change, " a New York State Tech Prep Conference is being held in Syracuse during the first week of October.

Teachers will be updated on ATP Project activities. Specifically, project developments during 1992–93 will be shared by the coordinator. In addition, there will be a brief report on project evaluation and research that will provide the background information for curriculum development and related activities.

Evaluation

Summer Inservice

The summer inservice program was evaluated using two different methodologies. Written questionnaires were used to evaluate the presenters and to obtain perspectives on the week in review. Additionally, since both pilot study interviews and evaluations from the teacher inservice, 1992, indicated the teachers wanted more interaction with program planners and administrators, the format was changed slightly to incorporate more interaction/discussion time. A one hour discussion between participants, project planners and administrators and presenters was held at the close of each day to obtain a general overview of the concerns of teachers involved in the ATP project. Additionally, a three hour long session was held on Wednesday night for discussion between teachers and the Steering Committee and to develop a tentative agenda for the upcoming year. These discussions are evaluated separately.

Evaluation of Presenters

First, participants evaluated sessions following half and full day presentations. Criteria for the evaluation included:

1. Presentation format
2. Curriculum content
3. Integration of academic instruction into technical subject matter
4. Overall opinion of instructional materials/presentation
5. Contribution to school curriculum
6. Perceptions of the interest level lessens will generate
7. Appropriateness of content of material for use within the school

8. Appropriateness of activities for use within school

9. Clarity of material

Appendix C includes evaluations of the presentations. Unfortunately, the evaluation materials for the second day of the session were not available at the time this report was prepared. Evaluation results are shown in Table 1.

Table 1. Presentation Evaluations: Mean Scores

	Ecosystem	Water and Air	Distance Learning	Plant Morph.	Pop. Dynamics
Presentation format	3.95	4.75	4.32	4.17	4.23
Curriculum Content	4.21	4.68	4.40	4.17	4.38
Integration of academic instruction into technical subject matter	4.16	4.40	4.44	4.25	4.46
Your overall opinion of the instructional materials/presentation	4.21	4.65	4.28	4.17	4.23
Contribution to School curriculum	4.47	4.65	4.40	4.25	4.08
What interest level will the lessons generate among students?	3.94	4.45	4.56	3.83	3.92
Is the content of the material appropriate for use within your school?	4.11	4.70	4.38	4.17	4.00
Are the activities appropriate for use within your school setting?	4.11	4.70	4.48	4.17	4.25
Is the material clearly written?	4.16	4.35	4.13	4.25	4.15

In general, the presentations were rated very favorably. Examples of positive comments include

- "An excellent job",
- "Very good hands on experience."
- "Good job. Go for it. The information was great. "
- "Opportunities are just mind boggling."
- "Great new format".

Some concerns were raised about the amount of "hands-on" time and the level of technology needed to run the program. Examples of some of these comments include:

- "Presentations need to be activity oriented around curriculum materials."
- "This presentation (Water and Air) is dependent upon one critical piece of equipment. Perhaps alternatives for teaching the same material could have been explored."
- "Too much time spent telling us what would be presented. Get to the point. Hands on."
- "No plants. More hands on!! To get experience (Plant Science with Long Distance Learning).

Week in Review:

To provide feedback for inservice development, two extensive instruments were administered which gathered information concerning the entire inservice week, *Review of Week Presentations* and *Overall Summary*. The purpose of these exercises was three fold. First, it overall feedback concerning the presentations. Second, the information will be useful in that it provides feedback from the teachers and allows them to present concerns and ideas regarding the week as well as general comments. Third, feedback was gathered concerning the inservice format, workshop staff and accommodations and facilities which will be useful for future planning.

In general, teachers rated the entire inservice program very highly. Examples of comments include:

- "Excellent job. Well done."
- "Very practical. Innovative. Exciting. Thank you"
- "A fun week. All agriculture teachers that want to succeed need to update and adopt new ideas and techniques to challenge the students."
- "I really feel we are headed in the right direction."
- " Great job".

The primary concerns raised were the need for more interaction between teachers and between teachers and administrators, more involvement of academic teachers and non-pilot school teachers, less seat time and more hands on activities. Comments include:

- "Thanks for a great week. Great teachers. Get better communication between administrators and teachers. Administration has changed."
- "Do not make us sit for two hours!! We want to just go ahead and work with the materials!",
- "We need to get more academic teachers involved. They would be excited if they could see the level and sophistication of the material."

A number of participants were concerned about the role of non-pilot school teachers in the project. In particular, one non-pilot school teacher wrote:

> I found it very useful but yet frustrating as I was not a pilot school teacher. The materials and resources being made available to pilot schools seem like something I would dream of. The reality of my school getting the materials or writing grants for this doesn't look good. Overall, I thought this was a great week for dispensing information.

Some suggestions were also made to improve the format of the week. These include:

- "Maybe consider having more than one topic at the same time. People could go to areas of interest.
- "Move activities so we have free time in the afternoon and sessions in the evening."
- "Need lots of inservice for specific areas. Inservice activities need to be narrow in scope (hands on how you would teacher verses general ideas; although suggestions from different teachers are good too)."

The evaluation summaries are in Appendix D.

Discussion Sessions:

Discussions were highly informative and were intended to improve communication, generate ideas and surface issues of concern to teachers. Discussions were highly successful in achieving these goals.

Teachers were open and honest in their appraisal of the status of project implementation. Generally, teachers appeared to be very happy with materials and excited to be involved. Agriculture teachers felt that the ATP 2000 project was "revitalizing agriculture in New York State".

Topics of conversation included primarily portfolio development and use and teacher perceptions of communication between teachers and teachers and administrators.

Teachers were highly enthusiastic about the use of the portfolio as an educational/evaluation tool. Interest was expressed in the development of a portfolio guide for teacher use and for a possible teacher inservice at a later date. The portfolio guide is expected to be available in early October.

Teachers were highly concerned with the level of teacher input into project decision making as well as with existing communication between teachers and administrators and between academic and agriculture teachers. As a result of this discussion, Ben Conte, the agriculture teacher at St. Johnsville School was invited to join the Steering Committee. It is hoped that this will improve teacher ownership over the project and enhance inter-group communication. Additionally, project planning for the 1993-94 school year will focus on increasing opportunities for communication between teachers and between teachers and administrators.

Concerns were also expressed about involving industry members in the project. There has been little to no involvement or input from the agricultural industry, This involvement is a mandate of the project and is high priority for development in 1993-1994. Other opportunities to expand the project include the State School Board Associations and the Rural Schools Program at Cornell. The possible involvement of these entities was discussed. In addition, the State Council for Agricultural Education, the Association for Teachers of Agriculture in New York and other related groups seem to be viable contributors. The involvement of related groups through an advisory

committee and other mechanisms originally planned in the project proposal has not yet materialized. The increased involvement of these groups will be necessary in 1993-1994 for the project to meet the mandate expressed in the original proposal.

Other issues discussed were the need to bridge high school courses with college courses, increase the emphasis on careers and increase the use of videos.

Summary, Conclusions and Recommendations

Summary

Teacher development activities during 1992–93 fulfilled the needs and objectives required of the Cornell subcontract and the related ATP Project. However, there are high priority areas to address in 1993-1994 to meet goals of the original proposal.

Periodic updates of key leaders and participants in ATP 2000 were important to the inservice efforts during the past year. These updates were part of plenary meetings held twice at SUNY Alfred, Cobleskill and Morrisville; the Annual Meeting of the Association of Teachers of Agriculture in New York and other gathering of teachers. Members of the project steering committee, the project coordinator, members of the Cornell subcontract team and other representatives of ATP were effective spokespersons at these meetings.

Updates and reviews of project teaching materials and inservice activities are planned for 1993-1994. The experiences and feedback from activities this year will be very helpful in planning future activities.

The major inservice effort during 1992-1993 was the week long program at SUNY Alfred. Curriculum and teacher development was the primary thrust, providing new curriculum, instructional materials and teacher training to begin implementation of the ATP project. In addition, inservice also focused on the administrative, counseling and related networking necessary to support implementation.

Integrating academics in agricultural education is an important component of ATP 2000. Worksheets, group discussions, and other reflective processes encouraged teachers to examine how science, math, communications, technology and agriculture teachers can work together to improve teaching and learning. Additionally, discussion sessions served to enhance communication and elicited ideas and input from participants in all areas of the ATP project. It will be important to strengthen efforts in this area as the project progresses.

Evaluations and reflections of the inservice were positive, indicating a need for continuing inservice programs in the future. Comments on presentations and curriculum materials will be useful to curriculum writers who are preparing teaching materials for ATP 2000. The major concerns that teachers have about implementing ATP 2000 are communication with other teachers and administrators, building teaching relationships with academic teachers, access to equipment and facilities, funding for long term support and time to teach the new curriculum. A newsletter planned for implementation this year should increase communication between schools and between schools and the project leadership team. Potential problems exist concerning structural issues related to initiatives proposed in the initial grant. These issues include the implementation of an advisory committee, the involvement of industry representatives in planning and implementation, and the development of a plan to expand the project to other schools.

Conclusions

Based on evaluations, experiences and observations of the inservice component this year the following conclusions were drawn:

Context

1. The secondary and post secondary schools in the ATP program are providing a receptive environment for changing the school curriculum. The teacher and staff are cooperating, although some of the centers are less active than others.

2. All of the secondary schools made special provisions to begin data collection using the Career and Educational Interest instrument in early Spring 1992. Additionally, three pilot schools participated in a pilot study to obtain baseline qualitative interview data concerning the status of the implementation of the ATP project and related concerns or difficulties. Hour long interviews were held with teachers, students, guidance counselors and administrators.

Input

3. The Cornell University Agricultural, Extension and Adult Education Unit and the Instructional Materials Service provided support services for project evaluation, research and development.

4. The 1992-93 project year involved agriculture teachers, academic teachers, school administrators, and others in developing curriculum materials. Industry representatives were not involved to the extent envisioned in the original project proposal.

5. A project advisory committee has not yet been implemented. This is a concern that needs to be addressed in 1993-1994.

6. The Steering committee and team leaders at SUNY Alfred, Cobleskill and Morrisville were essential for project management and led to effective development of ATP in 1992-1993.

Process

7. Reactions and feedback from teachers during update and planning meetings provided the steering committee and members of the Cornell development team with information they needed to refine project initiatives. A full review of curriculum materials occurred prior to presenting them at the summer inservice.

8. Periodic meetings between ATP project leaders and participants contributed to effective communications and were invaluable to the development process. These meetings need to occur on a frequent basis and provide more opportunities for teacher input and interaction than during 1992-1993..

9. Integrating math, science, communications and technology with agricultural education is an important component of ATP 2000. Although agriculture teachers are highly motivated to work with other teachers, they are somewhat uncertain on how to facilitate this new initiative in their schools.

10. Although the number of academic core teachers at the 1993 ATP inservice was limited, they added significant positive dynamics to discussions on integrating academic skill building events in agricultural education. Efforts to involve academic core teachers need to be strengthened in 1993-1994.

11. A preregistration meals and lodging package was an efficient strategy to accommodate the needs of those attending the conference. It allowed the inservice leaders to devote their full time to instructional activities and the program.

Product

12. Inservice activities such as the one at SUNY Alfred are essential for project implementation. Teachers need to develop new skills and understandings to teach new technologies and science associated with agriculture.

13. Characteristics that positively affected the 1992-1993 inservice were:

- Appoint a coordinator who works at the inservice site to assist with planning, development and implementation of the program
- Involve the steering committee, coordinator, and campus coordinators in planning
- Register persons in advance of workshops
- Offer college credit and continuing education unit options
- Provide instructional materials and lesson plans that are teacher friendly and ready for use in the classroom
- Model teaching at a level directly transferable to the high school classroom
- Emphasize hands-on learning activities
- Use laboratory activities that can be emulated in schools and the school communities
- Distribute practical and motivating laboratory science kits and provide instruction on their use
- Assimilate instructional materials for distribution at conference registration
- Each day, provide time for participants to:
  - interact
  - reflect on their experiences
  - share their perspectives
  - discussion issues and concerns with administrators
  - conduct a daily evaluation
- Use evaluation instruments, discussion periods and other strategies to facilitate the reflective processes
- Include social events that develop good group dynamics and rapport

- Provide flexible time in the evening to tour instructional facilities on the college campus and for teachers to informally share their professional activities.

14. Results of the spring research showed students' career interests and related information were interesting and useful to teachers in selected schools. Presentation of the information and an explanation of the process for interpreting the results was a positive component of the inservice program. It will help teachers and other school officials give career counseling to students and plan curriculum that meets their needs.

15. Problem solving, the scientific process, and critical thinking were considered by teachers as useful teaching strategies and were an important component of the summer inservice program. These strategies have not frequently been used formally by teachers.

Recommendations

The inservice experience this year leads to the following recommendations:

Context

1. Project participants and cooperators need a positive context for project development, facilitated by inservice updates where there is an open exchange of information, problems and concerns. This exchange of information must flow in all directions and provide opportunity for teacher input.

Input

2. Additional input on the development of teaching materials is needed from academic and agriculture teachers, along with school administrators, agricultural industry representatives and others.

Process

3. Systematic review of instructional materials during the developmental phases should continue. This may mean expanding the writing teams to include industry representatives.

4. Update and planning meetings should be planned and continued as an active component of the project. Meetings must be planned and scheduled well in advance to allow participants adequate time to build attendance into their schedules.

5. The positive aspects of the model for developing inservice programs this year should be used next year.

6. New strategies are needed to involve academic teachers in the all stages of project planning and activities. Strategies are to develop directed activities that require consultation between teachers and build academic teacher presentations into inservice programs.

8. Similarly, strategies should be developed to involve administrators and guidance counselors in sessions that keep them informed, involved and supportive of the project. These activities should be very focused, of high quality and actively involve those who are attending.

9. A committee should be selected to assist in designing inservice education programs.

Product

10. A newsletter should be fully implemented in 1993-1994.

11. Science based laboratory kits sufficient for use in schools should be selected and distributed.

12. Key stake holders should be involved in review and refinement of instructional materials for inservice programs.

13. Curriculum writing should continue on schedule during 1993-1994 in a similar fashion to that used for 1992-1993.

In general, the inservice program this year was a good experience. The experience was positive and supported by excellent evaluations. The challenge for the future is to make refinements, involve more people and build a continuum of instruction that facilitates project implementation.

The next scheduled event related to inservice is a meeting of project leaders to discuss the inservice and curriculum development programs. Selected teachers who attended the ATP 2000 summer inservice program will make presentations at the agriculture teachers' annual fall leadership conference. This will inform teachers across the state who are not directly involved with ATP 2000 and help to set the stage for statewide implementation.

APPENDIX A

INSERVICE AND COURSE PROGRAM

AGRI-TECH PREP 2000 SUMMER COURSE

JULY 26-30, ALFRED STATE COLLEGE

DAILY AGENDA

MONDAY, JULY 26

10:00-12:00	Welcome/Introduction/Overview - Environmental Science Curriculum Terry Hughes/Dean Sutphin
12:00- 1:00	Lunch
1:00- 4:00	Environmental Science - Ecosystems Room 226 - Ag. Science Building David Smith, Associate Professor, Department of Agriculture and Horticulture SUNY at Alfred. A brief discussion of various types of ecosystems on a global basis will be related to smaller ecosystems and methods that may be used to explain the concepts involved. A field trip will follow to observe various aspects of Ecology and suggestions will be exchanged how the areas of Communications, Math, Science and Technology might be integrated with these concepts.
4:00- 5:00	Evaluation - Daryle Foster
5:30- ?	Dinner
7:00- 8:00	Meeting for Cornell Credit - Daryle Foster

AGRI-TECH PREP 2000 SUMMER COURSE

JULY 26-30, ALFRED STATE COLLEGE

DAILY AGENDA

TUESDAY, JULY 27

8:30-12:00	Plant Tissue Culture Room 226, then relocate to laboratories in rooms 111 & 113, Ag. Science Building Richard Hoffman, Professor Department of Agriculture & Horticulture SUNY at Alfred. Mary-Lou Genaway, Agriculture Teacher Pioneer Central School This session will include how plant tissue culture can be used in your classroom to demonstrate the application of biotechnology. Students will clone specific plant materials. Emphasis will be on classroom and hands-on activities as they relate to this unique method used by the plant propagator and the genetic engineering technician. Chemical, physical, mathematical and biological principles will be stressed. Making media, selecting plant materials, surface sterilization, clean surgical procedures, and aseptic techniques will be integrated into the topic.
12:00- 1:00	Lunch
1:00- 4:00	Soils Room 226, Ag. Science Building Than Mehlenbacher, Agriculture Faculty Fillmore Central School Examination of soil stratification by digging a test site, examining soil samples for microscopic particles, land judging utilizing a test site score card, and determination of slope by the use of slope meter.
4:00- 5:00	Evaluation - Andy Fagan
5:30- ?	Dinner
7:00- 8:00	Integration of Academic Skills - Terry Hughes

AGRI-TECH PREP 2000 SUMMER COURSE

JULY 26-30, ALFRED STATE COLLEGE

DAILY AGENDA

WEDNESDAY, JULY 28

8:30-12:00	Water & Air Room 226 - Ag. Science Building Donna Moore, Agriculture Teacher Lowville Academy This session will include demonstrations of both ground water and surface water models and their classroom application. Several water and air pollution test kits will also be used and evaluated for student use.
12:00- 1:00	Lunch
1:00- 4:00	Plant Science Using Long Distance Learning and Multi-Media Communication Rooms 223-226 - Ag. Science Building Mary-Lou Genaway and Richard A. Hoffman, Jr. Agriculture Teacher, Pioneer Central School Richard A. Hoffman, Professor Department of Agriculture & Horticulture SUNY at Alfred. Following a presentation dealing with Multi-Media use in the classroom and how classrooms can be networked into a distance learning configuation, the workshop participants will be allowed time to use various high-tech learning systems. These systems will include: Optel Telewriter III IBM Info Window Macintosh Multi-Media woody plants disc Bio Sci II videodisk Earth science videodisc
4:00- 5:00	Evaluation - Morris Mead
5:30- ?	Dinner
7:00- 8:00	Steering Committee - Concerned Ideas for Coming Year - Terry Hughes

AGRI-TECH PREP 2000 SUMMER COURSE

JULY 26-30, ALFRED STATE COLLEGE

DAILY AGENDA

THURSDAY, JULY 29

8:30-12:00	Plant Morphology and Taxonomy Room 226 - Ag. Science Building Richard Hoffman, Professor, Department of Agriculture and Horticulture SUNY at Alfred. Mimi Trudeau, Vocational Instructor IV New York State Division for Youth- Lansing Center The goal of this session is to get insight into the ways that various plant parts can be used to study plant anatomy, morphology and taxonomy. Student exercises and demonstrations will emphasize the "learning by doing" approach to teaching. Collaborative learning among students will be stressed. Wisconsin fast plants and "Bottle Biology" will be discussed and demonstrated.
12:00- 1:00	Lunch
1:00- 4:00	Population Dynamics Room 226 - Ag. Science Building Peter Colverson, Associate Professor, Biology Mohawk Valley Community College In this workshop, participants will gain hands-on experience in how to teach population dynamics, with particular reference to human population growth. We will explore the reasons why the human population is growing rapidly, ways to measure and predict this growth, and why an appreciation of human population growth is so integrally tied into a full understanding of modern environmental science.
4:00- 4:30	Evaluation - Mhora Newsom-Stewart
5:00-	Leave for Keuka Lake from Administration Building
6:30- 9:00	Dinner Cruise, Keuka Maid
10:00	Return to Alfred

AGRI-TECH PREP 2000 SUMMER COURSE

JULY 26-30, ALFRED STATE COLLEGE

DAILY AGENDA

FRIDAY, JULY 30

8:30- 10:30	Innovative Ideas in Animal Science Room 226 - Ag. Science Building Glenn Caslick Former Agriculture Teacher/Coperative Extension Agent An introduction into Animal Science, with a unique "hands-on" lab-- "making a window in the egg". This will be followed by teacher discussion and input of ideas into the curriculum and the implementation of the same.
10:30-11:30	Review of Week - Dean Sutphin
11:30-12:00	Steering Committee Update - 9/3/94 Strategies ATP 2000 - Terry Hughes

APPENDIX B
COURSE MATERIALS

COURSE MATERIALS

1. "Genetic Engineer, A Natural Science" . Monsanto.
2. "Biotechnology for All". Hobsons Scientific.
3. Modified acreage grid. by Milton Bryan.
4. Land judging scoreboard. Land judging in New York State.
5. Forestry curriculum in NYS schools-a second chance. by Bernard B. Braun.
6. Distance Learning and Interactive Multi-media. Alfred State SUNY College of Technology.
7. Environmental Science Pilot Materials.
8. Variety of material displayed for use and possible purchase by teachers.

APPENDIX C
EVALUATION OF PRESENTERS

Integrating Science and Agriculture Through Agri-Tech Prep 2000

Monday, July 26

Please rate each presentation by circling the number that best reflects your opinion of that presentation according to each of the listed characteristics.

Introduction/Overview
10:00-12:00

	n	very poor	poor	average	good	very good	$\bar{x}$
Presentation	17	0	2	7	4	4	3.59
Content	16	0	1	6	7	2	3.63
Helpfulness of Presentation	16	0	1	7	5	3	3.63

COMMENTS:

I did not find it very beneficial. To maintain attention we would be better to get to the "meat" after a short intro so that people get "in touch" and have something to discuss. Get people into the program so they see something tangible before you ask them their opinion.

I enjoyed the afternoon session where we were able to see all the various types of ecosystems. Continue this type of an approach. Also, the morning session was very good.

<u>Very boring</u> way to start out--especially after a long ride here!!

Very well done. Need more of these work shops.

Ecosystems
1:00-4:00

Please rate this presentation by circling the number that best reflects your opinion of that presentation according to each of the listed characteristics.

	n	very poor	poor	average	good	very good	$\bar{x}$
Presentation format	19	0	0	5	10	4	3.95
Curriculum Content	19	0	0	0	15	4	4.21
Integration of academic instruction into technical subject matter	19	0	0	2	12	5	4.16
Your overall opinion of the instructional materials/presentation	19	0	0	2	11	6	4.21
Contribution to School curriculum	17	0	0	1	9	7	4.47

	n	none	little	some	high	very high	$\bar{x}$
What interest level will the lessons generate among students?	18	0	0	4	11	3	3.94

	n	not at all	little	some	very	extremely	$\bar{x}$
Is the content of the material appropriate for use within your school?	19	0	0	3	11	5	4.11
Are the activities appropriate for use within your school setting?	19	0	0	4	9	6	4.11
Is the material clearly written?	19	0	0	1	14	4	4.16

COMMENTS:

What I see looks good. I'll know better after I do it.

As a non-pilot school teacher, I feel like I am on the outside looking in. I am not aware of previous meeting, nor have I tried to teach any of this. I liked the hands on part. There is too much sitting around talking and feedback that I'm not really involved with. Couldn't pilot school peiple involved with this meet at a later time?

Very good--need all the simple experiments we can do with the students.

Presentations need to be activity oriented around curriculum materials.

Was well done

Integrating Science and Agriculture Through Agri-Tech Prep 2000
Wednesday, July 28

Please rate each presentation by circling the number that best reflects your opinion of that presentation according to each of the listed characteristics.

Water and Air
8:30-12:00

	n	very poor	poor	average	good	very good	$\bar{x}$
Presentation format	20	0	0	0	5	15	4.75
Curriculum Content	19	0	0	0	6	13	4.68
Integration of academic instruction into technical subject matter	20	0	1	2	5	12	4.40
Your overall opinion of the instructional materials/presentation	20	0	0	1	5	14	4.65
Contribution to school curriculum	20	0	0	0	7	13	4.65
		none	little	some	high	very high	
What interest level will the lessons generate among students?	20	0	0	1	9	10	4.45
		not at all	little	some	very	extremely	
Is the content of material appropriate for use within your school?	20	0	0	1	4	15	4.70
Are the activities appropriate for use within your school setting?	20	0	0	1	4	15	4.70
Is the material cleary written?	20	1	0	2	5	12	4.35

COMMENTS:

I did not attend this program.

I think the kit's instructions were poorly written. This was discussed during class. Great hands on experience. I enjoyed it!

This presentation is dependent upon one critical piece of equipment. Perhaps alternatives for teaching the same material could have been explored.

An excellent job.

Very good hands on experience.

Not in attendance.

Modules were excellent. Good job of explanation.

Direction in kits were difficult.

Very hands on. Everyone involved.

Plant Science Communication System Using Long Distance Learning
1:00-4:00

	n	very poor	poor	average	good	very good	x
Presentation format	25	0	2	2	7	14	4.32
Curriculum Content	25	0	0	4	7	14	4.40
Integration of academic instruction into technical subject matter	25	0	0	3	8	14	4.44
Your overall opinion of the instructional materials/presentation	25	0	1	3	9	12	4.28
Contribution to School curriculum	25	0	1	2	8	14	4.40
		none	little	some	high	very high	
What interest level will the lessons generate among students?	25	0	0	2	7	16	4.56
		not at all	little	some	very	extremely	
Is the content of the material appropriate for use within your school?	24	0	0	3	9	12	4.38
Are the activities appropriate for use within your school setting?	25	0	0	4	10	11	4.48
Is the material clearly written?	16	0	0	3	8	5	4.13

COMMENTS:

I look forward to having our school and teachers get involved more with the technology.

Should have had more time to use equipment!

Too much time spent telling us what would be presented. Get to the point. Hands on.

Good job. Go for it. The information was great. Opportunities are just mind boggling.

Distance learning interaction may not be for all students. Disney effects are great however.

Outstanding potential.

Interesting.

I would be a little concerned in my (Tri-Valley) school that this type of activity may dominate the instruction and overall activities of the class and the students may not get a balance of other "hands on" activities. Our computer technology in our school is very strong and sometimes we forget what else is in the world around us. Beth.

No plants. More hands on!! To get experience.

I would have liked to have more time to play with the laser discs. It is such new technology to me, a computer phobic, that I'm not sure if I can accurately portray it all to my administration. I would have liked a handout of addresses to order laser discs from; especially since I am not a pilot school.

More hands on!

Great to be here!

Integrating Science and Agriculture Through Agri-Tech Prep 2000

Thursday, July 28

Please rate each presentation by circling the number that best reflects your opinion of that presentation according to each of the listed characteristics.

Plant Morphology and Taxonomy
8:30-12:00

	n	very poor	poor	average	good	very good	$\bar{x}$
Presentation format	12	0	0	2	6	4	4.17
Curriculum Content	12	0	0	3	4	5	4.17
Integration of academic instruction into technical subject matter	12	0	0	2	5	5	4.25
Your overall opinion of the instructional materials/presentation	12	0	0	2	6	4	4.17
Contribution to School curriculum	12	0	1	1	4	6	4.25
		none	little	some	high	very high	
What interest level will the lessons generate among students?	12	0	1	3	5	3	3.83
		not at all	little	some	very	extremely	
Is the content of the material appropriate for use within your school?	12	0	1	1	5	5	4.17
Are the activities appropriate for use within your school setting?	12	0	1	1	5	5	4.17
Is the material clearly written?	12	0	0	2	5	5	4.25

COMMENTS:

Seemed rather elementary for an advanced level course. Would be good in BASI.

Lots of hands on ideas! Great

Excellent use of strategies and content.

Hoffman was too involved in presentation. Overshadowed Trudeau. Too many interruptions.

Not enough time to do everything. We needed more time to work with the material.

Population Dynamics
1:00-4:00

	n	very poor	poor	average	good	very good	$\bar{x}$
Presentation format	13	0	0	1	8	4	4.23
Curriculum Content	13	0	0	0	8	5	4.38
Integration of academic instruction into technical subject matter	13	0	1	1	2	9	4.46
Your overall opinion of the instructional materials/presentation	13	0	0	2	6	5	4.23
Contribution to School curriculum	13	1	0	2	4	6	4.08
		none	little	some	high	very high	
What interest level will the lessons generate among students?	12	0	1	2	5	4	3.92
		not at all	little	some	very	extremely	
Is the content of the material appropriate for use within your school?	12	0	0	2	8	2	4.00
Are the activities appropriate for use within your school setting?	12	0	0	1	7	4	4.25
Is the material clearly written?	13	0	0	2	7	4	4.15

COMMENTS:

Need answer sheets and graphs of answers to be included in package materials. It was super. Something I have never thought of before.

Mr. Calverson generated a lot more interest in me than I had.

Interesting! Good activities but some of the exercises are too difficult for high school. We got confused!

Run exercises using wildlife populations. Deer camp. Computer population model.

Interesting. Great thinking activities.

Good examples even though we were in our seats. You can keep interest while sitting.

Very good. Students will enjoy doing this.

Integrating Science and Agriculture Through Agri-Tech Prep 2000
Friday, July 30

Please rate each presentation by circling the number that best reflects your opinion of that presentation according to each of the listed characteristics.

Innovation Ideas in Animal Science
8:30-10:30:00

	n	very poor	poor	average	good	very good	$\bar{x}$
Presentation	17	0	0	1	7	9	4.47
Content	18	0	0	1	7	10	4.50
Helpfulness	18	0	0	2	4	12	4.56

COMMENTS:

I feel the approach is right on task and will serve future agriculturalists.

Excellent

Great hands on

Excellent-Good ideas on old topics

Job well done

Very good

Great new format

Excellent. It was the best!

APPENDIX D

REVIEW OF WEEK AND SUMMARY EVALUATIONS

Review of Week Presentation

	n	very poor	poor	average	good	very good	$\bar{x}$
Presentation	16	0	0	4	5	7	4.19
Content	16	0	0	0	5	11	4.69

COMMENTS:

Excellent job. Well done.

For those that I participated in I was very impressed. It's unfortunate that all those teachers that are involved in ATP were not present.

Very practical. Innovative. Exciting. Thank you.

Great Boat Ride. Great Fire Truck ride.

Some parts very good. Some not so good. Maybe consider having more than one topic at same time. People could go to areas of interest.

A fun week. All ag teachers that want to succeed need to update and adopt new ideas and techniques to challenge the students.

Move activities so we have free time in the afternoon and sessions in the evening.

Need lots of inservice for specific areas. Inservice activities need to be narrow in scoe (hands on how you would teach verses general ideas; although suggestions from different teachers are good too.)

Overall Summary

Please rate the week at Alfred according to the following characteristics:

	n	very poor	poor	average	good	very good	$\bar{x}$
Type of presentations offered	17	0	0	0	9	8	4.47
Format of presentations	17	0	0	3	10	4	4.06
Usefulness of discussion with Steering Committee	12	0	0	5	2	5	4.00
Amount of Discussion Time with Other Teachers	16	0	0	1	6	9	4.50
Amount of Discussion Time with Steering Committee	15	0	1	6	6	2	3.60
Helpfulness of week to implementation of ATP 2000	17	0	0	0	7	10	4.59

COMMENTS:

I really feel we are headed in the right direction.

We need to get more academic teachers involved. They would be excited if they could see the level and sophistication of the material.

Thanks for a great week. Great teachers. Get better communication between administrators and teachers. Administration has changed.

Great job

<u>Do not</u> make us sit for two hours!! We want to just go ahead and <u>work with the materials.</u>

Thank you to Alfred faculty, Rich Hoffman and Mo Mead for the excellent support, facilities and equipment. Both were very helpful and made the conference a success. Thanks.

I found it very useful but yet frustrating as I was not a pilot school teacher. The materials and resources being made available to pilot schools seem like something I would dream of. The reality of my school getting the materials or writing grants for this doesn't look good. Overall, I thought that was a great week for dispensing information.