N93-23144

Workshop 4

# The Use of Continuing Adult Education

Frank J. Redd
Program Director, Rocky Mountain Space Grant Consortium
Utah State University
Logan, Utah 84321-4140

First National Space Grant Conference
Columbia, Maryland
January 16-19, 1990

# The Use of Continuing Adult Education


## Abstract

The objectives of the National Space Grant and Fellowship Program include the expansion of space-oriented educational programs beyond the traditional boundaries of university campuses to reach "non-traditional" students whose personal and professional lives would be enhanced by access to such programs. These objectives coincide with those of the continuing education programs that exist on most university campuses. By utilizing continuing educations resources and facilities, members of the National Space Grant Program can greatly enhance the achievement of program objectives.


## Introduction

The objectives of the National Space Grant and Fellowship Program include the expansion of space-oriented educational programs beyond the boundaries of the university campus to reach at least four groups of people: (1) middle and secondary school teachers, (2) aerospace professionals in need of skills upgrade training, (3) non-aerospace professionals who desire to transition to aerospace employment, and (4) the general young-adult and adult public.

The concept of continuing adult education is dedicated to providing on-campus and off-campus educational opportunities to "non-traditional" students who do not attend the university full time, but who are in need of the educational opportunities provided by university staff and facilities. Thus, it seems evident that the use of existing continuing education resources to provide access to space-oriented educational programs will strongly enhance the achievement of National Space Grant Program objectives. This paper reviews the conclusions of a workshop on the subject of the use of continuing adult education to meet National Space Grant Program goals. The workshop was conducted during the First National Space Grant Conference at the Johns Hopkins Applied Physics Laboratory during January 16-19, 1990.

## Objectives

The participants in the referenced workshop agreed upon the following objectives for the use of continuing education in support of National Space Grant Program goals:

(1) To provide teaching methods, materials and instruction to secondary and middle school science and mathematics teachers with the goal of providing real linkages between the subjects they are teaching and space applications.

(2) To provide appropriate courses of instruction to aerospace professionals to enable them to upgrade their skill in consonance with rapidly advancing technology and the introduction of new engineering/scientific design and analysis tools. Courses should also be provided for non-aerospace professionals who desire to transition to aerospace employment.

(3) To help the general young adult and adult public become "space literate"; that is, to help members of the general public understand current space related issues and the relationships of those issues to their everyday lives.

An examination of these objectives reveals, then, that the focus of the space-oriented continuing education should be upon secondary and middle school science and mathematics teachers, aerospace professionals in need of upgrading their skills, professionals in non-aerospace fields who desire to transition into aerospace employment, and the adult general public.

## Methods

The methods suggested by workshop participants for meeting the above objectives are generally well within the scope of traditional university-based continuing education programs. However, the suggested methods are different for each objective; thus, the programs must be tailored for the objective they are supporting.

Secondary and Middle School Teachers. Workshop participants concluded that the most effective method for assisting middle and secondary school teachers in the development of teaching methods and the acquisition of materials for classroom demonstrations was to bring them to the university campus for a workshop experience which includes instruction and "hands-on" experience. Workshops should be at least a week in length and participants should stay on-campus in order to be absorbed in the educational experience. Social functions (e.g. banquets, cookouts) should be provided to enhance the formation of acquaintances which will lead to long-term sharing of educational experiences.

At least two universities, University of Washington and Utah State University, were in the process of planning such workshops for the summer of 1990. At the writing of this paper (April 1990) the response to invitations to the "First Annual Utah State University Summer Workshop for Physics Teachers" has been overwhelming. This workshop provides instruction in the relationship of space science to high school physics instruction and gives the participants the opportunity to build classroom demonstration projects which can be taken to their individual classrooms. Physics teachers throughout the states of Utah, Idaho, Nevada and Wyoming have unanimously voiced their feeling of need for such experience. Many are coming at substantial sacrifice in summer employment opportunities. This tremendous response more than corroborates the views of the National Space Grant workshop participants regarding the need to reach out to this group.

Universities with space research programs can also reach out to secondary and middle school teachers by providing opportunities for them to fly space experiments in space (through NASA's Get Away Special Program) for example, on balloons and on NASA's zero-g k-Bird. Although such opportunities are not usually included in traditional continuing education programs, they certainly are consistent with the "reaching out" tradition of such programs.

Courses of Instruction for Professional Skill Upgrading. This objective focuses upon both the aerospace professional seeking to upgrade his technical skills and the non-aerospace professional who seeks to attain the skills necessary to transition into aerospace employment. The methods of addressing this objective are mostly oriented toward providing classroom instructional opportunities through on-campus short courses; TV based courses which are carried to off-campus classrooms, either in university extension service classrooms or into industrial plants; and correspondence courses. Some universities have also used videotaped courses for use among groups of professionals. The advantage of such courses is that they can be taken at times which are compatible with individual employee needs. Although correspondence courses may be useful for broad aerospace policy and program oriented courses, they are not suitable for courses with strong technical orientations.

General Adult Public. Methods discussed for reaching out to the general public were focused upon the young adult and adult public who are most able to understand the objectives of the National Space Program and its impact upon their lives. Much of the National Space Program is perceived by its planners to be in the public benefit; thus, it is important that the public understand its various facets, challenges and applications.

The means for reaching the adult public are very much oriented toward public relations types of events, presentations and displays. The use of a speakers bureau which serves as a focal point for arranging speakers on space topics for local service clubs; the creation of educational displays for local schools, malls, and public gathering places; volunteers for local radio and television talk shows, particularly when a much-publicized space event is taking place; on-campus tours associated with such events as homecoming and graduation; and the creation of serious monographs on key elements of the National Space Program are all examples of the kinds of outreach efforts that can help to bring "space literacy" to the American public. It is recognized that some of these types of activities fall outside the traditional bounds of most university continuing education organizations; but, again, they don't fall outside the philosophy of continuing education and, thus, they are included in the responsibility to provide opportunities for the continuous education of a public in need.

## Implementation

Time limitations did not permit the workshop participants to spend much time on implementation. Obviously, those programs, such workshops and short courses, which fit well within current continuing education approaches and capabilities will be easier to implement than those which require new approaches. Some programs already have a great demand, such as the Physics Teachers Workshop described above. Others will need to be nurtured from a small but growing need. Financial support will also differ, depending upon the specific program. Well constructed and advertised workshops and short courses which are tailored to meet a well researched need will usually be self supporting. Others will require some outside financial backing, in many cases from National Space Grant funding. Hopefully, the knotty details of implementing continuing education concepts into viable programs will be addressed at a future workshop.

## Conclusions

The role of continuing adult educational programs in supporting the achievement of National Space Grant and Fellowship objectives is quite clear. Indeed, the outreach objective is common to both continuing education and the National Space Grant Program. The objectives of stimulating and supporting teachers, enhancing skill-upgrade opportunities for professionals and creating "space literacy" within the general public must each be addressed with different methods; however, all these methods fall within the overall philosophy of continuing education. Some methods will be easier to implement than others, depending upon their relationship to existing continuing education approaches and financial support. The examination of specific implementation strategies is a ripe subject for future workshops.