

MIDWEST BIOSCIENCE



ASSOCIATION OF MIDWESTERN COLLEGE BIOLOGY TEACHERS VOL. 6 #1 MARCH, 1980

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HONORARY LIFE MEMBERSHIP

At the 23rd Annual Meeting of AMCBT, William G. Bennett was made an Honorary Life Member. The citation read nominating him is printed below.

This nominee for "Honorary Life Membership" in the Association of Midwest College Biology Teachers is a charter member of the organization. He has been an active participant in our annual meetings having served as vice-president in charge of arrangements, section leader, and section recorder. His contributions of time and effort toward the improvement of our organization is a constant reminder that the community college is an important facet of AMCBT.

For many years Iowa teachers of science have known this man as a leader within their state organization. He assisted in the organization of the Annual Science Workshop at Iowa State University. He has been a contributor to the Advisory Committee in the Iowa Academy of Science; has served in an advisory capacity in the Iowa State Teachers Association; has remained an active member of the National Association of Biology Teachers; and is currently the outdoor curriculum advisor for Eagle Grove Community Schools District.

A teacher of thirty-one years at the community college level and currently chairman of the Science Department at Iowa Central Community College, William G. Bennett is now nominated for the distinction of "Honorary Life Member" in the Association of Midwest College Biology Teachers.

PROCEDURE FOR SUBMITTING NOMINATIONS FOR HONORARY LIFE MEMBERSHIP

A nomination for Honorary Life Membership in AMCBT must reach the chairman of the Honorary Life Membership Committee by March 1. Each nomination is reviewed by the Steering Committee. The candidate chosen for Honorary Life Membership is selected by a vote of the Steering Committee.

A nomination must include the following items:

1. A cover page which should have the nominee's name, the name of his/her institution and the date the nomination is being made.
2. A statement page in which the candidate's qualifications for Honorary Life Membership are outlined. This statement should have the signature of the person making the nomination and one letter of support from outside the institution. Other AMCBT members who support the nomination may also sign the statement page.
3. A biography sheet(s) to include the following information:
 - a. Personal data pertaining to the nominee.
 - b. The nominee's contributions to AMCBT.
 - c. The nominee's educational background; preparation.
 - d. Affiliation with professional societies and other organizations.
 - e. Professional experience.
 - f. Other appropriate areas which will assist the Steering Committee to make its decision.
4. Page(s) listing publications and other professional writing.
5. Page(s) listing other professional contributions and activities.
6. The original and 15 copies must be sent to the chairman of the Honorary Life Membership Committee.
7. The recipient of the award will be announced at the annual fall meeting.

DEPARTMENTALLY CONTROLLED ADVISEE REGISTRATION AND ENTRY

*by**Charles R. Granger**University of Missouri-St. Louis
Department of Biology
St. Louis, Mo. 63121*

In many liberal arts colleges where early declaration of intended subject matter major is not required and may be postponed until the senior year, it is difficult identifying students considering biology as a major and providing them with appropriate academic advisement. This problem is even more prevalent in colleges where college-wide advisement offices tend to promote their generalized services.

Students who have declared biology as a major as well as those who have not formally registered as biology students often fail to see a departmental advisor and are, therefore, unable to receive needed course and program information, to communicate their academic needs and desires, to obtain adequate career counseling, and to avail themselves of the benefits of social and special academic interactions. Early and accurate identification of student majors results in increased use of academic departmental advisors and consequently forestalls criticism of the department advising process by default. In a time of numerical accountability when financial support depends heavily on numbers of students served, an up-to-date account of students served is also advantageous.

In an attempt to identify potential biology majors and encourage major students to regularly see a biology departmental advisor, the Controlled Advisee Registration and Entry (BIO-CARE) program has been established. The BIO-CARE program centers around a special computer card that is added to the multitude of other course and data cards that the student is compelled to haul around during the registration period. The computer card identifies the possessor as a biology major or a probable major.

The computer card is typical in size and shape but is of an easily identified color. The card can be printed in a questionnaire format to request general information such as name, address, and accumulated credits as well as solicit specific information regarding the academic program, career interests, etc. The card can accommodate eighteen typed lines per side. If computer tallying is essential the cards can be custom printed to be read by an optical scanner. Mimeograph printing is, of course, less expensive and more flexible but requires hand tabulation.

The BIO-CARE card is not distributed to the students at the time they receive the regular registration packet from the registrar. Students must obtain the required card from their designated faculty advisor (see Figure 1). By contacting their advisor, the

students place themselves in a consultating situation, give a biology faculty advisor the opportunity to review their academic program, discuss career plans, talk about departmental programs, and point out changes in course offerings. When the needed advising has been accomplished the advisor gives the students a BIO-CARE card, and if it is utilizing a questionnaire format, requests that the student supply the desired information. The student then takes the completed BIO-CARE card along with the other materials on to registration. During registration the BIO-CARE cards are easily identified and collected by administrative personnel. Students who attempt to register as biology majors or express interest in a biology major but do not have a BIO-CARE card are referred back to the biology department and their advisor. If the cards are used by other departments and punched to indicate discipline, the registrar can easily obtain an accurate computerized count of majors as they process other registration materials. The cards are then sent back to the department for tabulation.

In many schools the student must obtain the signature of an advisor before registration packets are accepted by the registrar. Students often sign each others registration cards, sign their cards themselves or get them signed by a disinterested faculty member. This procedure is illuminated when BIO-CARE cards are used because the student must see their academic advisor to obtain the card. The assigned academic advisor is the only source of these uniquely printed cards but not necessarily of a signature.

Figure 1 illustrates some of the alternative paths a student might take to register for courses. Use of the BIO-CARE procedure helps to insure at least some contact with an appropriate subject matter advisor and help to identify the undeclared biology major.

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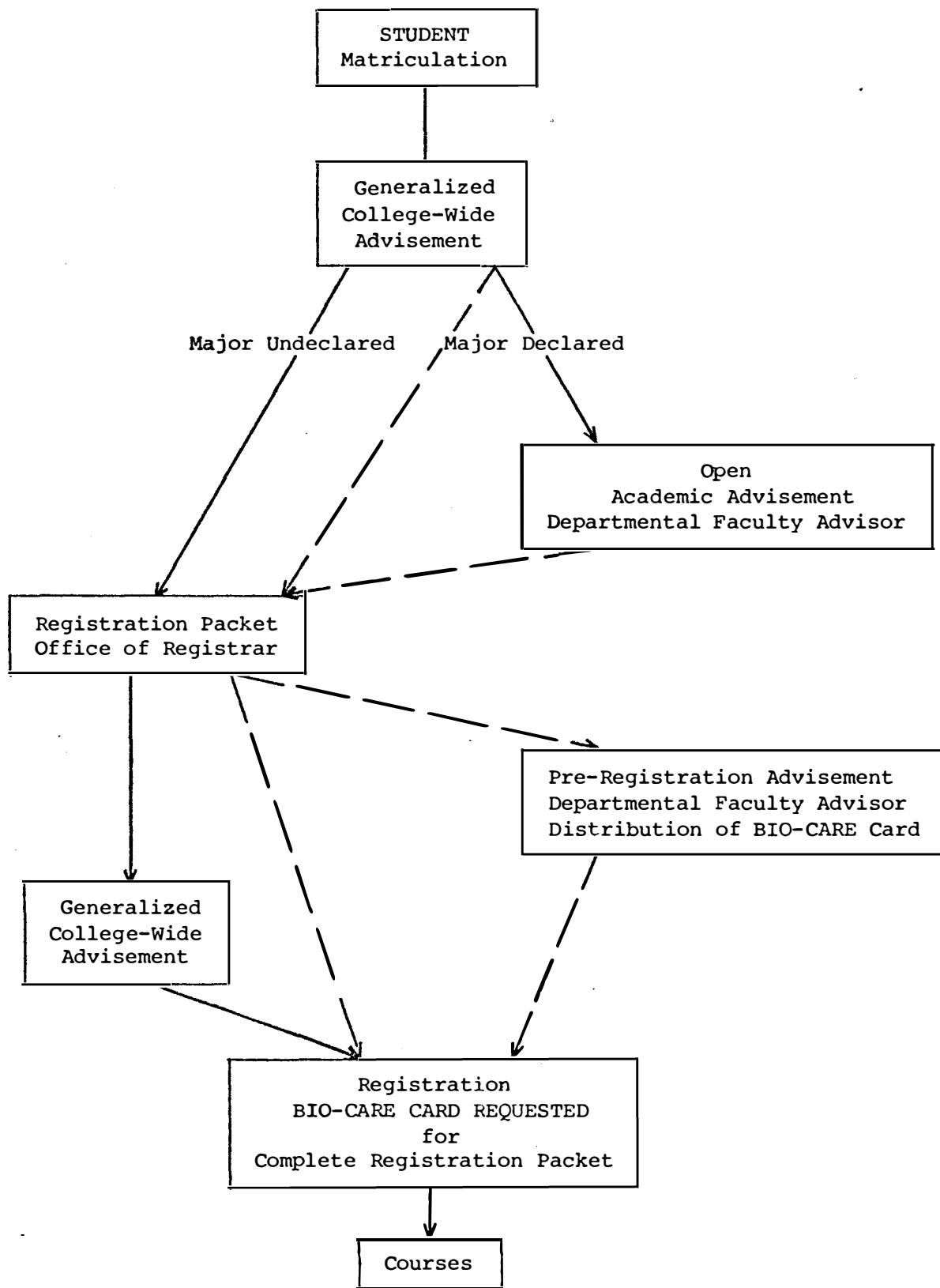


Figure 1 Scheme of Student Registration Alternatives

BOTANY TEACHING: THE PROGRESS REPORT METHOD

Harold W. Hansen
Department of Biology, St. Olaf College

A non-lecture type course was devised after investigating related systems. PSI at Georgetown University, modular work at Purdue, College IV of Grand Valley State College, Allentown, Michigan, and work at South Dakota State University, Brookings.

The course was designed with the following objectives in mind:

1. To recognize the diversity of student backgrounds.
2. To permit the student to use his time most effectively.
3. To involve the student more actively in his own education.
4. To give the student greater freedom in managing his own personal schedule.

The course was divided into twenty units, each with a guide sheet suggesting readings, films, tapes, problems, etc. The class meets formally once per week (Monday, 8:30) to maintain some continuity for the group. Laboratory hours are rather conventional, but a student might choose to use only a part of the regular lab time, returning later in the day or in the evening. Students are encouraged to use the lab as a center for study. In addition to the usual lab equipment, a Caramate sound-slide projector, a film-loop projector and a cassette player were provided. The audio equipment could be used for group listening but alternatively with a D.I.L.* board and cordless headsets** which permitted use without disturbing others. One corner of the room was provided with ceramic mugs, a hot pot and materials for coffee, Russian tea and hot chocolate.

When a student feels he has completed the work of a unit, he requests a Progress Report which is a ten question multiple choice quiz. The words "test" and "quiz" are deliberately avoided as the instrument is a teaching rather than an evaluative device. The Progress Report answers are indicated on a "Rapid Rater,"*** a device which involves a stylus with which the student perforates an answer sheet to indicate his choice. The "Rapid Rater" informs the student immediately as to whether he has answered each question correctly or not. If not, he tries again until he selects the correct answer before going on to the next question. The Rater has psychological merit, with positive reinforcement for a correct answer or an immediate indication of error (and its subsequent correction) if the answer is incorrect. Achievement of 80% permits the student to go on to the next unit; a lower score is followed by more study and an alternative form of the Progress Report. Completion is reported by placing the date on a wall chart which has suggested "target dates" for the units. No record of the grade is made; no penalty is imposed for an unsatisfactory report.

Grading is based on three conventional class tests, three lab practicals and a final examination.

Students feel they work very hard, although in hours it approximates the 13 hours per week which is expected of them. Reactions generally have been favorable to the system, although it is evident that the majority of students would not want to take more than one course at a time under this or a similar system; they like the freedom but still lack confidence in their ability to manage their own time. Students feel they have a more meaningful one-to-one contact with the instructor than under a conventional system. They appreciate the change of pace, the variety of materials and the sense of personal accomplishment which they derive.

The method takes a great deal of time of the instructor; clerical and secretarial help is essential. It has become necessary to restrict the hours at which the student may request Progress Reports as they can disrupt the instructor's time greatly. No matched control group has been involved, but students appear to do equally well under this system and the more conventional presentation.

- * D.I.L. board by Murdock, used with Audiotronics ATC 148 cassette player
- ** CH-4 cordless phones by Murdock (from Century Communications Corp., Minneapolis)
- *** Research Media, Inc., 4 Midland Avenue, Hicksville, New York 11801

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A letter from our Program Chairman...

December 28, 1979

Seasons Greetings to all you folks out there in Scienceland from your 1980 AMCBT Program Chairman. My wife and I are "high" in the Colorado Rockies celebrating our "honeymoon".

Rest assured, your Chairman is actively pursuing the most qualified of individuals to provide for your academic expansion and educational entertainment at the fall meeting. A grizzly has already consented to discuss the topic of "how to bear with poor administrators" and a local taxidermist will show us "how to mount department heads".

There will be many "deviations from the norm" at the 1980 AMCBT Annual Meeting at Millikin University in Decatur, Illinois, on October 3rd and 4th. The theme for the program is "Contemporary L.A.B. curricula", with L.A.B. being an acronym for Learning Applicable Biology.

Working in conjunction with Norm Jenson, the local arrangements chairman, a great package of events has been organized for your enjoyment. The morning tours and excursions of October 3 will include a visit to the University's Nature Center and outer edges; a visit to Staley's syrup factory. A nuclear power plant tour is planned where you will receive mutations free of charge; a pharmaceutical packaging plant will provide a tour for our participants with each receiving a small quantity of the drug of their choice. The final tour of the day will be a moonwalk followed by our usual selection of films and Biological Suppliers' demonstrations and gifts.

The major addresses for the General Session and the banquet are shaping up to be the best in the past years. Several individuals and organizations have been contacted. These include the Center for Disease Control in Atlanta, the Department of Energy, Illinois Department of Health, Alexander Gram Bellinski, the first telephone pole, Argonne National Laboratory, Department of Education, and Clark Kent who will speak on the Freudian Theory of the "super ego".

As a special guest for our 1980 meeting, we have invited Dr. John C. Montgomery, chief engineer for the Three Mile Island Nuclear Power Plant, who will discuss his latest novel, Oops.

The heart of the AMCBT Annual Meeting lies in the Group Sessions. This year, with Lab work as a theme, we have chosen many excellent presenters and topics which deal with lab exercises which have proven effective in classroom use.

These topics include:

- a. biofeedback demonstration
- b. care of lab animals
- c. audiovisual preparations for lab
- d. human genetics
- e. care of lab plants
- f. teaching lab skills
- g. lab safety
- h. ecology lab exercises
- i. human systems measurement
- j. reproduction skills
- k. others too incredible to mention

There was quite a discussion among the members of the Steering Committee concerning the topic to be considered by the "Panel of Peers". We decided it would be best for the membership to decide which topic they feel deserves the most attention.

Choose from the following list and send your choice and your reason and any suggestions you have to:

Jim Royce
Iowa Central Community College
Fort Dodge, Iowa 50501

And you will receive, in return for your trouble, Madame Curie's incomplete novel, I'm Glowing in the Dark.

Panel Topics:

- a. Continuing Education in Science
- b. Handicapped Students in Science
- c. Retention of Students
- d. The Failing Student

The topic will be the Failing Marriage if I don't get back to the honeymoon. So send me some suggestions ... about anything!

You'll hear from me again!

Jim Royce
1980 Program Chairman

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NOTES FROM THE 23RD ANNUAL MEETING . . .

'Articulation, Allied Health', Janet Schweitzer, Jefferson Community College, Friday, October 12. Recorder, W. G. Bennett

Ms. Schweitzer described her experience with the Medical Technology program at Jefferson Community College which started in 1971. Her experiences were not all that different from other members present. It would appear from the presentation and discussion that acceptance of credit transfer by four year colleges and upper programs is strictly on an individual student evaluation. There is a good bit of "Good Old Boy" evaluation exercised. The Jefferson experience has also found the older student, mostly women, to be more successful in completing the program than new high school graduates.

'Teaching Methods for the 80's', Joan Creager, Editor, American Biology Teacher, Friday, October 12. Recorder, Sr. Rosemary Connell.

This session was handled as one would carry on a complex problem-solving discussion in a college class. In this case, the problem addressed was a decision about the use of prime agricultural land for industrial development. Steps of identifying the problem, the alternative solutions, the values around the problem, ranking the values, and coming to a decision. The second topic was creating a future possibility, by imagining the ideal situation and selecting a goal to be worked on now to get to that desired goal.

'Individual Use of Video Cassettes: An Alternative to Large Lecture Instruction', Yola Forbes, Iowa State University, Saturday, October 13. Recorder, Jim Hoerter.

Under an NST CAUSE grant, video tape cassettes were developed to augment large lecture classes. Each video tape covered a specific module or concept. It was designed to teach several thousand students and make the instruction individualized. A pool of questions was developed for each module. Live lectures were also given. Students were given the option of attending the lecture and/or utilizing the video tapes. All important concepts and objectives were integrated into a study guide. A textbook was selected that fit well the course objectives. A course was developed utilizing video tapes for Human Anatomy and Physiology, Environmental Science, and General Biology. Remedial tapes were developed for those requiring more preparation and advanced level tapes for students desiring to go beyond the required material. Students opting for the self-paced program had to pass each module exam before proceeding. Self-paced testing can compensate for individual differences in background and personality. Video tapes accelerated the rate of learning in higher ability students more than in lower ability students.

'Four Year Curricular Strategy for Developing Undergraduate Library and Literature Skills', William Stephenson, Earlham College, Saturday, October 13. Recorder, Jack Snyder.

Summary of Stephenson's remarks: 1. Selected ecological biology for course because of interest. 2. Library instruction partially dictated courses taken by students. 3. Senior seminar is partially used to stress writing -- restricted to 10-12 students as well as

subject topics -- each faculty has his or her specialized seminar. 4. Objective was to develop a sequential training program to learn how to use library. 5. Illustrated a self-instruction manual on how to use library. 6. Assign two papers with choice of topics in ecological biology, which lead to papers one and two. 7. Student is required to develop search procedure. 8. After ecological biology the students take cell biology.

Summary of discussion remarks: 1. Library training is a significant part of learning and makes the learning process more interesting to both students and instructors. 2. Success of program related to objectives of students. 3. Subject matter covered by students is better than that of the instructor because the students have more time. The instructor does not critique subject matter but helps the students to improve the presentation of subject. 4. Students learn to find subject on own, so similar to graduate student seminar. 5. Improves student's ability to present paper. 6. Gives students confidence in finding materials and access gives students increased autonomy of individual ability to learn and express themselves. 7. Helps instructors to keep up with field and makes papers easier to evaluate.

Information appearing on page 12 of this publication was presented to participants, and is a 4 Year Curriculum which includes the Library and Literature Skills strategy.

'Future Directions of Health & Healing', Kathryn Smith, Saturday, October 13. Recorder, Cecile Boehmer.

The rising cost of health care was identified as an important limiting factor in health care deliverance. Lack of competition and the absence of cost ceilings were cited as major considerations in the continuing rise of health care costs. New strategies in breaking this rising cost continuum include: 1) education so that the lay person will know the options available; 2) greater involvement in personal health care, including encouragement toward greater responsibility in health maintenance; 3) the Kinnlein concept on health maintenance; 4) a shift of emphasis from the "doctor/sickness" syndrome to health maintenance with the introduction of the nurse-practitioner. Finally, there is an increasing involvement by corporations to encourage personal health among employees by providing incentives such as "business lunches" (no coffee or smoking) to replace the coffee break. Alternative incentives include payment for not taking sick leave.

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4 Year Curricular Strategy for Developing UndergraduateLibrary and Literature SkillsThe Curriculum: (9 courses required for a Biology Major)

Ecological Biology → Cell Biology → Genetics (core for biology majors)
 → Human Biology or Plants and Human Affairs (track for non-biology majors)

Upperclass Courses: (choice of 5 minimum)

Anatomy and Physiology	Quantitative Ecology
Vertebrate Zoology	Plant Physiology
Mammalogy	Animal Behavior
Ornithology	Plant Kingdom
Field Botany	Microbiology
Evolutionary Biology	Entomology
Invertebrate Zoology	Comparative Animal Physiology
Developmental Biology	Independent Study/Research

Off Campus: Marine Biology - Florida
 Carribean Biology

Senior Seminar (required) 6-12 students per seminar; choice of ca.6 topics each year

Library and Literature Strategy:

Ecological Biology	Search Strategy Reference Collection Card Catalog Biological Abstracts Science Citation Index Pamphlet File Government Documents	Kirk, <u>Library Research Guide to Biology</u> 2 papers; 3-5 pages choice of topics first paper stresses ecol. principles second paper stresses environmental issues
Cell Biology	Search Strategy Chemical Abstracts Biochemical Reference Materials and Lit. Review Journals	1 paper; on a specific organelle or cellular process written search strategy written comparison of Chem. Abstracts Bio. Abstracts annotated bibliography
Plants and Hum. Affairs	Ag.& horticultural lit.	1 paper
Human Biology	Indexus Medicus Review Journals Health literature	1 paper
Upperclass Courses	Review Journals Literature in specific fields	papers &/or lab.project reports &/or field project reports
Senior Seminar	In-depth topical focus in primary literature	oral presentations / class discussion bibliography / paper

THE FOLLOWING INFORMATION WAS SUPPLIED BY DR. HAROLD HANSEN OF ST. OLAF COLLEGE. THE SOURCE WAS A NORTH CENTRAL ASSOCIATION STUDY ON LIBERAL ARTS EDUCATION AT THE UNIVERSITY OF MINNESOTA IN SUMMER, 1952, CONDUCTED BY CLARENCE LEE FURROW. ENJOY!

HOW TO RUN AWAY FROM AN EDUCATIONAL PROBLEM

1. *Find a scapegoat and ride him. Teachers can always blame administrators, administrators can blame teachers, both can blame parents, and everyone can blame the social order.*
2. *Profess not to have THE answer. This lets you out of having ANY answer.*
3. *Say that we must not move too rapidly. This avoids the necessity of getting started.*
4. *For every proposal set up an opposite and conclude that the "middle ground" (no motion whatever) represents the wisest course of action.*
5. *Point out that an attempt to reach a conclusion is only a futile "quest for certainty". Doubt and indecision "promote growth".*
6. *When in a tight place, say something which the group cannot understand.*
7. *Look slightly embarrassed when the problem is brought up. Hint that it is in bad taste, or too elementary for mature consideration, or that any discussion of it is likely to be misinterpreted by outsiders.*
8. *Say that the problem "cannot be separated" from other problems; therefore no problem can be solved until all other problems have been solved.*
9. *Carry the problem into other fields; show that it exists everywhere, hence is of no concern.*
10. *Point out that those who see the problem do so by virtue of personality traits; e.g., they are unhappy and transfer their dissatisfaction to the area under discussion.*
11. *Ask what is meant by the question. When it is clarified, there will be no time left for the answer.*
12. *Discover that there are all sorts of "dangers" in any specific formulation of conclusions: Dangers of exceeding authority or seeming to, of asserting more than is definitely known, of misinterpretation, misuse of uninformed teachers, criticism (and of course the danger of revealing that no one has a sound conclusion to offer).*

13. *Look for some remote philosophical basis for settling the problem, then a basis for that, then a basis for that, and so on back into Noah's Ark.*
14. *Retreat from the problem into endless discussion of various techniques for approaching it.*
15. *Put off recommendations until every related problem has been definitely settled by scientific research.*
16. *Retreat into general objectives on which everyone can agree but which suggest no content and no changes in the present program.*
17. *Find a face-saving verbal formula (like "in a Pickwickian sense") which means nothing but which everyone will accept because he can read into it his own interpretation. This is the highest art of the good administrator.*
18. *Rationalize the status quo with minor improvements.*
19. *Retreat into analogies and discuss them until everyone has forgotten the original problem.*
20. *The reverse of "begging the question". Begin with a problem like, "What should be the content of our core course?"; end with the conclusion that maybe we ought to have a core course.*
21. *Explain and clarify over and over again what you have already said.*
22. *As soon as any proposal is made, say that you have been doing it in your school for ten years, even though what you have been doing only bears the faintest resemblance to the proposal.*
23. *Appoint a committee.*
24. *Wait until some expert can be consulted.*
25. *Say, "That is not on the agenda; we'll take it up later." This may be extended ad infinitum.*
26. *Notice that the time is up. If other members of the group look surprised list your engagements for the next two days.*
27. *Conclude that you have all clarified your thinking on the problem, even though no definite conclusions have been reached.*
28. *Point out that some of the greatest minds have struggled with this problem implying that it does us credit to have even thought of it.*

- 29. Say forcefully, "Do we really want this laid out cold for us?" Obviously we don't. Therefore, wet-nurse the problem.
- 30. Be thankful for the problem. It has stimulated our best thinking and has therefore contributed to our growth. It should get a medal.

Most educational discussions become sooner or later a desperate attempt to escape from the problem. This is often done clumsily, causing unnecessary embarrassment and leaving the group without the comfortable feeling of having disposed of the problem. A "cultural lag" is evident in the situation. Educational leaders have long since worked out an adequate battery of techniques for dodging the issue. This list should at least give group leaders a command of alternative modes of retreat, enabling them to withdraw their forces gracefully and to leave the problem baffled and helpless.

Certainly with all these techniques, there is no excuse for awkwardness in problem evasion.

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ATTENTION ATTENTION ATTENTION ATTENTION ATTENTION

ANNUAL MEETING

The Association for Biology Laboratory Education, A.B.L.E., will hold its annual meeting/workshop June 2-6 at the University of Illinois at Urbana campus. The purpose of this meeting is to exchange ideas on creative, innovative techniques used in the teaching laboratory. Scheduled workshops will accompany the meeting.

For more information, contact:

Don Fritsch
 Biology Department
 Virginia Commonwealth University
 Richmond, VA 23284

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POSITION WANTED

POSITION FOR A GENERALIST IN BIOLOGY WITH 26 YEARS OF EXPERIENCE AT SMALL COLLEGE AND UNIVERSITY. PH.D. IN ANIMAL PHYSIOLOGY. EXPERIENCED IN TEACHING GENERAL BIOLOGY, GENERAL ZOOLOGY, HUMAN ANATOMY, HUMAN PHYSIOLOGY, MICROBIOLOGY, VERTEBRATE PHYSIOLOGY, PHYSIOLOGY OF REPRODUCTION, UNDERGRADUATE AND GRADUATE RESEARCH AND SEMINAR. WRITE: BOX 37, EUREKA COLLEGE, EUREKA, IL 61530.

FROM THE DESK OF THE EXEC SEC . . .

It would seem that the cold of winter may now be behind us. Hopefully this comment will not trigger the snow of all times. With the coming of spring, we should be getting our second wind and will end up the academic year with a spectacular finish.

Right now there is a considerable amount of planning going into next year's AMCBT program. In the event you haven't seen the strategically placed inserts in this Bioscene, the meeting is October 3rd and 4th at Millikin University in Decatur, Illinois. More information will come to you as it becomes firmed up. If you have any desire to participate in any way, shape or form please contact this year's program chairman, James Royce, Department of Science, Iowa Central Community College, Fort Dodge, Iowa 50501. Any suggestions you would have that would improve the meetings for our members are solicited. Along similar lines, the Association needs names of people you would like to see serve as your elected officials. Send these names to the chairman of the Nominating Committee, Harold Hansen, Department of Biology, St. Olaf College, Northfield, MN 55057.

This column has stated in the past, and will continue to so state, that the success of the Association will depend on its members. Plan now to attend the 24th Annual Meeting and bring a friend. In addition, plan to actively participate, to present a paper, to lead a discussion. The Association is you, the active teacher.

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(Please detach here)

Application for Membership
ASSOCIATION OF MIDWESTERN COLLEGE BIOLOGY TEACHERS

() Regular Member - \$6.00 () Retired Member - \$3.00
Dues payable each July 1 () New () Renewal

Name _____ Date _____

Title _____ Department _____

Institution _____ Subject Area _____

City _____ State _____ Zip _____

Address preferred for mailing: Return to: AMCBT Central Office
c/o Dept. of Biology
Rockhurst College
5225 Troost Avenue
Kansas City, MO 64110

ATTENTION: Would you prefer to be identified by title and by area of subject interest in the next membership list? Respond to AMCBT Central Office.