Guidelines for MAA Short Courses

INTRODUCTION

An important activity supported by the MAA is the offering of Short Courses. Each MAA Short Course consists of a coherent sequence of presentations on a single theme of mathematical interest. A course ordinarily extends over a period of two days immediately preceding the Joint Mathematics Meetings held in January and/or the summer Mathfests. A reception for the speakers and attendees is held the first evening of the short course.

Courses are directed at nonspecialists who are seeking professional development, enrichment, and education. Many college teachers attend to glean new material for their classes. One of the most common reasons participants attend is intellectual curiosity. Each course is a survey of a specific area of mathematics that may have application in the physical, biological, social, or information sciences, or in technology or business. Although the audience will have a general mathematical background, it cannot be assumed they know the technical terminology and important results of the topic of the Short Course.

SELECTION OF A TOPIC

The MAA Committee on Professional Development is responsible for Short Courses. Preliminary plans for topics and organizers are developed by the MAA Short Course Subcommittee, which meets during The Joint Mathematics Meetings and Mathfests, and which corresponds by email. Once the committee has approved a topic and organizer, the MAA Associate Secretary will schedule the short course for the scientific program for the appropriate meeting. The Associate Secretary also handles details of publicity and on-site needs for the course.

The MAA Short Course Subcommittee welcomes suggestions for possible topics. The chair or any member of the committee should be contacted to give suggestions. Topics that include techniques of problem-solving, topics that are of current interest, or topics that could be introduced into undergraduate courses are especially welcome.

ORGANIZERS' RESPONSIBILITIES

Course organizers are responsible for choosing, coordinating, and introducing the speakers whose presentations will comprise the course program. The organizer(s) will receive an honorarium of $300 (to be split among coorganizers) and work with a total budget of $2500 to cover all travel expenses, meals, and lodging. Ordinarily, there are no honoraria for the other presenters. Financial constraints need to be kept in mind when selecting speakers, who should be encouraged to use other sources of travel support whenever possible. In general, organizers are asked to aid the MAA staff in identifying all possible ways of minimizing costs. The cost of the refreshment breaks, reception,
room rental, printing course notes, on-site staff, and audiovisual expenses are covered separately by the MAA.

The organizer typically gives the opening overview, introduces speakers, and is responsible for the concluding session of the course. The organizer selects the other presenters, keeping in touch with the MAA Associate Secretary during this process. During initial conversations with prospective presenters, the organizer should outline the purpose of the short course and the presenter's responsibilities. The organizer should also discuss the nature and extent of MAA financial support offered to the presenters. Organizers should aim for a balanced group of presenters that will provide an interesting mix of ideas and insights on the theme topic.

After initial conversations and informal agreement by presenters, the organizer contacts each presenter formally by sending a letter that outlines the responsibilities and timetable for all parties. The formal letter should contain:

- time and place of the MAA short course
- tentative schedule of presentations
- request for synopsis of presentation, reading lists
- request for any other handouts
- copy of MAA reimbursement policy
- information on audio-visual equipment and other supplies

The inclusion of this information in the letter of invitation is intended to give formal status to the arrangements and to place in writing the understanding of the commitments involved. It also enables the presenters to know how their topic fits in with those of other presenters.

In order to facilitate contacts, the organizer maintains an up-to-date contact list with information on each presenter, including address, email, telephone, and fax. This list is provided to each presenter, the Chair of the Short Course Subcommittee, and the MAA Associate Secretary.

Organizers coordinate the schedule of presentations so that the course theme is developed in a coherent fashion which avoids excessive overlap. Speakers should be encouraged to share the outline of their presentations with the organizer and with each other well before the meeting. The organizer may wish to provide connective and introductory material prior to each presentation. There should be as much uniformity of notation and terminology as possible in the presentations.

Organizers should stress the importance to the presenters that they pay close attention to the way in which they present their material. The organizer(s) should provide to presenters the pamphlet *Mathematical Papers at Joint Meetings and Mathfests*, available from the MAA, and urge them to follow the suggestions therein. In addition, the section Presenters' Responsibilities that follows in this manual should be sent to speakers.
Nine months in advance of the meeting, the organizer is responsible for supplying the Associate Secretary with a description of the short course as well as the names and affiliations of all presenters. This description is typically the only information seen by MAA members before registration. It should, therefore, excite interest in the course, as well as accurately describe goals, content, format, and prerequisites.

It is also essential that the Associate Secretary be given information on any unusual expenses that might be warranted for the Short Course at least nine months in advance, so that the Executive Committee will have the information it needs to set the fees for the Short Course.

Titles and brief descriptions of all presentations are needed eight months in advance. Organizers will request speakers to prepare handouts that include an outline of their presentation and references for further study; the organizer sends these to the appropriate person at the MAA headquarters to be reproduced one month in advance of the course. The MAA welcomes manuscripts based on lecture notes of short courses for possible publication. Organizers may discuss this possibility with the Associate Executive Director of the MAA, currently Don Albers.

Organizers have some flexibility as to the format and schedule of the lectures. Although the timetable and the number and length of the talks vary with each course, a typical MAA Short Course consists of six invited presentations, each sixty to seventy-five minutes in length. The organizer should pay particular attention to the need for breaks interspersed throughout the day. The timing of scheduled breaks (with refreshments) is sometimes determined by the need to coordinate with breaks of other events. Short Courses often conclude with a panel discussion by presenters, providing an opportunity for substantial audience participation.

A typical schedule for a Short Course is as follows:

**DAY #1**
9:00am-10:15am - Introduction and Overview
10:15am-10:45am - Break
10:45am-Noon - Presentation #2
Noon-2:00pm - Lunch
2:00pm-3:15pm - Presentation #3
3:15pm-3:45pm - Break
3:45pm-5:00pm - Presentation #4
5:00pm-6:30pm - Reception

**Day #2**
9:00am-10:15am - Presentation #5
10:15am-10:45am - Break
10:45am-Noon - Presentation #6
Noon-2:00pm - Lunch
2:00pm-3:15pm - Presentation #7
3:15pm-3:45pm - Break
3:45pm-5:00pm - Concluding session

Organizers may obtain more detailed outlines of previous short courses from the MAA Associate Secretary.

The organizer will inform the MAA Associate Secretary of the audio-visual needs of the presenters, including overhead projectors, 35 mm slide projectors, screens, VCRs, microphones, and such. If these will incur costs on the part of the MAA, such information must be given to the Associate Secretary nine months in advance of the Short Course. Audio visual equipment should be ordered through the Associate Secretary at least three months prior to the meeting. Arrangements for technical equipment, such as calculators or computers and software for use in demonstrations are to be discussed with the Associate Secretary at least three months prior to the meeting.

For MAA short courses that require a computer laboratory, arrangements must be made well in advance of the meeting (at least six months before the start of the meeting). The MAA Associate Secretary must be informed of these arrangements. For courses that have a hands-on calculator or computer component, organizers need to arrange for at least one technical assistant to be available for troubleshooting during the course.

PRESENTERS' RESPONSIBILITIES

Speakers should begin with something everyone can follow, while going into enough technical detail to enable the audience to see the whole topic in perspective. Speakers should keep in mind that the expected audience comes with diverse backgrounds, depth and breadth of knowledge. The targeted audience may be expected to have a graduate-level mathematics education, and have a common knowledge of an undergraduate mathematics major. They come with a keen interest in collegiate mathematics and a desire to develop professionally with the aim of enriching their knowledge of mathematics and improving their skills in presenting such material to students.

The following suggestions are the result of experience with evaluations of previous Short Courses. Speakers should pay careful attention to them.

Content:

- Start at an elementary level, such as typically evidenced in an expository article in the American Mathematical Monthly.
- Move quickly to the pearls of the topic.
- Illustrate main ideas with a single, simple, example or with a well-conceived set of examples given throughout the presentation.
- Use real data when possible. Such examples are often the only thing that is remembered by the audience afterwards.
- Provide a brief history leading up to the topic.
- Define all terms. Use standard notation.
• Review all key elementary results to be used.
• Avoid audience burnout: do not move too fast or give too many details. Remember, there has never yet been a talk that was too simple or too elementary.
• Coordinate your talk (through the organizer or directly) with those of other presenters to avoid excessive overlap and acknowledge overlap when it occurs.
• State some open problems or unresolved issues in the field.

Technicalities:

• Use multicolored, neatly prepared transparencies (viewgraphs) [or a computer program such as Powerpoint] with lettering that is at least 1/2 inch in height, with no more than 10 lines per view.
• Use well-prepared pictures and diagrams.
• Be consistent with material distributed prior to the presentation.
• Use gender-neutral wording as appropriate.
• Include key bibliographic references.

EVALUATION OF MAA SHORT COURSES

All short course participants are asked to complete an evaluation prepared by the Short Course Subcommittee. A member of the committee will distribute the forms to attendees during the short course and collect them at the end of the course. Attendees who do not turn them in will be requested to mail them to the chair of the committee. The information obtained from these evaluations is used by the committee to improve future offerings and to identify future topics, organizers, or presenters. The evaluation information is also made available to the organizers and to the presenters.

PREVIOUS SHORT COURSES

7/97 Atlanta: Epidemiology Modeling
Herb Hethcote, University of Iowa

1/98 Baltimore: Mathematical Imaging and Image Processing
Akram Aldroubi, Vanderbilt University
Dennis Healy, DARPA/Dartmouth College

7/98 Toronto: Calculated Deceptions
Arthur Benjamin, Harvey Mudd College
A. Brent Morris, National Security Agency

1/99 San Antonio: Mathematics in Finance
Robert Almgren, University of Chicago
8/99 Providence: *Recent Developments in the Teaching of Differential Equations*
Paul Blanchard, Boston College

1/00 Washington, D.C.: *Fuzzy Mathematics*
Kiran Bhutani, Catholic University

8/00 Los Angeles: *Introduction to Error Correcting Codes*
Vera Pless and W. Cary Huffman

1/01 New Orleans: *Knots in Science*
De Witt Sumner

8/01 Madison: *The Life and Legacy of Ramanujan*
Kenneth Ono

1/02 San Diego: *A Sampler of Applications of Graph Theory*
Fred Roberts

8/02 Burlington: *The Mathematics of Cryptology*
Carl Pomerance

1/03 Baltimore: *Mathematics in the Ancient World*
Frederick Rickey

8/03 Boulder: *Reading the Book of Life: How Bioinformatics Makes Sense Molecular Messages*
John R. Jungck

1/04 Phoenix: *The History of Mathematical Technologies: Exploring the Material Culture of Mathematics*
Amy Shell-Gellasch and Glen Van Brummelen

**TIMETABLE FOR ORGANIZERS OF SHORT COURSES**

- **15-18 months before course**
  - Selection and approval of topic and organizer by SCS

- **9 months before course**
  - Title and description/objectives of names/affiliations of speakers to MAA Associate Secretary with copy to SCS chair. Information on aspects of the course with financial implications for the MAA must be given to the Associate Secretary at this time.

- **8 months before**
  - Titles, brief descriptions, and schedule of all presentations to MAA Associate Secretary with copy to SCS chair
6 months before
Arrangements for any computer labs; work with MAA Associate Secretary

3-4 months before
Speakers share outlines and organizer facilitates coordination of presentations

2 months before
All requests for audio-visual equipment to MAA Associate Secretary

1 month before
All handouts (including outlines of presentations, bibliographies) to MAA Associate Secretary who will arrange for duplication

CANCELLATION POLICY

If, one month prior to the meetings, there are less than 20 persons preregistered for an MAA short course, then it may be cancelled. Before such a cancellation is made, organizers will be notified and alternative options will be discussed, such as offering the MAA short course but reducing the financial reimbursement support for the presenters. If the course must be cancelled, the MAA staff will notify all those registered and reimburse their registration fee.

SHORT COURSE CONTACTS

The Chair of the Short Course Subcommittee and the MAA Associate Secretary are the two primary contacts for information about Short Courses and their organization. The Associate Secretary will be able to inform organizers of any other MAA personnel who will be needed for helping with organizational, technical, or audio-visual details of the course. Current contacts are:

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