

# 3.1

## Fulkerson Prize

Revision, 1995

The Fulkerson Prize for outstanding papers in the area of discrete mathematics is sponsored jointly by the Mathematical Programming Society and the American Mathematical Society. Beginning in 1979, up to three awards of \$750 each will be presented at each (triennial) International Congress of the Mathematical Programming Society; they will be paid out of a memorial fund administered by the American Mathematical Society that was established by friends of the late Delbert Ray Fulkerson to encourage mathematical excellence in the fields of research exemplified by his work. Beginning in 1994, the amount of each award is \$1,500.

Papers to be eligible should form the final publication of the main result(s) and should have been published in a recognized journal, or in a comparable, well-refereed volume intended to publish final publications only, during the **six** calendar years preceding the year of the Congress. Extended abstracts and pre-publications, and articles published in journals, journal sections or proceedings that are intended to publish nonfinal papers, are not included. The extended period of six years is in recognition of the fact that the value of fundamental work cannot always be immediately assessed. The prizes will be given for single papers, not series of papers or books, and in the event of joint authorship the prize will be divided.

The term “discrete mathematics” is intended to include graph theory, networks, mathematical programming, applied combinatorics, and related subjects. While research work in these areas is usually not far removed from practical applications, the judging of papers will be based on their mathematical quality and significance.

The Selection Committee for the awards will have two members appointed by the Chairman of the Mathematical Programming Society and one member appointed by the President of the American Mathematical Society. The committee members will serve for at most two rounds of awards, with terms overlapping where possible for the sake of continuity. One of the initial MPS appointees will be the first chairman of the committee; subsequent chairmen should whenever possible be veterans of the previous round of awards. The Selection Committee will devise its own procedures for acquiring nominations or otherwise searching out papers of interest, taking pains, however, not to overlook the work of young,

relatively unknown mathematicians.

## 3.2 George B. Dantzig Prize

Revision, 1988

### **Guidelines**

The prize is awarded jointly by the Mathematical Programming Society (MPS) and the Society for Industrial and Applied Mathematics (SIAM). The prize is awarded for original research, which by its originality, breadth and depth, is having a major impact on the field of mathematical programming. The contribution(s) for which the award is made must be publicly available and may belong to any aspect of mathematical programming in its broadest sense. Strong preference will be given to candidates that have not reached their 50th birthday in the year of the award.

### **The Prize Committee**

There will be an ad hoc Prize Committee appointed for each award jointly by the Chairman of MPS and the President of SIAM. The committee will consist of four members, one designated “Chairman” by the Chairman of MPS, and it will represent a diversified view of mathematical programming. Committee appointments should be made at least two years before the prize award date. The MPS has the responsibility to notify its Chairman and the President of SIAM to make the appointments.

For continuity, committee members will normally serve on two successive prize committees with the committee chairman being a second-term member. Thus two new members will be appointed and two members will be reappointed every three years. Committee members will be members of MPS and/or SIAM. At least two members of the committee will be MPS members and at least two will be members of SIAM. The membership of the committee should also reflect the international character of the societies.

### **Committee procedure**

The committee is responsible for the solicitation and evaluation of nominations. A call for nominations should be placed in appropriate SIAM, MPS, and other publications. Nominations should be accompanied by a letter of recommendation. The full committee should meet at least once, early enough to permit extended discussions regarding the qualifications of the candidates.

The committee will deliver its final report with its nominee(s) at least six months prior to the prize award date. The committee will complete its duties with the awarding of the prize. If the committee reports that no prize can be awarded, then the prize money will be used to increase the endowment and the duties of the committee will be completed.

The nomination(s) for the award should be presented by the Prize Committee to the Executive Committees of the SIAM Council and of MPS, via the President of SIAM and the Chairman of MPS. The nomination(s) for the award must be accompanied by a written justification and a citation of about 100 words that can be read at the award date.

Both SIAM and MPS must accept the nomination(s). Objection by either one of the two societies will nullify the nomination(s). If the nomination(s) of the Prize Committee is rejected by MPS and/or SIAM, the Prize Committee may propose a second nomination.

#### **Prize award date**

A prize award will be considered every three years. If no prize is awarded, the award date moves ahead three years.

#### **The prize fund**

MPS has the responsibility for soliciting and providing the funds necessary for the prize award. The fund will come from a contributed endowment. These funds are to be sent directly to SIAM, to be contributed to the George B. Dantzig Prize Fund in care of SIAM. SIAM has the responsibility for managing and administering the prize fund.

#### **Description of the award**

The award is to include a certificate containing the citation and a cash prize, the amount of which is to be determined by the Executive Committee of the SIAM Board and of MPS. Normally the amount of the prize will be approximately the available proceeds from the endowment minus travel expenses from the endowment as noted below. Travel expenses for the award recipient(s) to the meeting will normally be paid by the George B. Dantzig Prize Fund, or as necessary, out of the operating funds of the Society that hosts the award. It is the option of the hosting organization to make the payment of travel expenses contingent on the delivery of a major lecture at the meeting.

#### **The award presentation**

The award will be presented at the International Symposium of MPS except every third time it will take place at a national meeting of SIAM, either the National (Spring) or Fall meeting of SIAM in the year of the award. Presentation will be made by the Chairman of MPS (or his designate) when MPS is hosting the award, or otherwise by the President of SIAM (or his designate). The recipient is expected to make a short acceptance speech.

#### **Change to these specifications**

Any changes to these specifications must have the approval of MPS and the SIAM Council and Board of Trustees.

## 3.3 Beale–Orchard-Hays Prize

for Excellence in Computational Mathematical Programming

### **Purpose**

To be eligible a paper or a book must meet the following requirements:

1. It must be on computational mathematical programming. The topics to be considered include:

(a) experimental evaluations of one or more mathematical programming algorithms,

(b) the development of quality mathematical programming software (i.e., well-documented code capable of obtaining solutions to some important class of mathematical programming problems) coupled with documentation of the application of the software to this class of problems (note: the award would be presented for the **paper** that describes this work and **not** for the software itself),

(c) the development of a new computational method that improves the state-of-the-art in computer implementations of mathematical programming algorithms coupled with documentation of the experiment that showed the improvement, or

(d) the development of new methods for empirical testing of mathematical programming techniques (e.g., development of a new design for computational experiments, identification of new performance measures, methods for reducing the cost of empirical testing).

2. It must have appeared in the open literature.

3. Documentation must be written in a language acceptable to the Screening Committee.

4. It must have been published during the three calendar years preceding the year in which the prize is awarded.

These requirements are intended as guidelines to the Screening Committee but are not to be viewed as binding when work of exceptional merit comes close to satisfying them.

### **Frequency and amount of the award**

The prize will be awarded every three years. The award will be presented at the awards session of the International Symposium on Mathematical Programming sponsored by the Mathematical Programming Society. The prize consists of \$1,500 and a plaque.

### **Judgement criteria**

Nominations will be judged on the following criteria:

1. Magnitude of the contribution to the advancement of computational and experimental mathematical programming.
2. Originality of ideas and methods.
3. Degree to which unification or simplification of existing methodologies is achieved.
4. Clarity and excellence of exposition.

#### **The Awards Committee**

The screening process will be carried out by a committee of four to eight people appointed by the Chairman of MPS. The appointment of the committee must be made at least one year prior to the awarding of the prize.

Each committee member will read all nominations and provide to the Chairman of the committee his or her assessment based on the four criteria noted above. The Screening Committee reserves the right to determine that there will be no prize given for that meeting.

#### **Nominations**

Nominations must be in writing and include the title(s) of the paper(s) or book, the author(s), the place and date of publication, and four copies of the material. Supporting justification and any supplementary materials are welcome but not mandatory. All nominations must be received at least six months prior to the awards date. The Screening Committee reserves the right to request further supporting materials from the nominees.

## 3.4 A.W. Tucker Prize

The A.W. Tucker Prize will be presented at each International Symposium of the Society for an outstanding paper authored by a student. All students, graduate or undergraduate, are eligible. Nominations of students who have not yet received the first university degree are especially welcome. In advance of the symposium an Awards Committee will screen the nominations and select at most three finalists. The finalists will be invited, but not required, to give oral presentations at a special session of the symposium. The Awards Committee will select the winner and present the award prior to the conclusion of the symposium.

### **Eligibility**

The paper may concern any aspect of mathematical programming; it may be original research, an exposition or survey, a report on computer routines and computing experiments, or a presentation of a new and ingenious application. The paper must be solely authored, and completed since the beginning of the calendar year in which the preceding symposium was held. The paper and the work on which it is based should have been undertaken and completed in conjunction with a degree program.

### **Nominations**

Nominations must be made in writing to the Chairman of the Awards Committee by a faculty member at the institution where the nominee was studying for a degree when the paper was completed. Letters of nomination must be accompanied by four copies each of: the student's paper; a separate summary of the paper's contributions, written by the nominee, and no more than two pages in length; and a brief biographical sketch of the nominee. The Awards Committee may request additional information. Nominations and the accompanying documentation are due six months prior to the beginning of the symposium, and must be written in a language acceptable to the Awards Committee.

### **Selection**

The Awards Committee will select the finalists at least three months prior to the beginning of the symposium. It will notify the Chairman of the Society and the Chairman of the Executive Committee at that time. The winner will be selected by the Awards Committee at the symposium, subsequent to the oral presentations by the finalists. Selection will be based on the significance of the contribution, the skillfulness of the development, and the quality of the exposition.

**Endowment**

The Society will solicit contributions to an endowment for the prize.

**Disbursements from the endowment income**

The winner will receive an award of \$750 (U.S.) and a certificate. The other finalists will also receive certificates. The Society will also pay partial travel expenses for each finalist to attend the symposium. These reimbursements will be limited in accordance with the amount of endowment income available. A limit in the range from \$500 to \$750 (U.S.) is likely. The institutions from which the nominations originate will be encouraged to assist any nominee selected as a finalist with additional travel expense reimbursement.

**Awards Committee**

The Awards Committee will have five members, including a chairman, all appointed by the Chairman of the Society. The members will serve staggered terms covering two successive symposia, with two or three members retiring after each symposium.