

# 2014 MEDALS & AWARDS

## E.B. BURWELL, JR. AWARD

Presented to

**A. Keith Turner and Robert L. Schuster**

### *Citation by James P. McCalpin*

The E.B. Burwell award is made to author/editors of “*a published paper of distinction that advances knowledge concerning principles or practice of engineering geology...*” **Rockfall** (2012, Transportation Research Board, 658 p.) was selected for the 2014 Burwell Award because of its comprehensive nature and high technical level in analyzing a geohazard often encountered in engineering geology.

The book’s editors, Keith A. Turner and Robert L. Schuster, between them have more than 100 years of experience in slope stability studies. Their previous TRB monograph “*Landslides: Investigation and Mitigation*” (1996, 673 p.) won the 1997 Burwell Award. In early 2013 when I first saw notice of Rockfall’s publication, I was skeptical that its 658 pages could all be related to rockfall, since that narrow subject took up only a small portion of their previous monograph on landslides. But after looking at the Table of Contents online, I ordered the book. Once I started reading it, I soon realized that it was not only exclusively about rockfall, but that the field had greatly advanced since I had done my last rockfall project. With continued reading I began to understand (and you will too) how out of date one’s rockfall knowledge can become in only 10 years.

The book is divided into 4 parts: (1) Recognition of rockfall hazard, 20%; (2) Rockfall analysis and investigation, 45%; (3)



Keith Turner  
Colorado School Mines



Robert L. Schuster  
Retired

Rockfall mitigation, 20%, and (4) Rockfall maintenance and management programs, 5%. This mix of science, engineering, and hazard management makes the book a comprehensive reference book, which was also a hallmark of their previous monograph.

Applied sciences like engineering geology advance not continuously, but in small to large leaps spurred by bombshell publications such as this one. Such books can only be written by researchers who have spent decades in the forefront of their field, as Drs. Turner and Schuster have. And so today we honor their latest “monster” monograph with the 2014 Burwell Award.

### *Response by Alan Keith Turner and Robert L. Schuster*

Receiving the 2014 Burwell Award is really a special honor and greatly appreciated by both of us. It is somehow fitting that this Burwell is awarded in Vancouver for a book devoted to rockfall.

Turner was faced for the first time with rockfall-hazard-mitigation issues on the Trans-Canada Highway at Hells Gate in the Fraser Canyon in 1965. At that time he held the position of Engineering Geologist for the Department of Public Works in Ottawa. The Trans-Canada Highway involved federal funding, so an enquiry by provincial authorities led to his first visit to the west coast – a several-day field trip to see the recent Hope Landslide and the slope instabilities along the Fraser and Thompson Canyons. Hells Gate had already been extensively rock bolted, so only continued monitoring of an obviously dangerous slope was recommended.

The story does not end there, however. In the summer of 1969, Turner and his wife traveled on the Trans-Canada from Vancouver to Toronto while on vacation. As they rounded the corner approaching Hells Gate they faced a large rock in free-fall! It missed the car, landing on the shoulder, and there was no collision with other traffic. His wife’s strong opinions about limitations of the existing efforts on rockfall mitigation led Turner to participate in the deliberations on rockfall that began at about this time at the Transportation Research Board (TRB) Annual Meetings.

TRB is a division of the National Research Council. Our rockfall book is the fourth of a series of Highway Research Board/Transportation Research Board texts on slope failure. Schuster has been co-editor on three of these, and Turner and Schuster have been co-editors on the last two. The 1996 TRB landslide book that we co-edited

was a great success, and was the reason we received the 1997 Burwell Award. So this second Burwell Award is really an unexpected honor.

We are long-time members of GSA: Schuster since 1959; Turner since 1964. We are also long-time friends and professional collaborators. We first met at an annual TRB meeting in Washington, D.C., in about 1970. In the early 1970s Turner joined the faculty of the Colorado School of Mines (CSM) and Schuster joined the Engineering Geology Branch of the U.S. Geological Survey in Denver. For 40 years we and our families have lived within a mile of each other in Golden, Colorado. During those years, we have spent a considerable amount of time working together either in Turner’s CSM office or over the kitchen table at the Schuster home. The high points of our professional collaboration have been our two TRB landslide volumes.

We are deeply appreciative of all who assisted with the writing and production of the rockfall book. Over the years, we had the unfailing support of our families, including our wives who were very happy to see the book completed, and numerous colleagues at the Colorado School of Mines, the U.S. Geological Survey, and the Transportation Research Board.