

# H · V · I · S

## H Y P E R V E L O C I T Y I M P A C T S O C I E T Y

### From the President



*Welcome to our Summer/Fall 2013 newsletter! As the new HVIS-President, I would like to greet both old and new members, inform you about some organizational news, and extend my sincere thanks to several society members*

*who have made significant contributions to our organization.*

*Here is what you will find in this newsletter:*

- ★ *What are the Committees of the Society, and what are their responsibilities*
- ★ *Who are the BoD members and officers*
- ★ *Who are the Committee Chairs*
- ★ *Some interesting information about HVIS 2012*
- ★ *Some information about the next Symposium, HVIS 2015*
- ★ *A list of the Alex Charters Student Scholars (ACSS) from HVIS 2012*
- ★ *Information about the next ACSS competition*

*The conclusion of another Symposium also saw the departure of several board members whose terms have concluded. I would like to thank **Tim Holmquist**, **Stefan Hiermaier** and **Michel Lambert** for the dedication, leadership and guidance they provided throughout their term. They will be missed.*

*Lastly, I am very grateful to all HVIS Members who were able to attend HVIS 2012, and I look forward to seeing you all in April 2015 for HVIS 2015 in Boulder Colo.*

*Sincerely yours,  
Dave Lambert*

## Symposium 2012

The Symposium in Baltimore was a tremendous success. There were 169 attendees from nine countries; 54 oral talks and 38 posters were presented. The *International Journal of Impact Engineering* issue that was published in conjunction with our symposium had nine papers, and there were 82 papers in the proceedings.

Due to Elsevier not wanting to publish the whole proceedings in IJIE (as had happened at the previous symposiums from the San Antonio 1986 symposium through the Williamsburg 2007 symposium), this year a new approach was used: the PDF proceedings were

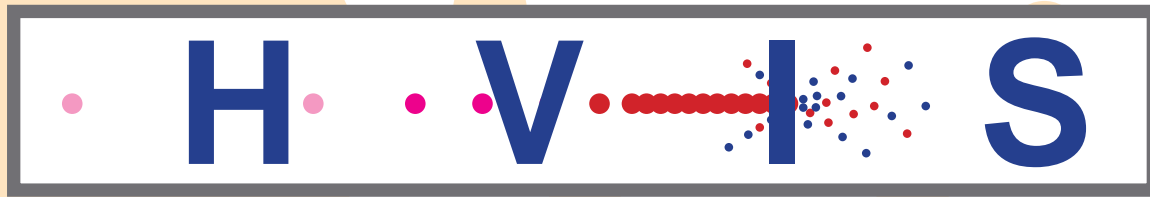
distributed by two methods. First, all attendees received the manuscripts from the oral and poster presentations on refurbished iPads, showing considerable out-of-the-box thinking by **K.T. Ramesh** and the other conference organizers. Second, the proceedings were published in volume 58 of *Procedia Engineering*, an unrestricted Elsevier website that permits the world-wide scientific community to read and download conference proceedings at no cost. The HVIS 2012 conference proceedings are now available at the following Elsevier website: <http://www.sciencedirect.com/science/journal/18777058/58>, or by visiting Elsevier's *Procedia Engineering* web site at <http://www.journals.elsevier.com/procedia-engineering/> and clicking on the special edition for the 12th Hypervelocity Impact Symposium.

The conference co-chairs were **Todd Bjerke** and **David Lambert**. The Technical Co-Chairs of the Conference were **Lalit Chhabildas** and **Brett Sorensen**. K. T. Ramesh was the conference treasurer.



*(continued on page 5)*

# Committee Charges



## and Reports

### AWARDS COMMITTEE

The Awards Committee administers awards on behalf of the Society in recognition of distinguished service and activity in the field of hypervelocity impact. A Best Paper Award and the Distinguished Scientist Award are presented at every Hypervelocity Impact Symposium.

The Distinguished Scientist Award is given to a single individual or to a research team of two or more individuals for significant and lasting contributions to the field of hypervelocity science. The award consists of a plaque citing the accomplishments of the award winner and a monetary remuneration set by the Board of Directors.

Formal letters of nomination are now invited from the HVIS Membership and anyone who has been involved in hypervelocity impact science and engineering. In preparing the letter of nomination, which should include supporting information about the candidate, nominators should include supporting information about the candidate, address the candidate's technical recognition within the community, the importance of their work and its contribution to hypervelocity science and their personal contribution and service to the Society.

Previous recipients of this award are:

1989: Alexander C. Charters  
1992: Alois J. Stilp and Volker Hohler  
1994: James R. Asay  
1996: Burton G. Cour-Palais  
1998: Hallock F. Swift  
2000: Charles E. Anderson, Jr.  
2003: Dennis L. Orphal  
2005: Lalit C. Chhabildas  
2007: Gordon R. Johnson  
2010: Peter H. Schultz  
2012: Andrew J. Piekutowski

Written nominations can be emailed to the Chair of the Awards Committee. The committee would like to see the widest participation from the Membership in nominating the Distinguished Scientist that recognizes the talents of researchers across the world.

The Best Paper Award recognizes the best paper presented at a Hypervelocity Impact Symposium and is given at the start of the meeting. The selection criteria are:

Originality of Research  
Difficulty of Research  
Importance of Research  
Excellence of the Written Paper

The selection of the best paper award will be made following the HVIS 2015 manuscript review meeting. If you have any queries about this award, please do not hesitate to contact the Awards Committee Chair.

### EDUCATIONAL OUTREACH COMMITTEE

The Educational Outreach Committee administers the HVIS Alex Charters Student Scholar Program, whose purpose is to provide travel reimbursement support for students to attend the Hypervelocity Impact Symposia. Reimbursement is provided for transportation and lodging during attendance at Symposia up to a limit specified by the Board of Directors. Alex Charters Student Scholars are provided complimentary registration and a copy of the proceedings, and are scheduled for a short introductory meeting with the HVIS Board of Directors and the Educational Outreach Committee members at the Symposium. This program is aimed primarily at graduate students who are enrolled in an academic institution at the time of the conference, although currently enrolled undergraduate students may also apply. The nomination consists of a letter of recommendation, on University letterhead, from the student's academic advisor.

## MEMBERSHIP COMMITTEE

The primary responsibility of the Membership Committee is promoting membership in the Society. The Committee also has responsibility for ensuring that membership dues are collected each year and for keeping the Secretary-Treasurer informed of the current membership of the Society.

## NOMINATIONS COMMITTEE

The Nominations Committee is responsible for nominating candidates for election to the Board of Directors of the Society. Diversity on the Board of Directors is encouraged with respect to such criteria as country of origin, organization or employment, gender, race or ethnicity, and area of specialization in the general area of hypervelocity impact (i.e., space shielding, high pressure equation of state measurements, launcher technology, etc.).

## PUBLICATIONS COMMITTEE

The Publications Committee assists in the preparation and dissemination of materials for the benefit of the Society. The Publications Committee Chair serves as editor and publisher the HVIS Newsletter and is responsible for compiling the proceedings of the Symposia.

## SITE SELECTION COMMITTEE

The Site Selection Committee is charged with developing prospective hosts for future Symposia. If you or your organization is interested in hosting a Symposium, please contact Dr. Gene Hertel by email at [esherte@sandia.gov](mailto:esherte@sandia.gov).

## Acknowledgement

The HVIS 2012 conference would not have been possible without the help and support of our previous committee chairs and members. On behalf of the HVIS 2010-2012 Board of Directors, **THANK YOU!**

### Awards

#### Chairman:

Gordon Johnson

#### Members:

Charles Anderson  
Lalit Chhabildas  
Ian Cullis  
Stefan Hiermaier  
Masahide Katayama  
Dennis Orphal  
Peter Schultz

### Educational Outreach

#### Chairman:

Shannon Ryan

#### Members:

Sikhanda Satapathy  
Eric Fahrenthold  
K.T. Ramesh  
Yashiro Akahoshi  
Stefan Hiermaier  
Eric Christiansen  
Tore Borvik  
Kei Wuennemann

### Membership

#### Chairman:

Michael V. Hopson

### Nominations

#### Chairman:

Mike Normandia

#### Members:

Scott Alexander  
Brooke Corbett  
Klaus Thoma  
Liu Sen

### Publications

#### Chairman:

William Schonberg

### Site Selection

#### Chairman:

Gene Hertel

## HVIS Board of Directors Members and Officers

### President

David Lambert

### Past President

James Walker

### Secretary-Treasurer

Todd Bjerke

### Members

Charles Anderson  
Lalit Chhabildas  
David Dickinson  
David Littlefield  
Frank Schaefer  
William Schonberg  
Brett Sorensen

## HVIS Committee Chairs

If you would like to participate on any of these committees, please contact the appropriate chair as listed.

### Awards Committee

#### Shannon Ryan

Email: [shannon.ryan@dsto.defence.gov.au](mailto:shannon.ryan@dsto.defence.gov.au)

### Educational Outreach Committee

#### Ronald Brown

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### Membership Committee

#### Brooke Myers

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### Nominations Committee

#### Sikhanda Satapathy

Email: [sikhanda.s.satapathy.civ@mail.mil](mailto:sikhanda.s.satapathy.civ@mail.mil)

### Publications Committee

#### John Borg

Email: [john.borg@mu.edu](mailto:john.borg@mu.edu)

### Site Selection Committee

#### Gene Hertel

Email: [esherte@sandia.gov](mailto:esherte@sandia.gov)





**HVIS 2012**

# Alex Charters Student Scholars

The following is a list of students who were selected as Alex Charters Student Scholars for the 2012 Hypervelocity Impact Symposium.

Please remember that these students and others like them are the future of our profession and our Society. The Board of Directors and the Program Selection Committee work very hard to send as many deserving students as possible to our Symposia. If you or your organization wish to get involved by sponsoring qualified students or if you know about funding opportunities that can be leveraged to secure additional support for deserving students, please contact the Committee Chair ... the Society can always use additional financial support for this program!

## *Listing of Alex Charters Student Scholars (above from left to right)*

Phillip Ashbrook .....	University of Dayton
Kenneth Walls .....	University of Alabama at Birmingham
Gerald Pezmeki .....	University of Alabama at Birmingham
Andrew Tonge .....	John Hopkins
James Hogan .....	University of New Brunswick
Jonathan Mihaly .....	CalTech
Suman Khatiwada .....	Rice University
Gabriel Seisson .....	Universite de Poitiers
Dominic Heunoske .....	Fraunhofer Ernst Mach Institute
Andrew Van Vooren .....	Marquette University
Shingo Masuyama .....	Kyushu Institute of Technology
Pauline Faure .....	Kyushu Institute of Technology
Nathaniel Sanchez .....	Washington State University

Symposium 2012 continued...

# DSA Award



Andrew Piekutowski, pictured right, receives his award plaque from Gordon Johnson, Awards Committee Chairman.

A Distinguished Scientist Award (DSA) was given at the Symposium in Baltimore. This award is presented every two or three years, and it is the eleventh DSA presented by HVIS since 1989. This Symposium's awardee was **Andrew J. Piekutowski**.

The plaque was given on the opening morning of the conference, and this was followed by an hour long plenary address by Andy where he reviewed some of his work from early in his career and how it had influenced the problems he had worked on.

Andrew Piekutowski spent his entire career at the University of Dayton Research Institute (UDRI), Dayton, Ohio, where he retired in 2001 as a Distinguished Research Engineer after 38 years of service. He is well known for his extensive work at the UDRI Impact Physics Laboratory, where he performed numerous complex hypervelocity impact experiments involving debris cloud formation, penetration mechanics, and response of spacecraft shield systems to the impact of orbital debris.

This work included innovative development of instrumentation and analysis techniques for determining the motion of surfaces and objects subjected to impulsive loads. He has published over 90 articles and reports, including a best paper award at the 1989 Hypervelocity Impact Symposium and a plenary paper at the 1996 Hypervelocity Impact Symposium. In 1996, he was awarded the Wohlleben-Hochwalt Professional Research Award for his work in hypervelocity impact, UDRI's highest award for excellent in professional research. He has been an active member of HVIS, participating in all of the Hypervelocity Impact Symposia since 1986, and also serving as President and Secretary-Treasurer of the society.

## 28TH INTERNATIONAL SYMPOSIUM ON BALLISTICS

# Save the Date! sept. 22-26, 2014

The International Symposium on Ballistics will return to the United States in 2014. Join us in Atlanta, Ga., in Sept. 2014! This symposium is jointly organized and supported by the International Ballistics Society in conjunction with the National Defense Industrial Association (NDIA). The symposium is an opportunity for ballistics

scientists, engineers, and others to report, share and discuss current research and advances in ballistics and visions of the future. The Call for Papers will be released in the coming weeks and abstracts will be due on **Nov. 13, 2013**. Please visit the website below for more information on abstract submission, registration and accommodations.

Hyatt Regency Atlanta • Atlanta, Georgia • [www.ballistics.org](http://www.ballistics.org)



Symposium 2012 continued...

## Best Paper Awards

The Best Paper Award was awarded at the opening ceremony. During this Symposium there was a tie. The awardees were **W. Casey Uhlig** and **Charles R. Hummer** (both of U.S. Army Research Laboratory, Aberdeen, Md.) for "In-Flight Conductivity and Temperature Measurements of Hypervelocity Projectiles" and **James D. Walker, Sidney Chocron, Daniel D. Durda, Donald J. Grosch** (of Southwest Research Institute, San Antonio, Texas and Boulder, Colo.), **Naor Movshovitz** (University of California Santa Cruz), **Derek C. Richardson** (University of Maryland, College Park) and **Erik Asphaug** (UC Santa Cruz) for their paper "Scale Size Effect in Momentum Enhancement."

Casey Uhlig pointed out in his talk that the first authors of both winning papers were University of Utah alumni.



Gordon Johnson awards Best Paper Award plaques to Casey Uhlig, pictured at top right and James Walker, pictured at bottom right.



## Aquarium and World Trade Center

This symposium had excellent invited plenary talks each morning. Also, there was an excellent social program. The registration reception was held at the Hyatt. Monday night was the Symposium's formal reception at the National Aquarium just a few buildings away on Baltimore Inner Harbor. We went to the various floors to look at the sea life while eating dinner. The Symposium banquet was Wednesday night on the 21st floor of the Baltimore World Trade Center, the world's tallest pentagonal-cross-section building overlooking the harbor.

National Aquarium



The Symposium Banquet

Registration Reception at the Hyatt



Aquarium Reception





# 2015

## Boulder, Colorado

### H Y P E R V E L O C I T Y   I M P A C T   S Y M P O S I U M

## The excitement is building!

Planning for the 2015 Hypervelocity Impact Symposium (HVIS) is still underway.

This Symposium is the principal forum for discussion, interchange and presentation of physics of high and hypervelocity impact and related technical areas. It has a long-standing international reputation as a catalyst for stimulating research through paper presentations, poster sessions and commercial exhibits. Symposium proceedings are the major archival source of papers published in this field.

The Hypervelocity Impact Symposium is a biennial event that is dedicated to enabling and promoting an understanding of the basic physics of high velocity impact and related technical areas. This international event provides a forum for researchers to share and exchange a wealth of knowledge through oral and poster presentations, and commercial exhibits. All papers presented at the symposium will be published in the conference proceedings, with a subset of the articles — as recommended by the Technical Committee following peer review — will be published in a special issue of the *International Journal of Impact Engineering*.

If you plan to participate in HVIS 2015, please complete the online questionnaire at: <http://hvis2015.mst.edu/>.

Also, be sure to “like” our Facebook page and stay connected as the details and speakers become available for this conference!



[www.facebook.com/HVIS2015](http://www.facebook.com/HVIS2015)

#### SYMPOSIUM CO-CHAIRS

**William Schonberg** (Missouri S&T)  
Email: [wschon@mst.edu](mailto:wschon@mst.edu)

**Timothy Maclay** (Celestial Insight)  
Email: [maclay@celestialinsight.com](mailto:maclay@celestialinsight.com)

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#### TECHNICAL PROGRAM CHAIRS

**Joel Williamsen** (IDA)  
Email: [jwilliam@ida.org](mailto:jwilliam@ida.org)

**Steve Evans** (NASA)  
Email: [steven.w.evans@nasa.gov](mailto:steven.w.evans@nasa.gov)

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