



# THE 58th MMM CONFERENCE

Denver, Colorado • 4–8 November 2013

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## FIRST CALL FOR PAPERS

**Submissions Open: June 12, 2013**  
**Abstract Deadline: June 26, 2013**

**SPECIAL NOTICE:** If you plan to submit an abstract and/or attend the 58th MMM Conference, please make an appointment **NOW** to apply for your visa to visit the U.S. This application process can take 3–6 months, so we urge you to submit your application as soon as you read this. Send your request for a letter of invitation to: [Diane@MMMConference.com](mailto:Diane@MMMConference.com).

The 58th Magnetism and Magnetic Materials Conference will be held at the Sheraton Denver Downtown, Colorado from 4–8 November 2013. Members of the international scientific and engineering communities interested in recent developments in magnetism and associated technologies are invited to attend the Conference and contribute to its technical sessions.

**SCOPE OF THE CONFERENCE:** This Conference will include basic and applied science and technology related to the field of magnetism. The technical subject categories for the Conference are as follows:

### I. Fundamental Properties and Cooperative Phenomena

- a. Electronic Structure
- b. Critical Phenomena
- c. Spin Glasses and Frustration
- d. Correlated Systems
- e. Superconductivity
- f. Low-Dimensional Systems and Molecular Magnets

### II. Magnetoelectronic Materials and Effects

- a. Multiferroic Materials
- b. Magnetoelectrics
- c. Voltage-Controlled Magnetic Anisotropy and Switching
- d. Complex Oxides (Bulk)
- e. Complex Oxides (Films and Heterostructures)
- f. Other Half-Metallics
- g. (Anisotropic) Magnetoresistance, Magnetoimpedance, and Hall Effect
- h. Magnetic Semiconductors



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### III. Spintronics: Fundamentals and Devices

- a. Giant Magnetoresistance
- b. Tunnel Magnetoresistance
- c. MRAM and Hybrid CMOS/Magnetic Logic Devices
- d. Spin Transfer
- e. Domains and Domain Wall Devices
- f. Spin Injection (Metals)
- g. Spin Injection (Semiconductors)
- h. Spin Current and Spin Hall Effects

### IV. Magnetization Dynamics and Micromagnetics

- a. Magnetization Dynamics and Damping
- b. Magnonics
- c. Domain Wall and Vortex Dynamics
- d. Ultrafast Switching
- e. Numerical Methods
- f. Micromagnetic Modeling
- g. Hysteresis Modeling

### V. Soft Magnetic Materials and Applications

- a. Ferrites, Garnets and Other Microwave Materials
- b. Crystalline Alloys
- c. Amorphous/Nanocrystalline Materials

### VI. Hard Magnetic Materials and Applications

- a. Rare-Earth Transition Metal Borides
- b. Intermetallic and Other Hard Magnetic Materials
- c. Nanostructured Hard Magnetic Materials
- d. Hard Magnet Processing and Applications

### VII. Structured Materials

- a. Ultra-Thin Films and Surface Effects
- b. Multi-Layer Films and Superlattices
- c. Patterned Films
- d. Nanoparticle Arrays
- e. Nanoparticles (not in arrays) and Self-Assembly
- f. Exchange Bias

### VIII. Special Magnetic Materials

- a. Magneto-Optic Materials
- b. Magneto-Elastic Materials
- c. Magneto-Caloric Materials
- d. Microwave Materials
- e. New Magnetic Materials

### IX. Magnetic Recording

- a. Continuous Granular Media
- b. Discrete Track and Patterned Media Recording

- c. Energy Assisted Recording
- d. Read Heads and Write Heads
- e. Recording Modeling, Physics, Systems and Theory
- f. Head-Media Interface and Tribology
- g. Magneto-Optic Recording and Alternative Magnetic Storage

### X. Sensors (not magnetic recording), High Frequency and Power Devices

- a. Magnetic Sensors (not magnetic recording)
- b. Microwave and Millimeter Wave Devices
- c. Magnetoimpedance and High Frequency Properties
- d. Transformers and Inductors
- e. MEMS
- f. Power and Control Magnetics
- g. Shielding, Levitation, and Propulsion

### XI. Magnetic Microscopy, Imaging, and Interdisciplinary Topics

- a. Magnetic Microscopy and Imaging
- b. Bio/Chemical Magnetism
- c. Biomedical Applications
- d. Magnetic Fluids and Separations
- e. Instrumentation and Measurement Techniques
- f. New Applications

**ABSTRACTS:** To maximize your chances of acceptance, please follow the guidelines and keep in mind the following abstract acceptance criteria used by the Program Committee:

- The research must be about magnetism, magnetic materials, or magnetism-related technology.
- The work must be original and significant. Abstracts that describe incremental advances over previously presented work will be rejected.
- The work must be substantially complete. Abstracts that do not specifically refer to new results or are largely conceptual will be rejected. Sufficient context and detail must be included to allow the program committee to make an assessment of the work.
- In the interest of allowing as many groups as possible to present their work, groups or individuals considering the submission of several related abstracts should, whenever possible, combine them into a single submission.
- The abstract must be in clear English. If necessary, have a native English speaker edit your abstract before submission.



## ABSTRACT SUBMISSION REQUIREMENTS:

- Submit all abstracts electronically, using the link found at the MMM Home Page (<http://www.magnetism.org>). The link will be available starting June 12, 2013.

- **Abstracts must be submitted prior to the June 26, 2013 deadline. This deadline will be strictly enforced.**

- The presenting author must be a paid registrant at the Conference. The Conference does not provide financial support nor registration fee waivers for any presentations.

- All abstracts must be submitted via the MMM website only. **Abstracts sent via e-mail, fax, or regular mail will not be processed or acknowledged.**

- Abstracts should be 300 words or less, and are limited by the submission system. Two figures/tables are permitted. However, note that this significantly reduces the text permitted. Make your determination about whether you prefer text or figures and work within the limit. Titles, authors, addresses, and references will not count in the 300 word limit.

- Read and follow submission procedures, which will be available at each step of the process. If you have questions about this procedure, please contact the AIP Coordinator at [magnet@aip.org](mailto:magnet@aip.org) or use the help icon on the web page.

- Follow instructions on the allowed file formats for the abstract submission. Only file formats described in the instructions will be accepted.

- Submit your abstract only once.

- Acronyms of institution names are acceptable. Be sure to type your first and last names in the proper boxes. Provide a clear and correct e-mail address for the corresponding author and provide all other information requested on the electronic form. This e-mail address will be used **to notify you** of acceptance and the location of informational materials.

- The web submission system will automatically produce your abstract in the proper format for publication in the Abstract Book. You may copy and paste your abstract, without formatting or TeX characters, into the space provided at the website.

Use upper and lower case characters. **Do not use all upper case.** Figures need to be uploaded. The version you view and edit on the screen is a facsimile.

- Draft mode will be available until the deadline date. This permits authors to continue editing at a later date/time. If you change your mind about the abstract, you may withdraw it and submit a new one. **If you change your abstract you will need to make sure you complete the process to resubmit it, since abstracts returned to draft mode are not automatically submitted.** All information about this process will be available online.

- Acknowledgment of your submission will be sent via e-mail. **If you do not receive this e-mail confirmation, your abstract is not submitted.** If you are sure you have submitted, check the e-mail address that you typed with your information.

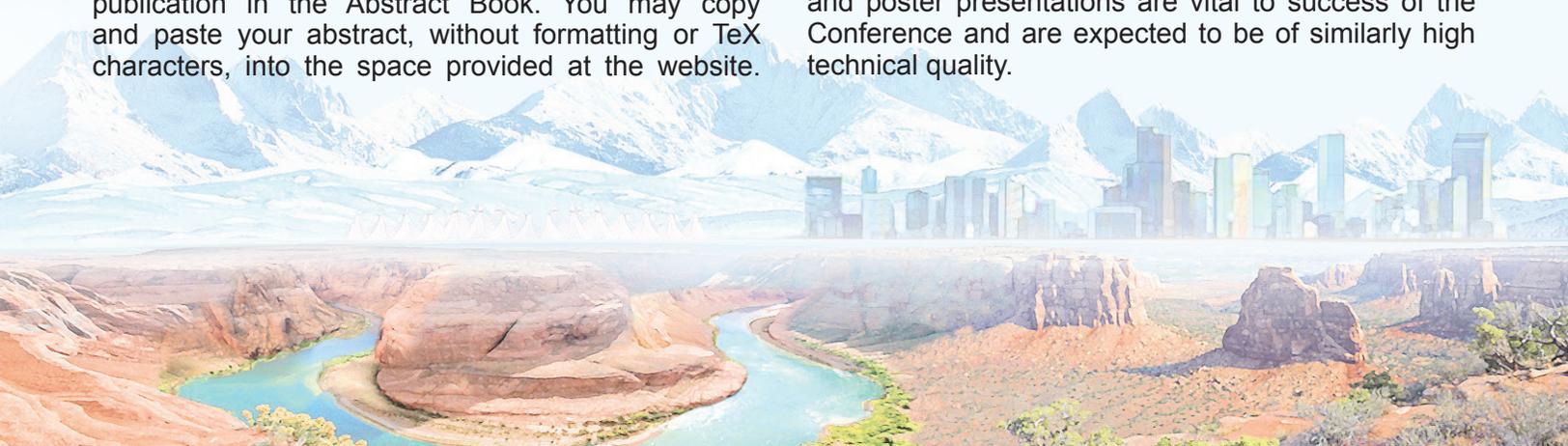
- Abstract acceptance will be announced via e-mail. **Authors will be advised as to the status of their submission by mid August 2014.**

- **Once the Conference Program is finalized**, the abstracts will appear online at the Conference website in a fully searchable format.

**PROGRAM:** The program will consist of invited and contributed papers falling broadly within the scope of the categories listed above. The Program Committee is co-chaired by Elke Arenholz, Andrew Kent, and Suzanne te Velhuis.

**INVITED PAPERS:** Some of the invited papers will be tutorial in nature, while others will review recent work in specialized fields. Nominations for invited speakers and symposia will be accepted April 1–19, 2013 via the Abstract Central Conference website only (<http://mmm2013.abstractcentral.com>). All are encouraged to submit suggestions. The Program Committee may also select contributed abstracts for upgrade to invited status.

**PRESENTATION OF CONTRIBUTED PAPERS:** Contributed papers accepted for the Conference will be presented either orally or by poster. Both oral and poster presentations are vital to success of the Conference and are expected to be of similarly high technical quality.



Oral contributed presentations will be in the conventional format of a 10-minute talk by the registered author using an LCD projector, followed by a 2-minute discussion period. Only LCD projectors will be provided. Authors are expected to bring their presentation on their own laptop computers along with a backup copy on USB flash memory in case of laptop failure. No other presentation format is available.

Poster presentations will consist of visual materials about the work posted on a designated board. The author must be available to present details and answer questions during the selected poster session times. Posting a copy of a paper is not appropriate and will be treated as a no show. The surface area available is 6' (1.8m) long by 4' (1.2m) high. The Conference provides a small sign designating the ID of the paper to be posted on each board, a covered table beneath each board for supplies, etc., and a small number of pushpins for posting the paper on the board.

Authors are requested to indicate their preference for oral or poster presentations in the box provided on the electronic form. However, the Program Committee will make the final decision on the assignment of papers to specific sessions and the presentation format (oral or poster) for each session. In the e-mail notice of acceptance, authors will be notified of the type of session for their presentation. They will also receive a URL for detailed rules and instructions for effective presentation.

**PUBLICATION:** The Proceedings of the Conference will be published in April 2014 as a special issue of the *Journal of Applied Physics*. Detailed instructions on the preparation of manuscripts for submission to the journal for authors whose papers are accepted for presentation at the Conference will be available on the Conference home page. The maximum paper length three journal pages for contributed papers. The invited papers will be published in a special focus section of a regular issue of *Journal of Applied Physics* without page limitation, but a suggested length of six pages. All manuscripts must be received by **September 23, 2013**. This deadline will be strictly observed. Post-deadline manuscripts will not be accepted nor forwarded for review. Authors are reminded that review standards will mirror those used for regular articles submitted to the *Journal of Applied Physics*, and that, because of time constraints, a second review may not

be possible for resubmitted papers that were originally rejected. Papers must be presented at the Conference by an author registered for the Conference in order to be published in the Proceedings.

All manuscripts related to contributed presentations must be submitted to the AIP web submission system, PeerX-Press (PXP). Instructions for submission and accepted formats for the journal will be available at the submission site (<http://mmm.peerx-press.org/>). Presenters of invited talks will get separate submission instructions.

The submission sites will be available for submission of papers beginning **August 23, 2013**. All papers to appear in the Proceedings **MUST** be submitted in this way. No paper manuscripts will be accepted. Reviewing and revisions will all be handled through the online system.

**EXHIBITS:** An exhibition of related services, equipment, materials, software, technical journals and books will be held as a part of the 2013 MMM Conference. Individuals and organizations who are interested in purchasing booth space should contact Jennifer Fiske, Exhibits Manager, at email: [jennifer@mmmconference.com](mailto:jennifer@mmmconference.com). The Exhibitor Prospectus will be available on the web site in April 2013.

**HOTEL:** The 2013 MMM Conference is being held in the largest hotel in Colorado. You may take a virtual tour of the property before you come by going to the hotel's web site: [www.sheratondenverdowntown.com](http://www.sheratondenverdowntown.com). Click on Photos, and then on Virtual Tour to see the rooms, meeting and exhibit space, and the surrounding area and pedestrian mall (outside the entrance to the hotel). The hotel offers a fitness gym, complimentary internet service and printers in the lobby, and allergy friendly rooms for those who suffer with asthma or other allergies.

The special group rate for all MMM Conference participants at the Sheraton Denver Downtown Hotel is \$159 plus tax for a single or double room. Internet service will be offered in each sleeping room at the reduced rate of \$4.95 plus tax (one-half of the current rate) for MMM Conference participants. To make your reservation within the MMM Conference room block at the special group rate, use this link: <https://www.starwoodmeeting.com/Book/mmmattendee>.



There is also a small block of student rooms being held at the rate of \$99/single or \$109/double plus tax per night. These rooms are very limited and should be booked as soon as a student has paid his/her registration fee. The reservation link for student rooms will be sent to paid student registrants along with their registration confirmation.

Another small block of government-rated rooms is being held at the current approved rate for Federal government employees. These rooms are also very limited and should be booked as soon as travel approval is granted. To make your reservation within the MMM Conference room block at the government rate, use this link: <https://www.starwoodmeeting.com/Book/mmmgov>.

**Please note that the Conference begins on Monday November 4th with a tutorial in the afternoon, and ends on Friday, November 8th in the late afternoon.**

**REGISTRATION:** The Conference registration fees will be published and the Advance Registration Form will be available on the web site in mid-August 2013. Please note that the Conference registration fees do not include any meals/meal service during the Conference week.

**VISA REQUIREMENTS FOR ENTRY INTO THE USA:** The U.S. has updated its visa policies, and so it may take you 3–6 months to apply for and receive your visa. For details that apply specifically to your country, please go **immediately** to your nearest U.S. Consulate or Embassy. Review your visa status now to determine if you need a U.S. visa or visa renewal and to find out how to schedule an interview appointment, pay fees, and other vital instructions. If you need a personal letter of invitation to attend the Conference, please request one by filling out the form at this link: [http://www.magnetism.org/invite\\_letter\\_request.html](http://www.magnetism.org/invite_letter_request.html) Please do not ask for additional information to be included in the invitation letter. The web form at the link above provides space for entering information such as the title of your paper and whether or not you are the presenting author. All invitation letters are generated in PDF format and will be emailed to you. The PDF file, which you should print out on white paper using a color printer, is the original version of your letter. Please understand that it is absolutely identical to a letter that would be printed

out in the conference office and mailed to you. The conference no longer provides “hard copies” of invitation letters by mail.

**The MMM Conference cannot contact or intervene with any U.S. Embassy or Consulate office abroad on your behalf so please begin your visa application process as soon as you determine that you want to attend the 2013 MMM Conference.**

**VISA WAIVER PROGRAM TRAVEL:** All nationals and citizens of Visa Waiver Program (VWP) countries who plan to travel to the U.S. for temporary business or pleasure for 90 days or less are required by law to obtain travel authorization prior to travel to the United States. This authorization can be obtained online through the Electronic System for Travel Authorization (ESTA).

**FURTHER INFORMATION:** To receive additional information about the 58th MMM, to be added to the Conference Mailing List, or to update your mailing address, please contact Janis Bennett, e-mail: [magnet@aip.org](mailto:magnet@aip.org). The latest information on the 58th MMM Conference can be found on the Conference homepage: <http://www.magnetism.org>

#### **FUTURE CONFERENCES:**

**2014 INTERMAG Conference**  
May 4–8, 2014, Dresden, Germany

**59th Conference on Magnetism and Magnetic Materials**  
November 3–7, 2014, Honolulu, Hawaii

**2015 INTERMAG Conference**  
May 4–8, 2015, Beijing, China

**13th Joint MMM/INTERMAG Conference**  
January 11–15, 2016, San Diego, California

**61st Conference on Magnetism and Magnetic Materials**  
October 31–November 4, 2016,  
New Orleans, Louisiana

**The 21st International Conference on Magnetism (ICM 2018)**  
July 16–20, 2018, San Francisco, California



**BEST STUDENT PRESENTATION AWARD:** There is a competition for the best student presentation at the 58th MMM Conference in Denver, CO to recognize and to encourage excellence in graduate studies in the field of magnetism. The winner at the 2013 Joint MMM-Intermag Conference was Uwe Bauer, MIT. The finalists were Azure Avery, Hiroshi, Idzuchi, Xue Lin, and Elizabeth Rapoport.

### **CONGRATULATIONS!**

#### **BEST STUDENT PRESENTATION AWARD GUIDELINES**

**Eligibility:** The nominee must be a full time graduate student expecting to graduate within one year of the 58th MMM Conference. The student's area of research may either be theoretical or experimental in any of the general technical and scientific areas normally presented as part of the 58th MMM Conference. The student's regularly submitted abstract must have been accepted for presentation through the normal abstract review process by the 58th MMM Conference Program Committee.

**Nature of Award:** This award consists of a one-year fellowship of \$1000 for the winner and a one-year fellowship of \$250 to each of the remaining finalists. The names of all finalists competing for the award will be announced in the 58th MMM Conference Program.

**Selection Process:** Up to eight finalists will be selected by a Student Award sub-committee of the 58th MMM Conference Program Committee. Selections will be made based on an extended 2-page version of the regularly submitted abstract plus a brief explanation of the student's contribution. Notification to the finalists will be made by e-mail in the middle of August 2013. The presentations, which must be made by the finalist, will be evaluated at the Conference by the Student Award sub-committee and the winner will be announced shortly after the conclusion of 58th MMM Conference. The decision of the Student Award sub-committee is final.

#### **BEST STUDENT AWARD APPLICATION PROCEDURE**

- Students must submit an abstract to the 58th MMM according to the standard submission guidelines and deadlines as outlined in the Call for Papers. Please DO NOT identify the abstract as part of the student award competition in the text of the abstract.
- Students must also submit **an extended 2-page abstract of their presentation**, including the number

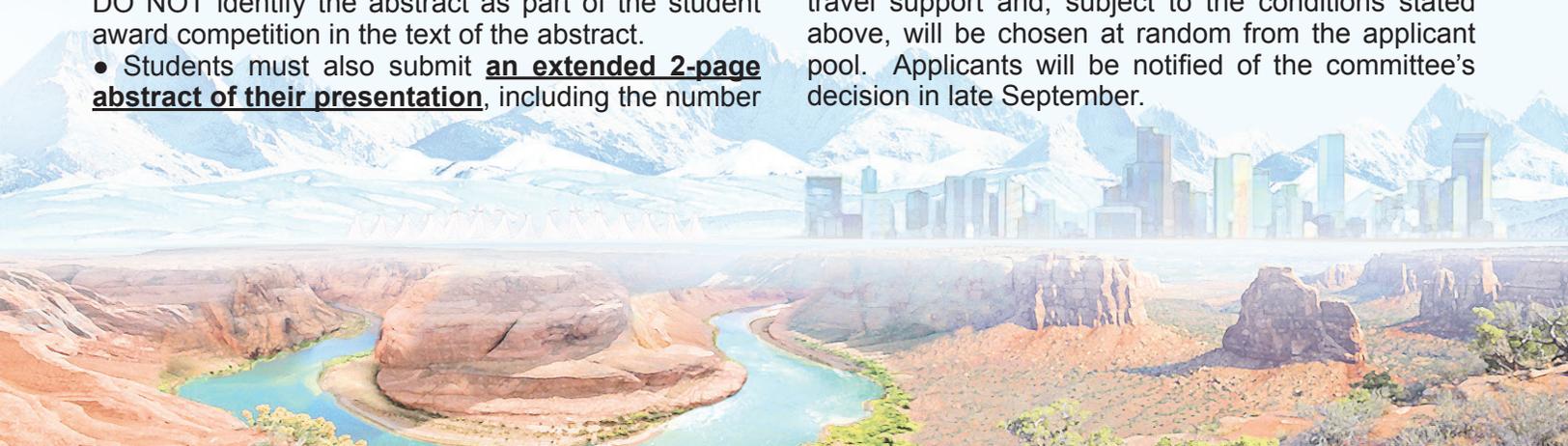
of the already-submitted abstract, **plus** a short (300 words or less) explanation of their contribution to the work described and its significance, directly to the Awards Chair, by the submission deadline of June 28, 2013.

- Applications MUST be submitted as pdf e-mail attachments. FAX or mail submissions will not be considered. The e-mail containing the student award application must have a subject line that reads "STUDENT AWARD- <APPLICANTS NAME>".
- Submit extended abstracts to the Awards Chair: Michael Pechan, Miami University, OH  
To:  
[StudentPresentationAwards@MMMConference.com](mailto:StudentPresentationAwards@MMMConference.com)  
Subject: STUDENT AWARD - <APPLICANTS NAME>

**STUDENT TRAVEL:** The Conference will offer travel grants to a limited number of students working in magnetism and magnetic materials. The grants are intended to partially offset travel costs (with the exception of Conference registration) for presenting students to attend the 58th MMM Conference. The Conference grants will be in the amount of \$750.

To be eligible for a Conference travel grant, a student must be presenting a paper at the Conference, the student's supervisor must submit a letter of recommendation, and the student must not have previously received a Conference or Magnetics Society travel grant. Only one application per research group will be accepted. Preference will be given to students who are nearing completion of their PhD graduate studies, although a limited number of Conference travel grants will be awarded to Masters and Undergraduate students. Postdoctoral fellows and non-students are not eligible.

Application forms and instructions for all travel grants will be posted online at [www.magnetism.org](http://www.magnetism.org) under "Student Travel," after the announcement of abstract acceptance in August. The deadline for submitting applications and letters of endorsement is 5:00 PM eastern daylight time on **September 6, 2013**. Applications MUST be submitted online, and incomplete or late applications and endorsement letters will NOT be considered. All students who will be presenting a Conference paper are eligible for travel support and, subject to the conditions stated above, will be chosen at random from the applicant pool. Applicants will be notified of the committee's decision in late September.



## CHILDCARE GRANTS:

### *New at the 58th MMM Conference!*

The Conference will offer a limited number of childcare grants, up to \$400, available for conference meeting attendees, who are bringing small children to the meeting or who incur extra expenses in leaving their children at home (i.e., extra daycare or babysitting services).

Details about allowable expenses and an application form are available at the conference website [www.magnetism.org](http://www.magnetism.org) under "Childcare Grants". After acceptance of your presentation applications for childcare support may be submitted to [ChildCareSupport@MMMConference.com](mailto:ChildCareSupport@MMMConference.com) using the application form. The deadline for submitting application is September 6, 2013. Recipients will be notified upon approval of their application in early October and receipts for reimbursements will have to be submitted by November 22, 2013.

## BEST POSTER AWARD

**Eligibility:** All posters will be eligible for nomination for this award provided that they meet the requirements and guidelines for the 58th Annual MMM Conference poster presentations and sessions, as described on the website. The presentations should consist of well-prepared visual materials about the work, posted on a designated board. It is required that an author be registered for the conference and in attendance to present details and answer questions during a designated session time. Since the award will be made at the session, it is recommended that the authors be present for the majority of the session. All posters must include a full contact mailing address in the case that the authors are not present when the award is made.

**Nature of the Award:** This award consists of a \$50 certificate. The awards will be made in the last hour of each poster session. A ribbon will also be attached to the successful posters. Winning posters will be prominently displayed through the remainder of the conference.

**Selection Process:** A Poster Award Committee will review all of the posters at the beginning of each session. Nominations will be made by the individual session chairs which will be forwarded to the Award Committee. Selections will be based on the level of the research, quality of the poster, and clarity of the presentation.

## IMPORTANT DATES

Nominations for invited speakers and symposia:	19 April 2013
Abstract submission opens:	12 June 2013
Abstract submission closes:	26 June 2013
Best Student oral award nomination deadline:	26 June 2013
Accept / reject notices:	12 August 2013
Manuscript submission opens:	23 August 2013
Student travel award and child support deadline:	6 September 2013
Manuscript submission closes:	23 September 2013
Conference pre-registration closes:	11 October 2013
Hotel reservation deadline:	11 October 2013

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