

PARTICULARS

The E-Newsletter of the American Association for Aerosol Research

SUMMER 2016

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As always, we'd love any feedback or suggestions you may have for **Particulars**.

Simply email info@aaar.org with the subject line 'Particulars'.

Chris Hennigan, Editor

**American Association
for Aerosol Research (AAAR)**

12100 Sunset Hills Road | Suite 130
Reston, VA 20190

T: 703.437.4377 OR 800.485.3106
E: info@aaar.org | www.aaar.org

President's Message

Dear Fellow AAAR Members,

I write this letter to report on our conference planning activities for 2017. In 2013, AAAR made a decision to hold the 2017 Annual Conference in Raleigh, North Carolina, at the Raleigh Convention Center. In March of 2016, the North Carolina legislature passed House Bill 2 (HB2), and the governor of the state signed it into law. One element of the law eliminates anti-discrimination protections for lesbian, gay, bisexual, and transgender people in the state, and another element requires that people use public restrooms based upon their gender at birth. In April, the governor backpedaled, putting some anti-discrimination protections back in place, but standing firm on the restrooms part of the legislation. In early May, lawsuits were filed on each side by the US Department of Justice and the North Carolina governor and leaders of the state legislature, ensuring that there would not be a quick resolution to this situation.

The AAAR Executive Committee began to discuss this concern by email and teleconference in early May, deciding that we should discuss this with the entire AAAR Board of Directors, and at the same time, investigate the city of Raleigh's position on HB2 as well as the possibility of moving the meeting to another location. On June 14th, the AAAR Board discussed this in depth by teleconference.

Factors in support of staying in Raleigh are AAAR's purpose as an organization, the positions taken by the city of Raleigh and the Raleigh Convention Center to welcome all people to their city, the large number of AAAR members in North Carolina, and the financial losses that would be incurred should AAAR relocate the conference. AAAR's purpose, as stated in our Bylaws, is to advance the discipline, and to "facilitate the exchange of information among its members and other disciplines" and the organization is explicitly prohibited from advocacy. Factors in support of a move are the state of North Carolina's overtly discriminatory position, which can be argued limits AAAR's ability to facilitate the information exchange if we hold our meetings in locations

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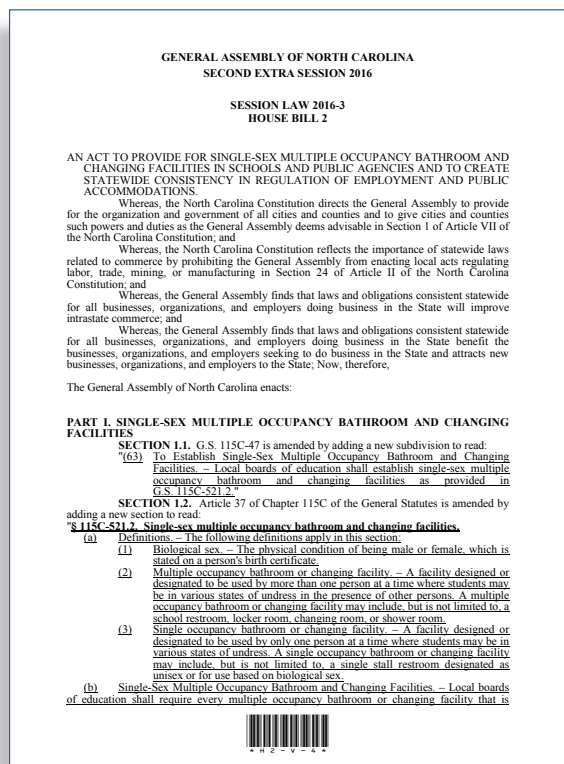
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where LGBT members may not feel welcome, where members may not feel welcome if any member of AAAR is experiencing discrimination, or where members may be prohibited from traveling by their employers. After careful review of information provided by the city of Raleigh and the Raleigh Convention Center (see raleighconvention.com for their statement, with a link to the Raleigh City Council's statement against HB2), as well as the financial impact associated with relocating the conference from a venue where we have already signed contracts with non-refundable deposits, the Board voted to remain in Raleigh for 2017. This was by no means an easy decision, and it was not a unanimous decision.

In a less polarized political environment, one could envision that the state of North Carolina might rescind HB2 prior to our conference. However, there is a strong possibility that this will be a long fight. Should HB2 remain in place in 2017, the position of the Board is that AAAR respects personal decisions made by members whether or not to attend the conference. We, as individuals, are charged to advocate for what we believe in. As decided by the Board in 2014, the 2020 Annual Conference is scheduled to return to Raleigh. Should HB2 remain in place, we will include an open discussion at the AAAR Business Meeting at this year's Annual Conference in Portland about whether this location makes sense for the organization going forward, given the "facilitate the exchange of information among its members" part of our purpose.

This experience has given me the opportunity to reflect upon the value and meaning of our Annual Conference professionally and personally. The exchange of information happens during the technical sessions, on the breaks, over dinner at the end of the day, and even at the airport heading home, and I look forward to it as a highlight of my year. *That said, I look forward to seeing you in Portland in October!* ●

Sheryl Ehrman, AAAR President



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American Association for Aerosol Research 35th Annual Conference October 17-21, 2016 Oregon Convention Center | Portland, Oregon

UPDATE

Dear Colleagues,

I look forward to seeing many of you at the 35th AAAR Annual Conference, which will be held at the Oregon Convention Center in Portland, Oregon, from October 17-21, 2016. The program will follow our usual format, with tutorial sessions on Monday, an exhibition from Tuesday through Thursday, and poster and platform presentations from Tuesday morning through Friday noon. This year's outstanding list of plenary speakers includes **Hai Wang** (Stanford), **Michael Mishchenko** (NASA), **Jon Samet** (USC), and **Christine Wiedinmyer** (NCAR). In addition to a full slate of topical sessions, we will have three special symposia designed to bridge multiple topical areas and promote cross-disciplinary interaction:

- (a) Electronic Cigarettes: Formulation, Particle Generation, Deposition, and Health Effects;
- (b) Effects of NO_x and SO₂ on BVOC Oxidation and Organic Aerosol Formation; and
- (c) Single Aerosol Particle Studies: From Fundamental Physics to Instrumentation.

Further details of the tutorials, special symposia, and plenary sessions are available on the conference web page at:

<http://meeting2016.aaar.org>

Those of you who submitted your conference abstracts before the May 6 deadline should already have a poster or platform assignment for your presentation listed in the preliminary technical program, posted online at:

<http://www.aaarabstracts.com/2016/program.php>

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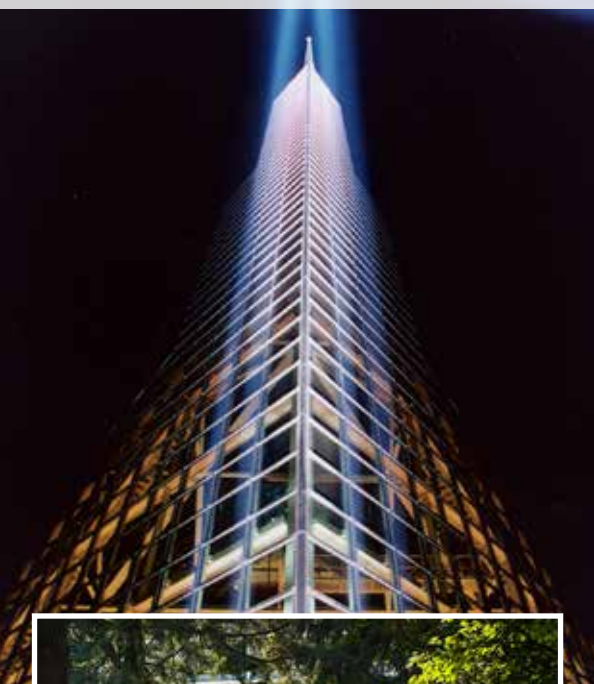
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Oregon Convention Center



DoubleTree Hotel



Willamette River

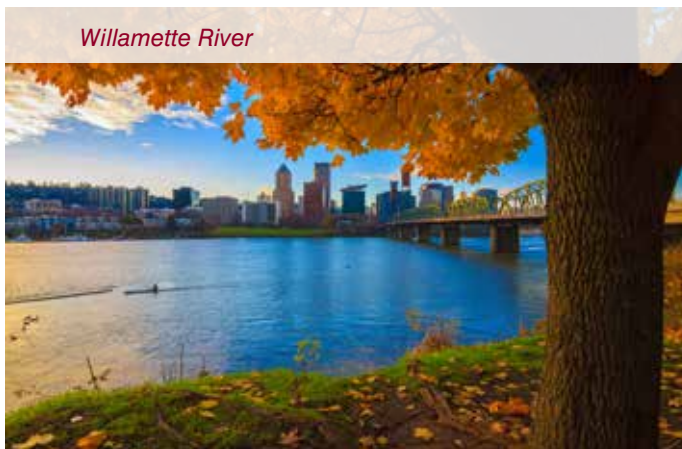


Photo: ©Josemaria Toscano

If for any reason you cannot present your paper, please contact us immediately via e-mail at:

support@aaarabstracts.com

This will minimize the number of corrections to the program once it goes into print. Abstracts submitted between May 6 and the **late breaking poster submission deadline of July 22** will be added to the conference program in early August. **July 22 is also the early registration deadline**—by registering for the conference before that date you will pay the lowest possible registration fee. Students (*and their advisors*) should check the web site for student travel grant information—these applications will be due **July 31**.

The conference venue, the Oregon Convention Center, is located along the Portland light rail system, providing easy access to the airport and downtown. Downtown has many fabulous restaurants, Powell's City of Books, the Oregon Museum of Science and Industry and traditional Japanese and Chinese gardens. Our host hotel for the 2016 AAAR Conference is the DoubleTree by Hilton, the largest hotel within walking distance of the Oregon Convention Center. **Room reservations** in the AAAR room block must be made no later than **September 24, 2016**. We anticipate, however, that the AAAR room block will sell out quickly, so please reserve your place as soon as possible. Further hotel and travel details are included on the conference web page at:

<http://meeting2016.aaar.org>

NEW for 2016 will be a 5k group run/walk along the Willamette River! The run/walk will start at 6:30 am on Wednesday morning from the Convention Center; you can sign up when registering for the conference.

Thanks to all of the working group chairs, symposium organizers, and others who have worked hard to put together an outstanding 2016 conference! *I look forward to seeing you there!* ●

Mark T. Swihart, 2016 AAAR Conference Chair

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Opportunities to Advance Your Science through National Nanotechnology Coordinated Infrastructure Site

By Linsey Marr, *Professor of Civil and Environmental Engineering,
Virginia Tech*

The burgeoning fields of nanoscience and nanotechnology can help inform aerosol science and vice versa. In **September 2015**, the US National Science Foundation (NSF) committed US\$81 million to support 16 National Nanotechnology Coordinated Infrastructure (NNCI) sites for the purpose of advancing nanoscale science and technology research. **Virginia Tech**, in partnership with **Pacific Northwest National Laboratory**, hosts an NNCI site whose goal is to enhance the ability to apply nanoscience and nanotechnology to help solve challenges in far-reaching and critical issues in all of the Earth sciences, including atmospheric science and related fields.

The Virginia Tech Nano Earth site is designed to provide cutting-edge laboratories and instrumentation to facilitate external scientific and engineering users in academia, government, and industry. The wide range of state-of-the-art facilities, instrumentation, and expertise in geoscience, environmental science, and engineering-related nanoscience and technology are available at a low cost to outside users. *Prior knowledge and expertise in nanoscience and technology are not required.* Additional information is available at:

<http://www.nanoearth.ictas.vt.edu/>

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By Jeff Pierce

Will switching to electric vehicles contribute to significant reductions in particulate matter?

A recent study showed that most particulate-matter mass emissions from internal-combustion vehicles comes from brakes, tires, and road dust in countries with regulated emissions from engines. Thus, moving to electric vehicles may only lead to small reductions in particulate-matter mass emissions from the vehicles.

<http://www.digitaltrends.com/cars/electric-car-particulate-matter/>

Funding for research on climate geoengineering via aerosols is being debated in US congress.

<http://www.sciencemag.org/news/2016/04/fight-global-warming-senate-calls-study-making-earth-reflect-more-light>

A large wildfire near Ft. McMurray, Alberta, Canada released a large amount of particles into the atmosphere, impacting large regions of North America. Here is a collection of images from space showing the magnitude of the smoke.

<http://www.wsj.com/articles/canadian-wildfires-as-seen-from-space-1462898835>

A recent study showed that the accelerated warming of the Arctic over recent decades is driven, in part, by reductions of aerosol emissions in Europe (and North America to a lesser degree).

<http://www.carbonbrief.org/cuts-in-europes-air-pollution-have-boosted-arctic-warming>

Aerosol physics underlies research on the spread of airborne communicable diseases.

<http://www.nature.com/news/the-snot-spattered-experiments-that-show-how-far-sneezes-really-spread-1.19996>

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By Kristina Wagstrom

Methodology for quantifying the volatile mixing state of an aerosol

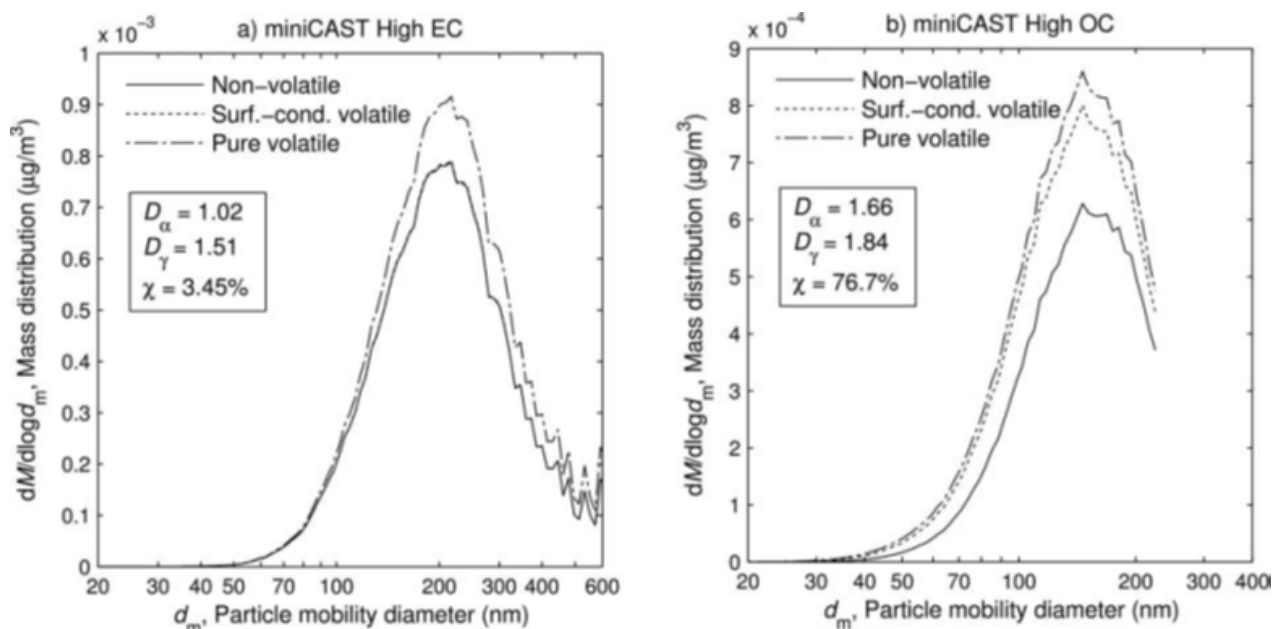
M. Dickau, J. Olfert, M. Stettler, A. Boies, A. Momenimovahed, K. Thomson, G. Smallwood, M. Johnson

Aerosol Science and Technology, Vol. 50, 759-772, 2016.

Quantifying the mixing state of aerosols has important implications for understanding optical, chemical, and hygroscopic properties. A knowledge of these properties is integral to determining the potential impacts on climate and human health from particles of differing composition. This differing composition can result from a variety of factors including particle source, particle age, and particle trajectory. This newsletter's featured article introduces a new method to determine the volatile versus nonvolatile mixing state using a suite of different aerosol instrumentation. This set-up allows the authors to investigate aerosol composition and mixing state as a function of aerosol size using measured fractions of volatile and nonvolatile components.

The authors have demonstrated the effectiveness of their approach using two different soot mixtures, one high in elemental carbon and the other high in organic carbon. In each case, they were able to determine the fraction of nonvolatile, condensed volatile (*on nonvolatile material*), and pure volatile material (*in independent particles*) in each sample. While both samples are primarily composed of non-volatile material, only the high organic carbon sample contained internally mixed particles of volatile and nonvolatile material. The sized resolved fractions of each of the components for both samples are shown in the figure below. ●

The mixing state as a function of mobility diameter for the (a) high elemental carbon and (b) high organic carbon soot samples.



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AAAR Student Chapter Updates

By Chris Hennigan

Membership in AAAR Student Chapters continues to grow. We highlight here a few (among many) activities undertaken by some of the Student Chapters over the past year.

Carnegie Mellon University: Members of the CMU AAAR Student Chapter were heavily involved in methane leakage measurements, the Finokalia Aerosol Measurement Experiment 2016 (FAME), and biomass burning intensives. In addition, the students organized the *4th Annual Donora Lecture*, bringing in **Dr. Michael Kleeman**, Professor from UC Davis, who presented on the health impacts of ultrafine particles.

Charles University in Prague: Students at Charles University in Prague organized the first international AAAR Student Chapter last year. The students have been busy in their first year with educational activities that include the development of a field course in aerosol experimentation. They have also been active socially, and have even begun beekeeping as a group on campus!

Clarkson University: The Clarkson AAAR Student Chapter attended the inaugural Hopke Lectureship Series. The keynote speaker was **Dr. Kim Prather**, Distinguished Chair in Atmospheric Chemistry at UC San Diego, whose talk was entitled "Flying through the Clouds: How does Mother Nature Control Clouds, Climate, and Weather?"

Colorado State University: The *Young Scientist Symposium on Atmospheric Research* was hosted by the CSU Department of Atmospheric Science—the AAAR Student Chapter played an integral role in organizing and hosting this annual event which attracts young scientists from all over the Colorado Front Range.

University of Cincinnati: The Cincinnati AAAR Student Chapter hosted **Dr. Karen Dannemiller**, Assistant Professor at The Ohio State University, for a special seminar on "The Indoor Microbiome and Associations with Childhood Asthma."

University of Florida: The UF AAAR Student Chapter engaged in multiple K-12 outreach activities, including hosting lab tours for local students, and also classroom demonstrations of aerosol instrumentation and an introduction to atmospheric phenomena like fog formation.

Washington University in St. Louis: The WashU Student Chapter successfully registered as a school-wide student organization. The WashU students also helped organize the 2nd annual *Center for Aerosol Science and Engineering (CASE)* workshop on Aerosol Reaction Engineering. ●

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Notice of Proposed Amendment to the Bylaws of the AAAR

As per the Bylaws of AAAR, notice of any proposed amendments shall be distributed to each member entitled to vote, not less than thirty (30) days prior to the Annual Business Meeting at which such amendment is to be discussed. Our Bylaws deem publication in any official publication of the Association as notice. Our newsletter, *Particulars*, is an official publication of the Association. Therefore, below please find a proposed amendment to the Bylaws of the AAAR, governing the creation and management of an endowment fund for the Association, reviewed by the Bylaws Committee and approved by the AAAR Board of Directors on **June 14, 2016**. This proposed amendment will be discussed at the Annual Business Meeting during the 2016 Annual Meeting in Portland Oregon.

Article VII: Endowment

SECTION 1. ENDOWMENT FUND

The American Association for Aerosol Research shall establish an Endowment Fund with a mission of assisting in advancing aerosol science and technology by providing financial support for AAAR's programs. The vision for the Endowment Fund shall be to establish and increase in net worth a set of endowment funds that will provide significant, stable, long-term financial support to aid in achieving AAAR's strategic objectives. It is intended to complement AAAR's revenue from dues and other sources.

SECTION 2. MANAGEMENT

The management of the AAAR's Endowment Fund shall be vested with an Endowment Committee. The Endowment Committee shall be responsible to the AAAR's Board of Directors and shall work with the Finance Committee and other Society Committees to achieve the mission and vision of the Endowment Fund. Legal fiduciary responsibility for the AAAR Endowment Fund shall be vested with the AAAR Board of Directors.

SECTION 3. RESPONSIBILITY

The Endowment Committee shall provide leadership for the AAAR's philanthropy-based long-term fund raising activities. The Endowment Committee will develop, review, revise and implement policies for fundraising, oversee the investment of endowment funds in cooperation with the Finance Committee, and recommend to the AAAR Board of Directors the use of these funds to support AAAR's Programs. The Endowment Committee will develop philanthropy-based fundraising goals, spear head fundraising activities and educate AAAR members as to the value of philanthropic giving to the AAAR's Endowment Fund.

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SECTION 4. STRUCTURE

The Endowment Committee consisting of up to seven (7) individuals, not counting ex officio members, shall be appointed by the AAAR president. The members shall include the Immediate Past President (one-year (1) term), immediate past Treasurer (two-year (2) term) and one (1) appointee (three-year (3) term), selected from among past members of the AAAR Executive Committee. The up to four (4) at-large members (three-year (3) term) shall include AAAR members of good standing of at least one (1) year at the time of appointment or donors who have made significant financial contributions to the Endowment Fund and who have indicated a willingness to serve a three-year (3) term as an Endowment Committee Member. The initial term served by the immediate past Treasurer shall be either one (1) or two (2) years to synchronize with the term of Treasurer. The members with three year terms in the initial class of appointees shall either volunteer or “draw from a hat” to accept terms of either 1, 2 or 3 years to ensure that individual members serve overlapping terms. Individuals may be reappointed as Endowment Committee Members, but in no case shall they serve more than two (2) consecutive three-year (3) terms. In the event of a vacancy on the Endowment Committee, including vacancies occurring as a result of a former officer declining appointment to the Endowment Committee or resignations, the current AAAR President shall appoint an individual from the previously described slate of candidates to complete the unexpired term of office. All appointments by the AAAR President shall be subject to ratification by the AAAR Board of Directors. AAAR's current Treasurer, during the first year of his or her term, the Treasurer-Elect when that office is filled, the current President and the Executive Director, by virtue of their offices, shall serve ex-officio as nonvoting members of the Endowment Committee. The Chair shall be appointed by the President from among the members of the Endowment Committee subject to ratification by the AAAR Board of Directors.

SECTION 5. CREATION OF SUB-FUNDS

The Endowment Committee shall recommend to the AAAR Board of Directors the creation of sub-funds within the Endowment Fund consistent with the needs of AAAR, the instructions of donors and the regulations of the United States Internal Revenue Service and the jurisdiction in which AAAR is incorporated. To attract the broadest possible donor support, the Endowment Committee shall establish multiple kinds of sub-funds such as (a) Quasi Endowment Funds whose use will be restricted by donor-imposed time and/or donor-imposed purpose restrictions and (b) True Endowment Funds based on donor imposed restrictions as to use, such funds to be maintained and used by AAAR in perpetuity for the donor-identified purpose. The Endowment Committee will periodically review and recommend to the AAAR Board of Directors the minimum contribution(s) required to establish a Quasi Endowment Fund. The Endowment Committee will periodically review and recommend to the AAAR Board of Directors the minimum contribution(s) required to establish a True Endowment Fund to be maintained and used in perpetuity for the donor-identified purpose. The Endowment

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Committee, to assist in the solicitation of funds from multiple donors, may recommend the establishment of separate sub-funds to be used for purposes and over time periods identified by the Endowment Committee. The purpose and time period of all sub-funds of the AAAR Endowment Fund must be ratified by the AAAR Board of Directors. The Endowment Committee shall provide donors the opportunity to name sub-funds for individuals and/or intended purpose of use. All documents related to the solicitation of funds, the maintenance and investment of funds and the use of funds shall receive appropriate review by legal counsel.

SECTION 6. INVESTING

The Endowment Committee shall provide input to the Finance Committee and AAAR Board of Directors for establishing an investment policy for the Endowment Fund that is consistent with securing both long-term appreciation of the assets within the Endowment Fund and safe-guarding the total value of these assets. The Endowment Committee shall, along with the Finance Committee, regularly (at least annually) review the investment performance of the Endowment Fund and, taking account of inflation, recommend to the AAAR Board of Directors a percentage rate for disbursement of the True Endowment Fund's assets that will ensure that these funds continue in perpetuity.

SECTION 7. BUDGETING

The Treasurer shall annually, as part of preparation of AAAR's budget for the following year, provide the Endowment Committee and AAAR Board of Directors with information on the funds available for expenditure from the various sub-funds within the Endowment Fund. The AAAR Board of Directors shall approve, on recommendation of the AAAR Endowment Committee, the expenditure of Endowment Fund proceeds consistent with the instructions of the donors and any legal restrictions. Investment management expenses shall be deducted from the funds. Any other operating expenses of the Endowment Fund shall be treated as an ordinary operating expense of the AAAR and not charged against the Endowment Funds.

SECTION 8. REPORTING

The Treasurer shall annually prepare a report on the performance and status of the Endowment Fund. This report shall include the status of all individual sub-funds at the beginning and end of each year, the amounts of funds contributed by donors during the year, the return on investment, and the amount and purpose of disbursements from the Endowment Fund and a list of contributors with the exception of any donors who wish to remain anonymous. The Annual Report of the Endowment Fund shall be reviewed with the Endowment Committee and presented to the AAAR Board of Directors at the Winter Board Meeting. The Treasurer will update the report before the annual conference and the Endowment Committee will create a summary report to present to AAAR membership at the Annual Business Meeting of AAAR and to publish on the AAAR Web site. The AAAR President with support of the Endowment Committee shall send an appropriate annual report to each Donor.

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SECTION 9. CONTRIBUTIONS

The AAAR shall only accept contributions to the Endowment Fund for purposes consistent with the AAAR's strategic objectives and the AAAR's status as a non-profit entity designated as having §501(c)3 status under the United States Internal Revenue Service Code. The Endowment Committee shall make recommendations to the AAAR Board of Directors on issues concerning acceptance and use of contributions to the Endowment Funds. The final authority for decisions on acceptance and use of Endowment Fund contributions is vested with the AAAR Board of Directors.

SECTION 10. MATCHING CONTRIBUTIONS

The Endowment Committee may, at its discretion, from time to time recommend to the AAAR Board of Directors that AAAR assets, other than those within the Endowment Fund, be used to match contributions made to the various sub-funds within the Endowment Fund. The specific amount allocated for use as Matching Funds shall be approved by the AAAR Board of Directors.

Section 11. GOVERNANCE

Management of the Endowment Fund will be guided by these Bylaws and written policy guidance that is consistent with the Bylaws. The Endowment Committee will periodically review the written policy guidance for its adequacy in guiding management decisions and, when necessary, propose modifications to existing policy guidance or propose new guidance. Changes in policy guidance or proposed new policy guidance shall be initiated by the Endowment Committee and submitted to AAAR Board of Directors for ratification.

SECTION 12. POTENTIAL DISSOLUTION OF AAAR

In the event the AAAR Board of Directors determines the need to dissolve the AAAR, the assets in the AAAR Endowment Fund (including all the sub-funds) shall be transferred to another non-profit, science-based, corporation that has §501(c) (3) status. Documentation concerning the creation of each sub-fund and its purpose(s) shall be provided to the new corporate entity to assist in ensuring that the transferred funds will be used for purposes consistent with the wishes of the original donors. ●