

## Our Investment in the Future of AAAR

### A Hidden World in a Particle

Ziying Lei, Sarah Brooks, Seth Thompson, Bo Chen, Brianna H. Matthews, Ron Li, Anita D. Rapp, & Christopher J. Nowotarski

Texas A&M University



**American Association  
for Aerosol Research**

# Endowment Fund

## ANNUAL REPORT 2024

# Mission

Dear Colleagues,

The mission of the American Association for Aerosol Research Endowment Fund is to assist in advancing aerosol science and technology by providing stable, long-term financial support for the Association's programs. The goal is to establish, and increase in net worth, a set of funds that will provide significant financial support to aid in achieving AAAR's strategic objectives. The Endowment Fund is intended to complement AAAR's revenue from dues and other sources. This mission is enabled by the generous contributions of colleagues, their friends and families, and aerosol instrumentation companies. It is currently being realized by funding awards, plenary lectures, and a strategic project developed by the Vice-President Elect.

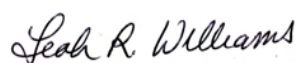
AAAR endowment funds are invested in a blend of high-quality stocks and bonds following the AAAR investment policy. In order to support AAAR activities, a total of about \$17,000 was disbursed in 2024, including support for the Friedlander Memorial Plenary Lecture, five AAAR awards, and a joint award with the International Society of Aerosols in Medicine. Further details about the current funds and how they were used can be found in this report.

We are pleased to announce that the AAAR Excellence in Teaching, Mentoring, and Training (TMT) Award Fund, spearheaded by Rachel O'Brien, reached its fundraising goal thanks to a generous donation from Doug Worsnop. The total raised was \$36,950 and matching funds in the amount of \$25,000 were approved at the 2024 Winter Board Meeting. The first TMT Award was presented to Akua Asa-Awuku, of the University of Maryland, at the 2024 annual conference.

Fundraising continues for the International Friendship Fund, led by Susanne Hering. The goal is to provide support for international aerosol scientists outside the US and Canada to attend the AAAR annual conference. If you would like to donate to this, or any other endowment fund, please visit <https://www.aaar.org/donations/>.

On behalf of the entire Endowment Committee, thank you for your contributions!

Sincerely yours,



**Leah Williams**

Endowment Committee Chair 2024

## Two Worlds Apart: Pyrolysis and Oxidation

Christian Bjork, Mahmoud Ashour,  
Francesco Carbone

University of Connecticut

# Current Endowment Funds and 2024 Activities

The AAAR Endowment Fund is comprised of sub-funds that are either True Endowment Funds or Quasi Endowment Funds. True Endowment Funds are established by a donor-restricted gift. The original value of gifts contributed to True Endowment Funds cannot be spent. The income and appreciation earned by True Endowment Funds provide a source of expendable revenue in perpetuity for the purposes specified by the donor and agreed to by AAAR. Quasi Endowment Funds are created by donor gifts or by AAAR Board designation and are treated the same as True Endowment Funds except that the original contributions can be spent in accord with the purpose of the fund and may have a finite lifetime. The AAAR Endowment Funds currently have seven True Endowment Funds and six Quasi Endowment Funds.

## True Endowment Funds

### Sheldon K. Friedlander Memorial Fund for Promoting Aerosols as an Enabling Discipline

This fund was established in 2009 by the family of Sheldon Friedlander with a \$50,000 donation. Friends and colleagues contributed additional funds. The goal of the fund is to support activities related to promoting aerosols as an enabling discipline, such as plenary lectures and special symposia at the annual conference.

The 2024 Friedlander Lecture titled *"Don't Hold Your Breath! Tissue Chips and Other In Vitro Models for Studies of Inhalation Toxicology"* was presented by Ivan Rusyn of Texas A&M University.

The Friedlander Fund also continues to support the AS&T Paper Lecture Series. This initiative aims to highlight the research in our community, tie our Journal to other AAAR activities, and provide an opportunity to bring us all together outside of the Annual Conference. Each month the Editors of AS&T selected a high impact journal article to be presented by its author. For each lecture one of AAAR's Student Chapters serves as host. Seven lectures were held in 2024. Recordings are available to view at <https://www.aaar.org/meetings-events/aaar-lectures-series/>.

### Fissan-Pui-TSI Award Fund

This fund was established in 2005 with a \$75,000 donation from TSI Incorporated, which provided the award amount in

2006 and \$65,000 to support future awards. The Award is granted by the International Aerosol Research Assembly (IARA) to recognize international collaboration in the field of aerosol science and technology between researchers/engineers residing on at least two different continents. The award is presented every four years at the International Aerosol Conference (IAC).

The Fissan-Pui-TSI Award was not awarded at the IAC in 2022.

### Presidents Fund

This fund was started in 2016 with a generous donation from David Ensor and additional contributions from Past AAAR Presidents. The Board of Directors then voted to contribute matching funds to bring the Presidents Fund up to the amount of a True Endowment. An official account was set up in early 2019. The donors decided that the Vice-President Elect would use the income from this fund to help support an activity they would like to help establish during their Presidency to further support the mission of AAAR. In 2024, Vice President Amy Sullivan used this funding to bring students from local universities and colleges to the annual conference in Albuquerque, New Mexico. Twenty-nine participants from New Mexico Tech, Sandia National Laboratory, Northern Arizona University, and Diné College joined us on Monday of the Conference for the tutorials. They attended the Introduction to Aerosols Part I and II Tutorials taught by Rick Flagan. They then had lunch with AAAR's Past Presidents. In the afternoon, they attended 2 tutorials of their choice. In



*Receiving the Susanne Hering Award in 2024 is an incredible honor and a deeply meaningful recognition of my team's work in aerosol science, particularly in promoting public health and improving indoor air quality. The creation of the Viable Virus Aerosol Sampler (VIVAS), now widely adopted by researchers and users around the world for sampling airborne viruses, was directly born out of an enlightening discussion with Susanne Hering at a AAAR conference. Susanne is a visionary aerosol scholar who has demonstrated how aerosol technology can be harnessed to better the world. This award represents the highest accolade in our field, and I am profoundly grateful to be a member of the AAAR family contributing to this enabling profession. AAAR's Susanne Hering Award will continue to inspire aerosol engineers to use their unique technical talents to safeguard public health and the environment.*

C-Y Wu

2024 Hering Award





*The Whitby Award is a great honor that has increased the visibility of my group's research and is also a recognition of my group's hard work. I hope to live up to the standard set by previous Whitby Award winners, who have all gone on to have impactful careers in aerosol science.*

**Bryan Bzdek**  
2024 Whitby Award

addition, many of them joined fellow Conference Attendees at an evening Panel Discussion on Community Engaged Research followed by a Trivia Event.

#### **AS&T Outstanding Publication Award Fund**

The AS&T Outstanding Publication Award was established in 2015 and is presented annually to recognize a paper published in Aerosol Science and Technology (AS&T) that has had a significant impact on the field. Part of this award is provided by Taylor and Francis, who publishes AS&T, and part by AAAR. This fund was created in late 2018 to provide AAAR's portion of the award with a generous donation from Peter McMurry and additional contributions from other previous and current AS&T Editors. The Board of Directors then voted to contribute matching funds to bring the AS&T Outstanding Publications Award Fund up to the amount of a True Endowment. An official account was set up in early 2019.

In 2024, the AS&T Outstanding Publication Award was presented to Peter McMurray and Mark Stolzenburg for their paper *"Equations Governing Single and Tandem DMA Configurations and a New Lognormal Approximation to the Transfer Function,"* Aerosol Science and Technology, 42(6), 421–432 (2008).

#### **Susanne V. Hering Award Fund**

This fund was established in 2021 to honor Susanne V. Hering, Founder and President of Aerosol Dynamics, Inc. as well as a previous AAAR President, Conference Chair, Board Member, Plenary Speaker, Tutorial Speaker, and Benjamin Y.H. Liu Award Winner. This new award recognizes outstanding contributions to aerosol science by a scientist whose work has had a significant impact on public health, the built environment or the global ecosystem. Donations by colleagues, friends, and

aerosol technology companies were matched by the Board to create this True Endowment.

The 2024 Susanne V. Hering Award was awarded to C-Y Wu of the University of Miami in Coral Gables, Florida.

#### **Dale Lundgren and Virgil Marple Fund**

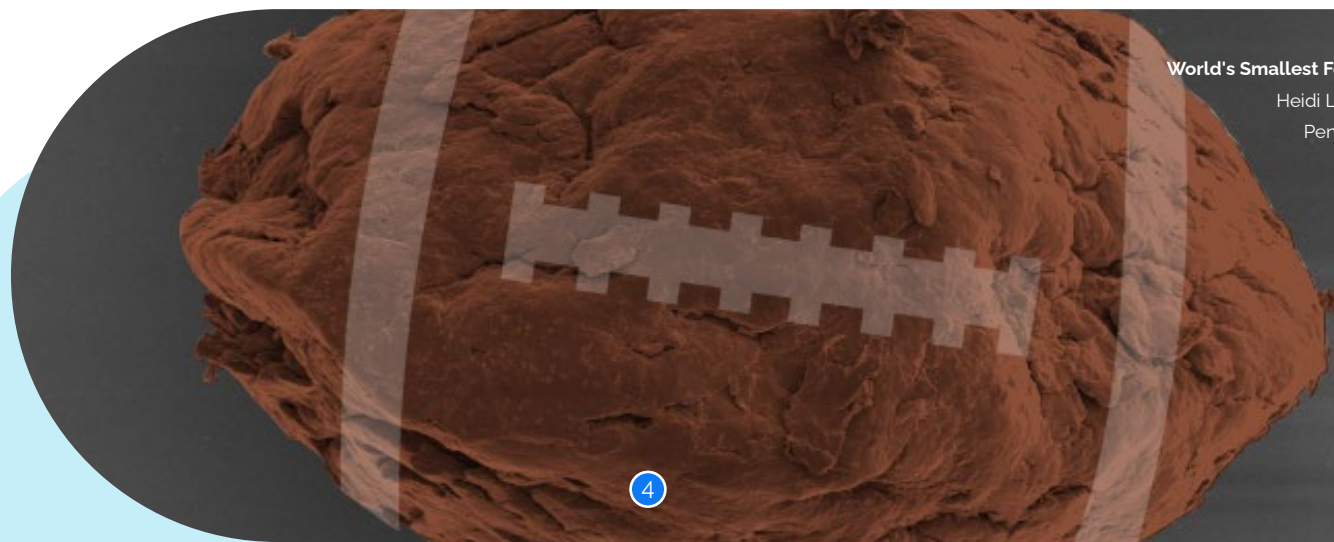
This fund honors the contributions of Dale Lundgren and Virgil Marple in their long-term collaborative efforts to advance aerosol measurement science and education. The fund supports a plenary lecture at AAAR annual meetings. Donations by colleagues, friends and family were matched by the Board to establish this True Endowment fund in 2024.

The 2024 Lundgren-Marple Plenary Lecture titled *"Atmospheres and Aerosols of Other Worlds"* was given by James Cutts of the Jet Propulsion Laboratory.

#### **AAAR Excellence in Teaching, Mentoring, and Training Award Fund**

This award recognizes the importance of supporting students and early career scientists in our field. It honors both mid-career and senior scientists who have demonstrated outstanding contributions to teaching, mentoring, and training the next generation of aerosol scientists. The fund was established in 2024 by generous donations from Doug Worsnop and other AAAR members, plus matching funds from AAAR.

The first AAAR Excellence in Teaching, Mentoring, and Training Award was presented to Akua Asa-Awuku of the University of Maryland at the 2024 Annual Conference.



**World's Smallest Football**

Heidi L. Busse  
Penn State

## Quasi Endowment Funds

### Sheldon K. Friedlander Dissertation Award Fund

Revenue from this fund supports the monetary prize for the Sheldon K. Friedlander Award which recognizes an outstanding dissertation by an individual who has recently earned a doctoral degree. The dissertation can be in any discipline in the physical, biomedical, or engineering sciences but must be in the field of aerosol science and technology. The award memorializes Sheldon Friedlander for his leadership as a researcher, teacher, and pioneer in aerosol science. One of AAAR's founders, Friedlander is a past recipient of the distinguished Fuchs Memorial Award. He directed graduate students at Columbia University, Johns Hopkins University, the California Institute of Technology, and the University of California for more than 50 years.

The 2024 Sheldon K. Friedlander Dissertation Award was presented to Christopher Kenseth for their dissertation work at the California Institute of Technology.

### Thomas T. Mercer Joint Prize Fund

Sponsored by AAAR and the International Society for Aerosols in Medicine (ISAM), the Thomas T. Mercer Joint Prize recognizes excellence in the areas of pharmaceutical aerosols and inhalable materials. The award honors the legacy of Thomas T. Mercer, an outstanding researcher and author whose work encompassed aerosol physics and chemistry as well as inhalation toxicology, industrial hygiene, and health physics. The fund was established by a generous donation from the Mercer Family Foundation.

The 2024 Thomas T. Mercer Joint Prize was presented to Ronan McLoughlin of Aerogen Ltd. (Ireland).

### David Sinclair Award Fund

Revenue from this fund supports the David Sinclair Award which recognizes sustained excellence in aerosol research and technology by an established scientist still active in their career whose research will have a lasting impact in aerosol science. The award memorializes David Sinclair, one of aerosol science's great innovators, known for his knowledge, ingenuity and energy.

The 2024 David Sinclair Award was presented to Thanos Nenes of the École Polytechnique Fédérale de Lausanne in Lausanne, Switzerland.

### Kenneth T. Whitby Award Fund

This fund supports the Kenneth T. Whitby Award which recognizes outstanding technical contributions to aerosol science and technology by a young scientist. The purpose of the award is to encourage continued work in the field. The award memorializes Kenneth T. Whitby, known for his contributions to aerosol measurement, the study of aerosol properties and behavior, and the nature of atmospheric aerosols.

The 2024 Kenneth T. Whitby Award was presented to Bryan Bzdek of the University of Bristol.

### Benjamin Y. H. Liu Award Fund

This fund supports the Benjamin Y. H. Liu Award which recognizes outstanding contributions to aerosol instrumentation and experimental techniques that have significantly advanced the science and technology of aerosols. The award honors Benjamin Liu for his leadership in the aerosol community and his own seminal contributions to aerosol science through instrumentation and experimental research.

The 2024 Benjamin Y. H. Liu Award was presented to Chuji Wang of Mississippi State University.

### Fuchs Memorial Award Fund

The Fuchs Memorial Award is the premier international prize in aerosol science and is sponsored by AAAR, the Gesellschaft für Aerosolforschung (GAeF) and the Japan Association of Aerosol Science and Technology (JAAS). This fund supports AAAR's contribution to the award. Presented every four years at the International Aerosol Conference, the award memorializes Nikolai Albertovich Fuchs, the great Russian scientist who is regarded by many as the "*father of aerosol science*". The award recognizes outstanding worldwide contributions to the field of aerosol research.

The 2022 Fuchs Memorial Award was awarded at the International Aerosol Conference to Juan Fernandez de la Mora of Yale University.

# Endowment Committee

The Endowment Committee oversees the management of the AAAR Endowment Funds and provides leadership for AAAR's philanthropy-based, long-term fundraising activities. The Committee is responsible for developing, reviewing, revising and implementing policies for fundraising; and making recommendations to the Board for the use of the funds to support AAAR's programs. The Committee develops fundraising goals, spearheads fundraising activities and educates AAAR members as to the value of philanthropic giving to AAAR's Endowment Funds.

## Members of the Endowment Committee

|                                  |           |
|----------------------------------|-----------|
| Sonia Kreidenweis                | 2021–2024 |
| Suzanne Paulson                  | 2021–2024 |
| Akua Asa-Awuku                   | 2022–2023 |
| Allison Aiken                    | 2022–2024 |
| Benjamin Nault                   | 2022–2025 |
| C-Y Wu                           | 2022–2025 |
| Murray Johnston                  | 2023–2026 |
| Leah Williams<br>(2024 Chair)    | 2023–2024 |
| Faye McNeill<br>(AAAR President) | 2023–2024 |
| Jim Smith<br>(AAAR Treasurer)    | 2023–2024 |
| Rachel O'Brien (Guest)           | 2023–2024 |



*I am deeply honored to receive the Benjamin Y. H. Liu Award. AAAR has been instrumental in shaping my professional journey, providing an extraordinary community for collaboration, knowledge exchange, and scientific advancement. This award is especially meaningful as it recognizes contributions to aerosol science and technology, reinforcing the importance of innovation and continued dedication. I am grateful to the AAAR Endowment for supporting this recognition, which not only honors past achievements but also inspires future advancements in aerosol science and technology.*

**Chuji Wang**  
2024 Liu Award

### Synthesis in Progress...

Owen Fuhr, Francesco Carbone  
University of Connecticut



# Building the Future

The Endowment Committee seeks to engage AAAR members, and their families and friends, in establishing and directing the future of the endowment. The following funds are currently under development. Help us support aerosol science and its application to important societal issues with a contribution. An on-line donation portal along with a description of all our funds can be found on the AAAR website at <https://www.aaar.org/donations/>. We also welcome donations from donor advised funds or individual retirement accounts. Please let us know if you have included AAAR in your estate plans.

## Funds Under Development

**International Friendship Fund.** This fund will support international participation in AAAR annual meetings through travel grants to aerosol scientists who work outside the US and Canada.

We welcome members' thoughts regarding other activities that could make AAAR more effective in fostering and supporting aerosol science. Some possible concepts for endowment funds are included in the table below. Named funds to memorialize the legacy of prominent members of the aerosol community are a possibility as well. Please send your ideas to Committee Chair Leah Williams at [williams@aerodyne.com](mailto:williams@aerodyne.com). Also note that the Board of Directors has set a policy to provide up to \$25,000 in matching funds for groups that raise at least \$25,000 in order to establish true endowment funds.

## Ideas for Potential New Endowment Funds to Support AAAR's Mission

| Concept  | Annual Spending | Endowed Amount* |
|--|-----------------|-----------------|
| <b>Student Poster Prizes</b><br>(To award 10 at \$200 each)                          | \$ 2,000        | \$ 50,000       |
| <b>Early Career Travel Grant</b><br>(To cover registration, lodging and some travel) | \$ 2,000        | \$ 50,000       |
| <b>Plenary Lecture</b><br>(To cover honorarium, lodging and some travel)             | \$ 2,000        | \$ 50,000       |
| <b>Early Career Event at Conference</b>  | \$ 4,000        | \$ 100,000      |
| <b>Student Travel Grants</b><br>(To award 10 at \$500 each)                          | \$ 5,000        | \$ 125,000      |

\*Endowed amount is based on assuming a 4% average rate of return on investments to support annual spending.



*The TMT award has already greatly enhanced the visibility of my research group and has highlighted the exceptional talent of both my former and current mentees. This recognition continues to be critical in inspiring others and expanding the reach and impact of my aerosol research.*

**Akua Asa-Awuku**

2024 Teaching, Training and Mentoring Award

**Luminous Fallout: Deposition After Recreating a Biohazard Accident**

Ashley Ravnholdt  
University of Nebraska  
Medical Center





**A Call to Protect Air Quality for a Sustainable Future in Africa**  
 Oladayo Oladeji (Carnegie Mellon University);  
 Oluwaseyi Abraham Olayinka (University of Ibadan)

# Status of the Funds in 2024

| AAAR Endowment Funds Financial Summary for 2024   |   |                                   |                            |   |                                      |
|---|---|-----------------------------------|----------------------------|---|--------------------------------------|
| Name of Endowment Fund  | Net Assets<br>Beginning of Year 1/1/2024<br>(Audited) | Contributions +<br>Matching Funds | Total Disbursed<br>in 2024 | Net Return<br>(Gain/Loss + Interest - Fees) | Net Assets<br>End of Year 12/31/2024 |
| <b>True Endowment Funds (Permanently Restricted Corpus, Remainder Temporarily Restricted)</b> |   |                                   |                            |   |                                      |
| Friedlander Memorial Fund (\$50,000 Corpus)   | \$ 131,510  |                                   | -\$ 1,748                  | \$ 17,871                                   | \$ 147,633                           |
| Fissan-Pui-TSI Award Fund (\$65,000 Corpus)   | \$ 138,344  |                                   |                            | \$ 18,187                                   | \$ 156,531                           |
| Presidents Fund (\$51,800 Corpus)   | \$ 65,270   | \$ 1,700                          | -\$ 1,310                  | \$ 8,551                                    | \$ 74,211                            |
| AS&T Outstanding Publication Award Fund (\$54,100 Corpus)                                     | \$ 62,072   | \$ 1,000                          | -\$ 2,265                  | \$ 8,198                                    | \$ 69,005                            |
| Susanne V. Hering Award Fund (\$74,373 Corpus)  | \$ 72,118   |                                   | -\$ 1,640                  | \$ 9,479                                    | \$ 79,957                            |
| Lundgren-Marple Fund (\$52,550 Corpus)  | \$ 27,050   | \$ 25,000                         |                            | \$ 4,307                                    | \$ 56,357                            |
| Excellence in Teaching, Mentoring and Training Fund (\$61,950 Corpus)                         | \$ 6,950  | \$ 55,000                         | -\$ 1,640                  | \$ 4,918                                    | \$ 65,228                            |
| <b>Quasi Endowment Funds (Board Designated)</b>   |   |                                   |                            |   |                                      |
| Friedlander Dissertation Award Fund   | \$ 46,233   |                                   | -\$ 1,640                  | \$ 6,062                                    | \$ 50,655                            |
| Thomas T. Mercer Joint Prize Fund   | \$ 45,355   |                                   | -\$ 2,043                  | \$ 6,342                                    | \$ 49,654                            |
| David Sinclair Award Fund   | \$ 43,692   |                                   | -\$ 1,640                  | \$ 5,776                                    | \$ 47,828                            |
| Kenneth T. Whitby Award Fund  | \$ 42,016   |                                   | -\$ 1,640                  | \$ 5,722                                    | \$ 46,098                            |
| Benjamin Y. H. Liu Award Fund   | \$ 47,297   |                                   | -\$ 1,578                  | \$ 6,865                                    | \$ 52,584                            |
| Fuchs Memorial Award Fund   | \$ 49,678   |                                   |                            | \$ 7,423                                    | \$ 57,101                            |
| <b>Funds Under Development</b>  |   |                                   |                            |   |                                      |
| International Friendship Fund   | \$ 15,300   | \$ 12,150                         |                            |   | \$ 27,450                            |



# Donor Acknowledgements

## 2024

We would like to formally recognize these donors for their generous contributions to our new and existing Endowment Funds.

Peter Buseck

Andrea Ferro

Susanne Hering

Leah Williams

Doug Worsnop

### The Aerosol Intricacies of Chicken Coops

(Aerosol Sample on TSA  
Chloramphenicol Plate)

John Cate

Texas A&M University



*It is a tremendous honor to receive the 2024 Sheldon K. Friedlander Dissertation Award. AAAR has been my scientific home since I began my career in aerosol chemistry research more than a decade ago. I consider myself truly fortunate to be part of such an inspiring and supportive group of scientists, and to be recognized by this incredible community means the world to me.*

**Christopher Kenseth**

2024 Friedlander Dissertation Award