Joseph C. Hermanowicz

Curriculum Vitae

Address

Department of Sociology The University of Georgia Athens, GA 30602-1611 USA Tel: 001 + (706) 542-3129 Fax: 001 + (706) 542-4320 E-mail: jch1@uga.edu

Appointments

Professor of Sociology, The University of Georgia, 2012-present

Adjunct Professor, Institute of Higher Education, The University of Georgia, 2013-present

Affiliate Faculty, Interdisciplinary Qualitative Studies, The University of Georgia, 2012-present

Associate Professor of Sociology, The University of Georgia, 2006-2012

Assistant Professor of Sociology, The University of Georgia, 1999-2006

Fellow, Institute of Higher Education, The University of Georgia, 2002-2013

Senior Research Analyst, The University of Chicago, 1998-1999

Research Analyst, The University of Chicago, 1997-1998

Lecturer on Sociology and on the Social Sciences, The University of Chicago, 1996

Robert E. Park Lecturer on Sociology, The University of Chicago, 1995-1996

Research Intern, Division of Policy Analysis and Research, American Council on Education, Washington, D.C., 1991

Education

Ph.D. 1993-1996, Sociology, The University of Chicago

A.M. 1991-1993, Sociology, The University of Chicago

A.B. 1987-1990 (Honors), Sociology, The University of Chicago

Awards/Honors

Sandy Beaver Award for Excellence in Teaching, University of Georgia, 2013

Professor Recognition Award, Student Government Association, University of Georgia, 2012

University of Georgia Career Center, Career Development of Students Award, 2006, 2012, 2014

Outstanding Publication Award, 2010, Section on Aging and the Life Course, American Sociological Association, for *Lives in Science: How Institutions Affect Academic Careers* (University of Chicago Press, 2009)

Top Ten Book of the Year, 2009, *Physics World*, for *Lives in Science: How Institutions Affect Academic Careers* (University of Chicago Press, 2009)

Center for Humanities and the Arts Research Fellowship, University of Georgia, 2005-2006

Lilly Teaching Fellow, University of Georgia, 2001-2003

Who's Who in America
Who's Who in American Education

Research Areas

Higher Education Professions/Occupations/Careers Organizational Culture Sociology of Science Sociology of the Life Course

Courses Taught

Sociology of Occupations; Sociology of Higher Education; Sociology of Education; The U.S. Professoriate; Challenges Facing College Students (as of AY17-18); Sociology of the Life Course; Qualitative Methods of Social Research; Culture and Social Institutions; Interaction, Community, and Culture; Wealth, Power, and Virtue

Books (* indicates externally peer reviewed publications)

*Joseph C. Hermanowicz. 2009. Lives in Science: How Institutions Affect Academic Careers. Chicago: University of Chicago Press.

*Joseph C. Hermanowicz. 1998. *The Stars Are Not Enough: Scientists—Their Passions and Professions*. Chicago: University of Chicago Press.

Edited Book

*Joseph C. Hermanowicz (ed.). 2011. *The American Academic Profession: Transformation in Contemporary Higher Education*. Baltimore: Johns Hopkins University Press.

Monograph

*Joseph C. Hermanowicz. 2003. *College Attrition at American Research Universities: Comparative Case Studies*. New York: Agathon.

Articles & Chapters

Joseph C. Hermanowicz. 2018. "The Professoriate in International Perspective." In Michael B. Paulson (ed.), *Higher Education: Handbook of Theory and Research*, xxx-xxx. Cham, Switzerland: Springer.

David R. Johnson and Joseph C. Hermanowicz. 2017. "Peer Review: From 'Sacred Ideals' to 'Profane Realities'." In Michael B. Paulson (ed.), *Higher Education: Handbook of Theory and Research*, xxx-xxx. Cham, Switzerland: Springer.

*Joseph C. Hermanowicz. 2016. "Faculty Perceptions of Their Graduate Education." *Higher Education* 72(3):291-305.

Joseph C. Hermanowicz. 2016. "The Proliferation of Publishing: Economic Rationality and Ritualized Productivity in a Neoliberal Era." (Special Issue on Journals in Sociology.) *The American Sociologist* 47(2):174-191.

*Joseph C. Hermanowicz. 2016. "Honor in the Academic Profession: How Professors Want to be Remembered by Colleagues." *Journal of Higher Education* 87(3):363-389.

*Joseph C. Hermanowicz. 2016. "Universities, Academic Careers, and the Valorization of 'Shiny Things." In Elizabeth Popp Berman and Catherine Paradeise (eds.), *Research in the Sociology of Organizations* 43:303-328.

Joseph C. Hermanowicz. 2016. "Longitudinal Qualitative Research." In Jeylan T. Mortimer, Michael J. Shanahan, and Monica Kirkpatrick Johnson (eds.), *Handbook of the Life Course*, Second Edition, 491-513. Cham, Switzerland: Springer.

- *Joseph C. Hermanowicz. 2014. "Peak Performance in Academic Science." *Sociology of Science and Technology* 5(1):80-96.
- Joseph C. Hermanowicz and David R. Johnson. 2014. "Professions." In Masamichi Sasaki, Jack Goldstone, Ekkart Zimmermann, and Stephen K. Sanderson (eds.), *Concise Encyclopedia of Comparative Sociology*, 209-216. Boston and Leiden: Brill.
- *Joseph C. Hermanowicz. 2013. "The Culture of Mediocrity." *Minerva* 51:363-387.
- *Joseph C. Hermanowicz. 2013. "The Longitudinal Qualitative Interview." *Qualitative Sociology* 36(2):189-208.
- Joseph C. Hermanowicz. 2012. "The Sociology of Academic Careers: Problems and Prospects." In John C. Smart and Michael B. Paulsen (eds.), *Higher Education: Handbook of Theory and Research*, 207-248. Dordrecht, The Netherlands: Springer.
- Joseph C. Hermanowicz. 2012. "Science Careers." In William Sims Bainbridge (ed.), *Leadership in Science and Technology*, *Volume 1*, 316-324. Thousand Oaks, CA: Sage.
- Joseph C. Hermanowicz. 2011. "Preface" In *The American Academic Profession: Transformation in Contemporary Higher Education*, xii-xviii. Baltimore: Johns Hopkins University Press.
- *Joseph C. Hermanowicz. 2011. "Anomie in the American Academic Profession." In *The American Academic Profession: Transformation in Contemporary Higher Education*, 216-237. Baltimore: Johns Hopkins University Press.
- Joseph C. Hermanowicz. 2009. "Faculty Perceptions of Work, the Academic Profession, and Universities Across Careers." *Advancing Higher Education* (August, pp. 1-12). TIAA-CREF Institute.
- *Joseph C. Hermanowicz. 2007. "Argument and Outline for the Sociology of Scientific (and Other) Careers." *Social Studies of Science* 37(4):625-646.
- Joseph C. Hermanowicz. 2007. "Professors." In George Ritzer (ed.), *Encyclopedia of Sociology*, 3665-3669. Oxford: Blackwell.
 - 2nd Edition. 2015. In George Ritzer (ed.), *Wiley-Blackwell Encyclopedia of Sociology*.
- *Joseph C. Hermanowicz. 2006. "What Does It Take To Be Successful?" *Science, Technology, and Human Values* 31(2):135-152.
- *Joseph C. Hermanowicz. 2006. "Reasons and Reasoning for Leaving College Among the Academic Elite: Case Study Findings and Implications." *Journal of College Student Retention: Research, Theory, and Practice* 8(1):21-38.

- *Joseph C. Hermanowicz. 2005. "Scientists and Self-Doubt Across Strata of Academic Science." *Research in Higher Education* 46(3):309-326.
- *Joseph C. Hermanowicz. 2005. "Classifying Universities and Their Departments: A Social World Perspective." *Journal of Higher Education* 76(1):26-55.
- *Joseph C. Hermanowicz. 2004. "The College Departure Process Among the Academic Elite." *Education and Urban Society* 37(1):74-93.
- *Joseph C. Hermanowicz. 2003. "Scientists and Satisfaction." *Social Studies of Science* 33(1):45-73.
- *Joseph C. Hermanowicz. 2002. "In the Shadows of Giants: Identity and Institution Building in the American Academic Profession." In Richard A. Settersten, Jr. and Timothy J. Owens (eds.), *Advances in Life Course Research*, *Vol. 7: New Frontiers in Socialization*, 133-162. London: Elsevier.
- *Joseph C. Hermanowicz. 2002. "The Great Interview: 25 Strategies for Studying People in Bed." *Qualitative Sociology* 25(4): 479-499.
 - 2014. "Approaches to Data Collection." In Antonia Lyons and Poul Rohleder, Qualitative Research in Clinical and Health Psychology. Hampshire, UK: Palgrave Macmillan. (Adaptation)
 - 2010. In W. Paul Vogt (ed.), *Data Collection*, Volume 2, Section 3. London: Sage.
- *Joseph C. Hermanowicz and Harriet P. Morgan. 1999. "Ritualizing the Routine: Collective Identity Affirmation." *Sociological Forum* 14(2):197-214.
- *Joseph C. Hermanowicz. 1998. "The Presentation of Occupational Self in Science." *Qualitative Sociology* 21(2):129-148.

Current Projects

- The Social Organization of Contemporary Careers in Sociology (with Kristen Clayton)
- Undergraduate Grades Across the U.S. University (with David Woodring)
- The Sociology of Exaggeration
- More Thoughts on "The Culture of Mediocrity"

- "Academic Freedom: Problems and Perspectives of the Twenty-First Century"
- "The Perversion of Virtue: Causes and Consequences of Change in Contemporary Academic Freedom"
 (with Erika Hermanowicz)
- "Academic Freedom Around the World"

Reviews

Joseph C. Hermanowicz. 2015. Review of *Professors and Their Politics* (Johns Hopkins University Press) edited by Neil Gross and Solon Simmons. In *American Journal of Sociology* 121(3):983-985.

Joseph C. Hermanowicz. 2015. "The Sociological Mind at Work and Play." Review Essay, *What about Mozart? What about Murder? Reasoning from Cases* (University of Chicago Press) by Howard S. Becker. In *Contemporary Sociology* 44(4):472-475.

Joseph C. Hermanowicz. 2014. Review of *Dynamics of the Contemporary University: Growth, Accretion, and Conflict* (University of California Press) by Neil J. Smelser. In *Contemporary Sociology* 43(5):739-741.

Joseph C. Hermanowicz. 2014. Review of *Paying for the Party: How College Maintains Inequality* (Harvard University Press) by Elizabeth A. Armstrong and Laura T. Hamilton. In *Contemporary Sociology* 43(5):656-658.

Joseph C. Hermanowicz. 2013. Review of *Success on the Tenure Track* (Johns Hopkins University Press) by Cathy Ann Trower. In *Teachers College Record*. Published online.

Joseph C. Hermanowicz. 2009. Review of *Intellectuals and the Public Good: Creativity and Civil Courage* (Cambridge University Press) by Barbara A. Misztal. In *Contemporary Sociology* 38(6):526-527.

Joseph C. Hermanowicz. 2009. Review of *Disrupting Science: Social Movements, American Scientists, and the Politics of the Military, 1945-1975* (Princeton University Press) by Kelly Moore. In *American Journal of Sociology* 114(5):1526-1527.

Joseph C. Hermanowicz. 2004. Review of *The Work of the University* (Yale University Press, 2003) by Richard C. Levin. In *The Review of Higher Education* 27(4):579-580.

Joseph C. Hermanowicz. 1999. Review of *Science Incarnate: Historical Embodiments of Natural Knowledge* (University of Chicago Press) by Christopher Lawrence and Steven Shapin (eds.). In *American Journal of Sociology* 104(5):1534-1536.

Joseph C. Hermanowicz. 1996. Review of *Gender Differences in Science Careers* (Rutgers University Press) by Gerhard Sonnert and Gerald Holton. In *American Journal of Sociology* 101(4):1133-1135.

Other Publications

Joseph C. Hermanowicz. 2009. "A Physicist's Life-Cycle." Physics World 22(9):42-43.

Joseph C. Hermanowicz. 2009. "The Faculty of the Future: Leaner, Meaner, More Innovative, Less Secure." (Contributor to Forum Essays.) *Chronicle of Higher Education* (July 10, 2009), Vol. LV, No. 41, Section B, 26-27.

Grants

"How Does One's Graduate Education Look Years Later?" President's Venture Fund, The University of Georgia. \$1,000. 2013.

"Performance, Perception, and Legitimation in Academic Science." Office of the Provost, The University of Georgia. \$5,000. 2012.

"A New Reward System in Academic Science?" National Science Foundation Dissertation Improvement Grant. PI for David R. Johnson, Co-PI. \$10,000. 2010.

"Wither the American Academic Profession? Its Changing Forms and Functions." State of the Art Conference, The University of Georgia. Office of the Provost: \$15,560; President's Venture Fund: \$4,640; Department of Sociology \$750; Institute of Higher Education \$2,000; Franklin College of Arts and Sciences \$2,000. Total: \$24,950. 2008.

"Following Scientists: Insights on Careers, the Academic Profession, and American Universities." Office of the Vice President for Research, The University of Georgia. \$2,232. 2006.

"Following Scientists: Insights on Careers, the Academic Profession, and American Universities." President's Venture Fund, The University of Georgia. \$905. 2006.

"Lives of Learning: Following Academics in Their Careers." TIAA-CREF Institute. \$10,022. 2005-2006.

"Lives of Learning: Continuity and Change in Scientific Careers." Office of the Provost, The University of Georgia. \$1,000. 2004.

"Profiles of Passage Through the College Freshman Year." University of Georgia Research Foundation. \$5,333. 2003.

"Aspirations of Academic Scientists." National Science Foundation Dissertation Improvement Grant, SBR-95-01420. \$7,500. 1995.

Conference Papers/Organized Sessions

"The Proliferation of Publishing in Academic Work." 2016. American Sociological Association, Seattle, Washington.

"The Promise of Longitudinal Qualitative Research." (Invited) 2015. Society for Longitudinal and Life Course Studies. Dublin, Ireland.

"The Effects of Academic Capitalism on Academic Careers." 2015. Consortium of Higher Education Researchers. Lisbon, Portugal.

"Universities, Academic Careers, and the Valorization of 'Shiny Things." (Invited) 2015. Alexander von Humboldt Foundation/Northeastern University, Boston, Massachusetts.

"The Post-Self in Science." 2014. American Sociological Association, San Francisco, California.

"Colleagues and Quests for Immortality." 2014. XVIII International Sociological Association World Congress, Yokohama, Japan.

"How Does One's Graduate Education Look Years Later?" 2013. Consortium of Higher Education Researchers. Lausanne, Switzerland.

Organizer and Presider, "Longitudinal Qualitative Research." 2012. International Conference on Social Science Methodology. Sydney, Australia.

"The Longitudinal Qualitative Interview." 2012. International Conference on Social Science Methodology. Sydney, Australia.

"Performance, Perception, and Legitimation in Academic Science." 2012. International Sociological Association Forum of Sociology. Buenos Aires, Argentina.

"Anomie in Academic Science." 2010. Society for Social Studies of Science. Tokyo, Japan.

"The Culture of Mediocrity." 2010. XVII International Sociological Association World Congress, Gothenburg, Sweden.

"Anomie in the Academic Profession." 2010. XVII International Sociological Association World Congress, Gothenburg, Sweden.

"A Physicist's Life Cycle." 2010. Department of Physics and Astronomy, University of Georgia, Athens, GA.

Presider, Roundtable, "Academic Departments and Disciplines." 2009. American Sociological Association, San Francisco, California.

"The Punishment of the Adept." 2008. American Sociological Association. Boston, Massachusetts.

Conference Organizer, "Wither the American Academic Profession? Its Changing Forms and Functions." 2008. Co-sponsored, Department of Sociology & Institute of Higher Education, University of Georgia, Athens, Georgia.

(with Karen Webber and Ning Wang) "The Effect of Motivation on the College Environment and Student Achievement: A Structure Equation Model." 2008. Association for Institutional Research. Seattle, Washington.

"Following Academics in Their Careers." 2007. Association for the Study of Higher Education, Louisville, Kentucky.

Co-Organizer and Co-Presider (with Scott L. Thomas), Regular Session on "Sociology of Higher Education." 2006. American Sociological Association, Montreal, Quebec.

"Following Scientists: Insights on Careers, the Academic Profession, and American Universities." 2006. XVI International Sociological Association World Congress, Durban, South Africa.

Presider, Session on "The Academic Workplace: Postsecondary Faculty Job Satisfaction, Equity, Collaboration and Institutional Climates." 2006. American Educational Research Association, San Francisco, California.

"Argument and Outline for the Sociology of Academic Careers: Why Study Them?" 2005. Conference on Faculty Careers and Faculty Development, Institute of Higher Education, University of Georgia, Athens, Georgia.

"Scientists and Self-Doubt Across Strata of Academic Science." 2004. American Sociological Association, San Francisco, California.

"The Sociology of Academic Careers." 2003. Invited Paper, Association for the Study of Higher Education, Portland, Oregon.

Invited Scholar and Discussant. 2003. Spencer Foundation Fellows, Fall Forum. Emory University, Atlanta, Georgia.

"What Does It Take To Be Successful?" 2003. American Sociological Association, Atlanta, Georgia.

"The Great Interview: 25 Strategies for Studying People in Bed." 2002. American Sociological Association, Chicago, Illinois.

"College Attrition at American Research Universities." 2002. Institute of Higher Education, University of Georgia, Athens, Georgia.

"College Attrition at American Research Universities: Comparative Case Studies." 2000. American Sociological Association, Washington, D.C.

"Scientists and Satisfaction: Exploring the Underside of a Profession." 2000. Invited Presentation, American Educational Research Association, New Orleans, Louisiana.

Organizer and Presider, Regular Session on "Careers." 1999. American Sociological Association, Chicago, Illinois.

"The Drop-out Process Among the Academic Elite: Case Study Findings and Implications." 1999. American Educational Research Association, Montreal, Quebec.

Presider, Refereed Roundtable, Women in Higher Education. 1998. American Sociological Association, San Francisco, California.

"College Students and Their Parents: Select Findings from Paired Comparisons." 1998. Consortium on Financing Higher Education, Clearwater Beach, Florida.

Presider and Discussant, Section on Narrative Approaches to Self and Identity. 1996. American Sociological Association, New York, New York.

"The Narrative Construction of Professional Self-Identity." 1996. American Sociological Association, New York, New York.

"The Social Context of Aspiration Among Scientists." 1994. American Sociological Association, Los Angeles, California.

Co-presider and Co-discussant (with H.P. Morgan), Section on Ritual and Ceremony. 1993. American Sociological Association, Miami Beach, Florida.

"The Ritual Celebration of Everyday Life." 1993. American Sociological Association, Miami Beach, Florida.

"The Refuge in Their Lives: Work/Family Relationships Among Young Academic Professionals." 1992. Midwest Sociological Society, Kansas City, Missouri.

Reports

"College Attrition at American Research Universities: Comparative Case Studies." 1999. The University of Chicago.

"Looking Back: Attitudes of College Seniors Toward School." 1998. Research Report No. 98-02, The University of Chicago.

"College Attrition at Chicago." 1998. Research Report No. 98-01, The University of Chicago.

"Parent Satisfaction at Chicago: Report on the COFHE Parents Survey." 1997. Research Report No. 97-02a&b, The University of Chicago.

"Student Satisfaction at Chicago: Report on the COFHE College Student Experiences Questionnaire." 1997. Research Report No. 97-01a&b, The University of Chicago.

"Studying Career Choice: A Pilot Study. Report to the Alfred P. Sloan Foundation, Volume I," Charles E. Bidwell, Mihaly Csikszentmihalyi, Larry Hedges, and Barbara Schneider. 1992. (Contributor). The Sloan Foundation Study of Adolescent and Young Adult Social Development.

"Report on the Interview Process of Sexual Behavior Surveys." 1992. National Opinion Research Center Report.

Service

To the Field:

Reviewer:

Advances in Life Course Research, American Journal of Sociology, American Sociological Review, British Journal of Industrial Relations, Higher Education, Higher Education Quarterly, Human Relations, Journal of Higher Education, Journal of Higher Education Outreach and Engagement, Journal of Policy Analysis and Management, Minerva, PLOS One, Qualitative Sociology, Research Evaluation, Research in Higher Education, Research in the Sociology of Organizations, Science Communication, Science and Public Policy, Science, Technology, and Human Values, Social Forces, Social Problems, Social Science Quarterly, Social Studies of Science, Sociological Forum, Sociological Inquiry, Sociological Perspectives, Sociological Quarterly, Sociological Theory, Sociology of Education, Urban Education.

Cambridge University Press, Harvard University Press, Johns Hopkins University Press, MIT Press, Oxford University Press, Sage, Stanford University Press, Vanderbilt University Press.

Member, Advisory Editorial Board, Society, 2012-

Member, Editorial Board, *Qualitative Sociology*, 2011-Consulting Editor, *Journal of Higher Education*, 2012-2016 Member, Editorial Board, *Contemporary Sociology*, 2012-2015 Consulting Editor, *American Journal of Sociology*, 2009-2011 Member, Editorial Board, *Sociology of Education*, 2006-2009

Reviewer, American Educational Research Association, Annual Meeting (ad hoc)
Reviewer, Association for the Study of Higher Education, Annual Meeting (ad hoc)
Reviewer, National Science Foundation (Sociology; Science, Technology, and Society)
Reviewer, Social Sciences and Humanities Research Council of Canada
Reviewer, United States-Israel Binational Science Foundation
Reviewer, National Science Centre—Poland

Nominations Committee, Section on Aging and the Life Course, American Sociological Association, 2016-2017

Graduate Student Paper Award Committee (Chair), Section on Aging and the Life Course, American Sociological Association, 2015-2016

Nominations Committee, Section on the Sociology of Education, American Sociological Association, 2012-2013

Max Weber Award for Distinguished Scholarship Committee, Section on Organizations, Occupations, and Work, American Sociological Association, 2012-2013

Robert K. Merton Award Committee, Section on Science, Knowledge, and Technology, American Sociological Association, 2005-2006

To Departments:

Department of Sociology, University of Georgia, Committees:

| Executive Committee | 2007-2008 |
|----------------------------------|---|
| | 2003-2004 |
| Compensation Committee | 2008 |
| Graduate Program Committee | 2015-2016 |
| | 2010-2011 |
| | 2009-2010 |
| | 2008-2009 |
| Assessment Committee | 2002-2003 |
| Colloquium Committee | 2011-2012 (Chair) |
| | 2001-2002 (Chair) |
| | 1999-2000 |
| Recruitment Committee | 2011-2012 |
| | 2000-2001 (2) |
| Post-Tenure Review Committees | 2008, 2012, 2013(Chair), 2013(Chair), 2013(Chair) |
| External Awards Committee | 2014-2015 |
| Work, Occupations, Organizations | |
| Graduate Area Committee | 2007 (Chair) |
| | 2001 (Chair) |

To the University of Georgia:

Member, Program Review and Assessment Committee, 2015-2017

Member, University Council, 2009-2012

Member, Executive Committee, University Council, 2009-2012

President of the Faculty Senate, Franklin College of Arts and Sciences, 2008-2009

Member, Faculty Senate, Franklin College of Arts and Sciences, 2006-2009

Member, Academic Standards Committee, Franklin College of Arts and Sciences, 2006-2007;

2007-2008 (Chair)

Member, Search Committee, Director of the Ctr. for Teaching and Learning, 2005-2006

Student Committees:

| Lauren King | Ph.D. | In Progress (Educational Theory and Practice) |
|---|-------|--|
| Phillip Grant | Ph.D. | In Progress (Lifelong Education, Admin., and Policy) |
| Kristen Clayton | Ph.D. | In Progress |
| | M.A. | 2014 |
| Jeffrey Patterson | M.A. | In Progress |
| Matthew May | Ph.D. | 2015 |
| Philip Lewin | Ph.D. | 2014 |
| Christen Bradley | Ph.D. | 2013 |
| Rebecca Boylan | M.A. | 2012 |
| David Johnson | Ph.D. | 2011—Chair |
| *Winner, National Science Foundation Dissertation Improvement Grant | | |

Association for the Study of Higher Education

Michael Ramirez Ph.D. 2007

Ph.D. 2006—Chair Lorraine Evans

*Winner, AERA/Spencer Foundation Fellowship

M.A. 2001—Chair

Katherine Stamps M.A. 2005 Jessie Johnson M.A. 2005 Diana Wall Ph.D. 2003 Heath Hoffman Ph.D. 2002 Suzanne Baker M.A. 2002 Tucker Bartholomew Ph.D. 2001 Todd Bayma Ph.D. 2001 J. Aaron Johnson Ph.D. 2000

Professional Associations

American Sociological Association (ASA) International Sociological Association (ISA)

^{*}Winner, 2012 Bobby Wright Dissertation of the Year Award,

Association for the Study of Higher Education (ASHE) American Association of University Professors (AAUP) American Association for the Advancement of Science (AAAS)