

Resources for early-career scientists

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This document contains information I have compiled in my role as Chair of ACCESS (the Atmospheric Chemistry Colloquium for Emerging Senior Scientists, <https://www.bnl.gov/accesscolloquium/>) on career resources, job listings, scholarships, fellowships, early-career awards, grants, better scientific writing and presentations, and related topics for students and early-career scientists in the geosciences, especially the atmospheric sciences, although much of the information is applicable to a wider audience. I have checked each of the links and to the best of my knowledge they are still valid. This is by no means a comprehensive listing, and a web search will provide many other sites. Please share this information with anyone you think might be interested. Thanks to those who assisted with providing links and information, especially Dr. Hannah Horowitz at University of Illinois at Urbana and Champaign.

Additional information, including information on proposal writing and how the major agencies fund research in atmospheric chemistry, is available for download from Dropbox at <https://www.dropbox.com/sh/69eunsa8yw32t8/AABIyfZmMyAnB09JOyexGfCna?dl=0> or Microsoft OneDrive at <https://1drv.ms/u/s!AphFrHL1e8dWgXRKr-hh18dZats?e=hSGmPH>.

For any comments or questions, contact me at elewis@bnl.gov.

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Resources for Professional Development

The Earth Science Women's Network (ESWN) at <http://eswnonline.org/> has a resource center at <https://eswnonline.org/online/eswn-resources/> that has been developed to provide a clearing house of professional and personal resources for members and to the broader earth science community. They also run the Earth Sciences Job email list at http://mailman.ucar.edu/mailman/listinfo/es_jobs_net to which one can subscribe, post a job opportunity, or view the archives.

The American Meteorological Society (AMS) has a resource center with information on education, careers, professional development, networking opportunities, and other information at <https://www.ametsoc.org/ams/index.cfm/education-careers/career-resources/>.

The American Geophysical Union (AGU) has information on professional and career development at <https://careers.agu.org/agu-pathfinder/>.

Penn State Department of Meteorology and Atmospheric Sciences has a career webpage at <http://www.met.psu.edu/careers/> with career resources at <http://www.met.psu.edu/careers/career-resources> including advice and tips for getting a job at <http://www.met.psu.edu/careers/advice-and-tips-for-getting-a-job>.

Physics Today has a careers toolbox for undergraduate physics students at <https://www.spsnational.org/sites/all/careerstoobox/> with information on interviewing and networking and recorded webinars on career development at <https://www.aip.org/jobs/webinars>.

The American Association for the Advancement of Science (AAAS) has career tools for science professionals at <https://www.aaas.org/careers#sciCareers>.

Science Magazine has information on science careers at <https://www.sciencemag.org/careers>.

The Institute for Broadening Participation (IBP)'s Pathways to Science website at <https://pathwaystoscience.org> has resources, webinars, and a variety of other resources for STEM students and faculty.

The American Association for Aerosol Research (AAAR) has a website with numerous links related to aerosols and atmospheric chemistry at <https://www.aaar.org/resources/related-links/>.

The Science Education Resource Center (SERC) at Carleton College and the National Association of Geoscience Teachers (NAGT) have a vast amount of information for career development at all levels, including graduate students and postdocs, early-career faculty members, mid-career faculty members, and workshops at https://serc.carleton.edu/serc/site_guides/career.html and https://serc.carleton.edu/serc/site_guides/index.html.

The Career & Internship Center of the University of Washington has many resources available on academic careers, from applying as a postdoc through starting as an assistant professor: <https://careers.uw.edu/academic-careers/>.

The American Chemical Society has resources on its website:

<https://www.acs.org/content/acs/en/education/students/graduate/gettingready.html>.

Job Lists

Earth Science Women's Network runs the Earth Sciences Job email list at http://mailman.ucar.edu/mailman/listinfo/es_jobs_net to which one can subscribe, post a job opportunity, or view the archives at http://mailman.ucar.edu/pipermail/es_jobs_net/.

Dr. Jose Jimenez of the University of Colorado at Boulder (jose.jimenez@colorado.edu) maintains a twitter feed of jobs in atmospheric chemistry and aerosols at <https://twitter.com/AtmChemAeroJobs>.

American Meteorological Society (AMS) lists of jobs: <https://careercenter.ametsoc.org/jobseeker/search/results/> and <https://www.ametsoc.org/index.cfm/ams/education-careers/careers/jobs-and-internships/>.

American Geophysical Union (AGU) list of jobs: <https://findajob.agu.org>.

Penn State Department of Meteorology and Atmospheric Sciences list of jobs in meteorology and atmospheric sciences: <http://www.met.psu.edu/careers/job-listings/all-job-listings>.

American Association for Aerosol Research (AAAR) job list: <https://www.aaar.org/resources/career-opportunities/>.

GEWEX Career & Training Opportunities webpage: <https://www.gewex.org/resource/position-announcements/>.

Climate and Ocean – Variability, Predictability, and Change (CLIVAR) jobs list: <http://www.clivar.org/Resources/jobs>.

The European Association of Geochemistry (EAG) jobs list: <https://eag.eu.com/jobs/>.

Information on jobs in the US federal government: <https://www.usajobs.gov>.

Science, university, and research jobs in Europe: <https://www.universitypositions.eu>.

Academic jobs in the UK: <https://www.jobs.ac.uk>.

Canadian Chemistry Faculty Positions: <http://chempostingscanada.blogspot.ca/>.

American Chemical Society (ACS) list of jobs: <https://communities.acs.org/community/profession/job-postings>.

Employment opportunities through the US Department of Energy (DOE)'s Atmospheric System Research (ASR) program: <https://asr.science.energy.gov/news/jobs>.

Employment opportunities in the US Environmental Protection Agency (EPA): <https://epa.usajobs.gov/Search?k=%22environmental%20protection%20agency%22>.

Jobs at the National Aeronautics and Space Administration (NASA):
<https://nasajobs.nasa.gov/default.htm>.

Physics Today list of jobs: <https://jobs.physicstoday.org>.

US Naval Research Laboratory (NRL) jobs: <http://www.nrl.navy.mil/careers/>.

University Corporation for Atmospheric Research (UCAR) job openings:
https://ucar.silkroad.com/epostings/index.cfm?version=1&company_id=15947.

American Association for the Advancement of Science list of jobs:
<https://jobs.sciencecareers.org/>.

Association for the Sciences of Limnology and Oceanography (ASLO) job site:
<https://aslo.users.membersuite.com/community/career-center/browse-jobs/allJobs/allCities/allStates>.

Young Earth System Scientists Community links of joblists: <https://www.yess-community.org/resources/joblists/>.

General Information on Scholarships and Fellowships

Scholarships and grants for college students: <http://usascholarships.com>.

National Academies of Science, Engineering, and Medicine Research Associateship Programs: <http://sites.nationalacademies.org/pga/rap/>.

US Department of Energy (DOE) Internships, Fellowships, & Research Opportunities: <https://orise.orau.gov/stem/internships-fellowships-research-opportunities/index.html>.

US Department of Energy (DOE) Scholars Program: <https://orise.orau.gov/doescholars/>.

National Aeronautics and Space Administration (NASA) Internships, Fellowships, and Scholarships: <https://intern.nasa.gov>.

National Oceanographic and Atmospheric Administration (NOAA) opportunities for students, including scholarships, internships, fellowships and post-doctoral experiences, are listed at <https://www.noaa.gov/education/opportunities/student-opportunities>.

Environmental Protection Agency (EPA) Fellowships, Scholarships, and Post-doctoral Opportunities: <https://www.epa.gov/careers/fellowships-scholarships-and-post-doctoral-opportunities>.

American Meteorological Society (AMS) scholarships and Fellowships: <https://www.ametsoc.org/index.cfm/ams/information-for/students/ams-scholarships-and-fellowships/>

American Geophysical Union (AGU) Travel and Research Grants: https://agu.secure-platform.com/a/?utm_source=aguniverse&utm_medium=email&utm_campaign=043020.

International Global Atmospheric Chemistry (IGAC) Project awards early career travel grants to numerous IGAC events held throughout the year and its biennial science conference. In addition, IGAC hosts an early career short course prior to its biennial science conference modeled after ACCESS, but with more of a focus on the international community. Information is available at <http://igacproject.org/igac-early-career-program>.

United States Geological Survey (USGS) opportunities for students and recent graduates: <http://education.usgs.gov/careers.html>.

UK scholarships: <https://lsa.umich.edu/onsf/scholarships/united-kingdom.html>.

Fulbright Grants in STEM: <http://us.fulbrightonline.org/about/types-of-awards/study-research>.

The Pat Tillman Foundation Scholarship: <https://pattillmanfoundation.org/apply-to-be-a-scholar/>.

The Paul & Daisy Soros Fellowship for New Americans Scholarship: <https://www.pdsoros.org>.

American Chemical Society (ACS) Scholarships: <https://www.acs.org/content/acs/en/funding-and-awards/scholarships.html>.

American Physical Society Internships and Fellowships:
<https://www.aps.org/careers/employment/internships.cfm>.

The Institute for Broadening Participation (IBP)'s Pathways to Science has a list of programs and fellowships at <https://pathwaystoscience.org/Programs.aspx>.

Undergraduate Scholarships and Fellowships

National Science Foundation (NSF) Research Experiences for Undergraduate (REU) program: https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5517.

US Department of Energy (DOE) Science Undergraduate Laboratory Internship (SULI) program: <https://science.osti.gov/wdts/suli>.

US Department of Energy (DOE) Scholars Program: <https://orise.orau.gov/doescholars/>.

US Naval Research Laboratory (NRL) Naval Research Enterprise Internship Program (NREIP): <https://nreip.asee.org>.

US Naval Research Laboratory (NRL) HBCU/MI Internship Program: <https://www.onr.navy.mil/Education-Outreach/undergraduate-graduate/NRL-HBCU-MI-Undergraduate-Internship>.

The Naval Air Systems Command (NAVAIR) Internship Program: <https://www.onr.navy.mil/Education-Outreach/undergraduate-graduate/NAVAIR-summer-internship>.

National Oceanographic and Atmospheric Administration (NOAA) Ernest F. Hollings Undergraduate Scholarship: <http://www.noaa.gov/office-education/hollings-scholarship>.

National Aeronautics and Space Administration (NASA) Internships, Fellowships, and Scholarships: <https://intern.nasa.gov>.

American Meteorology Society (AMS) Freshman Undergraduate Scholarships: <https://www.ametsoc.org/index.cfm/ams/information-for/students/ams-scholarships-and-fellowships/ams-freshman-undergraduate-scholarship/>.

American Meteorological Society (AMS) Senior Named Scholarships: <https://www.ametsoc.org/index.cfm/ams/information-for/students/ams-scholarships-and-fellowships/ams-senior-named-scholarships/>.

United States Geological Survey (USGS) summer intern positions: <http://education.usgs.gov/careers.html>.

The Barry Goldwater Scholarship: <https://goldwater.scholarsapply.org>.

Astronaut Scholarship Program: <https://www.astronautscholarship.org/scholarshipprogram.html>.

The Institute for Broadening Participation (IBP)'s Pathways to Science has a list of undergraduate programs and resources <https://pathwaystoscience.org/Undergrads.aspx>.

Graduate Scholarships and Fellowships

National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP):
<https://www.nsfgrfp.org>.

National Science Foundation Graduate Research Opportunities Worldwide (GROW):
https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504876&org=NSF.

US Department of Energy (DOE) Office of Science Graduate Research (SCGSR) Program:
<https://science.osti.gov/wdts/scgsr>.

US Department of Energy (DOE) Scholars Program: <https://orise.ornl.gov/doescholars/>.

National Aeronautics and Space Administration (NASA) Opportunities for Graduate Students:
<https://science.nasa.gov/researchers/sara/fellowship-programs#gradops>.

National Defense Science and Engineering Graduate (NDSEG) Fellowship Program:
<https://ndseg.asee.org>.

Oak Ridge Institute for Science and Education Graduate Research Opportunities:
<https://orise.ornl.gov/stem/internships-fellowships-research-opportunities/graduates.html>.

University Corporation for Atmospheric Research (UCAR) Next Generation Fellowships:
<https://www.ucar.edu/opportunities/fellowships/ucar-next-generation-fellowships>.

Gilliam Fellowships for Advanced Study: <https://www.hhmi.org/developing-scientists/gilliam-fellowships-advanced-study>.

Hertz Foundation Graduate Fellowship: <http://hertzfoundation.org/fellowships/fellowshipaward>.

Ford Foundation Predoctoral Fellowship:
http://sites.nationalacademies.org/PGA/FordFellowships/PGA_171962.

Ford Foundation Dissertation Fellowship:
http://sites.nationalacademies.org/PGA/FordFellowships/PGA_171939.

Christine Mirzayan Science and Technology Policy Graduate Fellowship Program:
<http://sites.nationalacademies.org/PGA/policyfellows/index.htm>.

American Meteorological Society (AMS) Graduate Fellowships:
<https://www.ametsoc.org/ams/index.cfm/information-for/students/ams-scholarships-and-fellowships/ams-graduate-fellowships/>.

The Institute for Broadening Participation (IBP)'s Pathways to Science has a list of graduate programs and fellowships at <https://pathwaystoscience.org/Grad.aspx>.

The American Chemical Society (ACS) has a list of graduate scholarships and fellowships at <https://www.acs.org/content/acs/en/education/students/graduate/scholarships.html>.

United States Geological Survey (USGS) Graduate Student Preparedness (GSP) program is open to any Ph.D. student who is sponsored by an NSF grant: <https://powellcenter.usgs.gov/national-science-foundation-graduate-research-internship-program-grip>.

Scholarships for Women and Minority Students

Financial Aid Opportunities for Minority Students: <https://www.bestcolleges.com/financial-aid/minority-students/>.

Scholarships and awards for minorities in physics: <https://www.aps.org/programs/minorities/honors/index.cfm>.

American Meteorological Society (AMS) Minority Scholarships: <https://www.ametsoc.org/index.cfm/ams/information-for/students/ams-scholarships-and-fellowships/ams-minority-scholarships/>.

Gilliam Fellowships for Advanced Study: <https://www.hhmi.org/developing-scientists/gilliam-fellowships-advanced-study>.

Wagner Memorial Award for Women in Atmospheric Sciences: <https://www.dri.edu/wagner-award-for-women-in-atmospheric-sciences>.

Out to Innovate Scholarship for LGBT+ Students in STEM: <https://www.noglstp.org/programs-projects/scholarships/>.

US Department of Energy (DOE) Mickey Leland Energy Fellowship (MLEF) program: <https://orise.orau.gov/mlef/default.html>.

National Oceanographic and Atmospheric Administration (NOAA) EPP/MSI Undergraduate Scholarship Program (for minority-serving institutions): <http://www.noaa.gov/opportunities/eppmsi-undergraduate-scholarship-program>.

US Naval Research Laboratory HBCU/MI Internship Program: <https://www.onr.navy.mil/Education-Outreach/undergraduate-graduate/NRL-HBCU-MI-Undergraduate-Internship>.

American Chemical Society (ACS) Scholars Program to underrepresented minority students: <https://www.acs.org/content/acs/en/funding-and-awards/scholarships/acsscholars.html>.

University Corporation for Atmospheric Research (UCAR) Next Generation Fellowships: <https://www.ucar.edu/opportunities/fellowships/ucar-next-generation-fellowships>.

American Geophysical Union (AGU) Ethics & Equity Center access to free legal consultation for harassment, bullying, or discrimination: <https://ethicsandequitycenter.org/free-legal-consultation/>.

National GEM Consortium Fellowship Program: <https://www.gemfellowship.org/students/gem-fellowship-program/>.

Postdoctoral Fellowships

National Science Foundation (NSF) Special Programs for Postdoctoral Fellows:

https://www.nsf.gov/funding/education.jsp?fund_type=3.

National Science Foundation (NSF) Atmospheric and Geospace Sciences Postdoctoral Research Fellowships: https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=12779&org=NSF.

Department of Energy (DOE) Postdoctoral Research Fellowships:

<https://orise.orau.gov/stem/internships-fellowships-research-opportunities/postdocs.html>.

National Aeronautics and Space Administration (NASA) Postdoctoral Program:

<https://npp.usra.edu>.

Environmental Protection Agency (EPA) Postdoctoral Fellowships:

<https://www.epa.gov/careers/fellowships-scholarships-and-post-doctoral-opportunities>.

National Oceanographic and Atmospheric Administration (NOAA) Climate & Global Change Fellowship: <https://cpaess.ucar.edu/cgc/>.

CIRES Visiting Fellows Program: <https://cires.colorado.edu/about/institutional-programs/visiting-fellows-program>.

National Center for Atmospheric Research (NCAR) Advanced Study Program (ASP)

Postdoctoral Fellowship Program: <https://asp.ucar.edu/postdocs/postdoctoral-fellowship-program>.

National Research Council (NRC) and Naval Research Laboratory (NRL) Cooperative Research Associateship Program: <https://www.nrl.navy.mil/careers/post-doc/nrc/>.

US Naval Research Laboratory (NRL) Postdoctoral Fellowship Program: <https://nrl.asee.org>.

American Association for the Advancement of Science (AAAS) Science & Technology Policy Fellowships: <https://www.aaas.org/programs/science-technology-policy-fellowships>.

L’Oreal for Women in Science Postdoctoral Program: <http://www.lorealusa.com/csr-commitments/l’oreal-usa-for-women-in-science-program>.

Ford Foundation Postdoctoral Fellowship Program:

http://sites.nationalacademies.org/PGA/FordFellowships/PGA_171940.

Humboldt Research Fellowship for Postdoctoral Researchers: <https://www.humboldt-foundation.de/web/humboldt-fellowship-postdoc.html>.

The Institute for Broadening Participation (IBP)’s Pathways to Science has a list of postdoctoral positions at https://pathwaystoscience.org/Postdocs_Portal.aspx.

United States Geological Survey (USGS) Mendenhall Postdoctoral Research Fellowship Program: apply at www.usgs.gov/mendenhall; a list of research opportunities is available at <https://www.usgs.gov/centers/mendenhall/research-opportunities>.

National Ecological Observatory Network (NEON) Postdoctoral Fellowship program: forthcoming at NEONScience.org.

Early-career Awards

Presidential Early Career Awards for Scientists and Engineers:

<https://www.nsf.gov/awards/pecase.jsp>.

Department of Energy (DOE) Early Career Research Program: <https://science.osti.gov/early-career>.

American Association for the Advancement of Science (AAAS) Early Career Award for Public Engagement with Science: <https://www.aaas.org/awards/early-career-public-engagement/about>.

Sloan Research Fellowships: <https://sloan.org/fellowships>.

Grants

Information on federal grants can be found at Grants.gov: <https://www.grants.gov>, and [Federalgrants.com](https://www.federalgrants.com).

The major agencies that fund atmospheric research are NASA, NSF, NOAA, DOE, and EPA. Additionally the California Air Resources Board (CARB), and other federal agencies such as the National Institutes of Health (NIH), US Geological Survey (USGS), Office of Naval Research (ONR), and the National Institute of Science and Technology (NIST) also support research on topics that may be directly or indirectly related to the atmospheric sciences. Some websites for these agencies that are relevant to their funding are presented below. However, in the files associated with this resource list (placed on Dropbox and OneNote; see links at top of document), I have summaries of the funding practices of several of the agencies that were provided by the funding managers, who were kind enough to complete a template I sent. I would recommend that those documents are the first place to look.

NASA Solicitation and Proposal Integrated Review and Evaluation System (SPIRES): <https://nspires.nasaprs.com/external/>.

NSF Grants Application Guide: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide.

NOAA Climate Program Office: <https://cpo.noaa.gov/Funding-Opportunities>.

DOE Biological and Environmental Research Funding Opportunity Announcements (FOA): <https://science.osti.gov/ber/Funding-Opportunities>.

EPA Research Grants: <https://www.epa.gov/research-grants>.

CARB Research: <https://ww2.arb.ca.gov/our-work/topics/research>.

NIH funding information: <https://www.nih.gov/grants-funding>.

USGS Climate Adaptation Science Centers (CASC): <https://www.usgs.gov/land-resources/climate-adaptation-science-centers/casc-research-funding-opportunities>.

USGS Environmental Health: <https://www.usgs.gov/mission-areas/environmental-health/about/about-environmental-health-mission-area-programs>.

USGS Mapping, Remote Sensing, and Geospatial Data: <https://www.usgs.gov/science/science-explorer/Mapping%2C+Remote+Sensing%2C+and+Geospatial+Data>.

Climate and Ocean – Variability, Predictability, and Change (CLIVAR) lists funding opportunities at <http://clivar.org/news/funding-opportunities-climate-change-research>.

Future Earth (<https://futureearth.org>) lists funding opportunities at <https://futureearth.org/initiatives/funding-initiatives/>.

Science Organizations for Women and Minorities

The Earth Science Women's Network (ESWN): <http://eswnonline.org/>.

Association for Women in Science: <http://www.awis.org>.

Association for Women Geosciences (AWG): <https://awg.org/index.php>.

Association for Women Geoscientists (AWG), Earth Science Women's Network (ESWN), and the American Geophysical Union (AGU) partnership to address the problem of sexual harassment in the earth, space and environmental sciences (AdvanceGeo): <https://awg.org/AdvanceGeo>.

500 Women Scientists: <https://500womenscientists.org>.

National Society of Black Physicists: <https://www.nsbp.org>.

National Organization for the Professional Advancement of Black Chemists and Chemical Engineers: <https://www.nobccche.org>.

Society for Advancement of Hispanics/Chicanos and Native Americans in Science: <https://www.sacnas.org>.

Latin America Early Career Earth System Scientist Network: <http://laearlycareer.wixsite.com/latinamericaaccess>.

National Organization of Gay and Lesbian Scientists and Technical Professionals: <https://www.noglstp.org>.

Out in Science, Technology, Engineering, and Mathematics: <https://www.ostem.org>.

AGU Ethics & Equity Center: <https://ethicsandequitycenter.org>.

Better Scientific Writing

Norton, F. H. (1920), "The art of writing scientific reports," originally in *Scientific Monthly*, v. 11, December, 1920: <https://www.jstor.org/stable/6710>.

Gopen, G. D., and J. A. (1990), "The science of science writing," *American Scientist*, v. 78: <https://www.americanscientist.org/blog/the-long-view/the-science-of-scientific-writing>.

Claerbout, J. (1995), "Scrutiny of the introduction": <http://sepwww.stanford.edu/sep/prof/Intro.html>.

Wheeler, J. A. (1999), "Wheeler's rules of writing," *American Journal of Physics*, v. 67(11): <https://doi.org/10.1119/1.19169>.

Whitesides, G. M. (2004), "Whiteside's group: Writing a paper," *Advanced Materials*, v. 16: <https://doi.org/10.1002/adma.200400767>.

Sand-Jensen, K. (2006), "How to write consistently boring scientific literature," *Oikos*, v. 116: <https://doi.org/10.1111/j.0030-1299.2007.15674.x>.

Andreas, E. L. (2007), "A new world record," *the Exchange* (newsletter of the Society for Technical Communication's Scientific Communication community), v. 14(2), p. 8: https://people.nwra.com/resumes/andreas/publications/Shen_et_al_only.pdf.

Petkewich, R. A. (2007), "Tips for writing a journal article," *Chemical and Engineering News*, v. 85: <https://cen.acs.org/articles/85/i33/Tips-Writing-Journal-Article.html>.

Carraway, L. N. (2009), "Improve scientific writing and avoid perishing," *American Midland Naturalist*, v. 161: <https://doi.org/10.1674/0003-0031-161.2.361>.

Carraway, L. N. (2009), "Content and organization of a scientific paper," *American Midland Naturalist*, 2009, v. 161: <https://doi.org/10.1674/0003-0031-161.2.371>.

Murray, R. (2011), "Skillful writing of an awful research paper," *Analytical Chemistry*, v. 83: <https://doi.org/10.1021/ac2000169>.

Hites, R. A. (2014), "How to give a scientific talk, present a poster, and write a research proposal," *Environmental Science and Technology*, v. 48: <https://doi.org/10.1021/es503552t>.

Borhen, C. A. (2019), "The curse of knowledge," *European Journal of Physics*, v. 40: <https://doi.org/10.1088/1361-6404/ab1202>.

Better Presentations

Bragg, L., (1966), “The art of talking about science,” *Science*, v. 154:
<https://doi.org/10.1126/science.154.3757.1613>.

Janssen, D. H. (1980), “Plea from a symposium goer,” *Bulletin of the Ecological Society of America*, v. 61: <https://esajournals.onlinelibrary.wiley.com/doi/pdf/10.2307/20166246>.

Garland, J. C. (1991), “Advice to beginning physics speakers,” *Physics Today*, v. 44(7):
<https://doi.org/10.1063/1.881265>.

Pickett, S. T. T., B. E. Hall, and M. L. Pace (1991), “Strategy and checklist for effective scientific talks,” *Bulletin of the Ecological Society of America*, v. 72:
<https://esajournals.onlinelibrary.wiley.com/doi/10.2307/20167240>.

Sigmund, P. (1998), “Fifteen ways to get your audience to leave you,” *Physics Today*, v. 51(8), p. 86 (not available in the Physics Today archives on the website, but worth finding).

Benka, S. G. (2008), “Who is listening? What do they hear?”, *Physics Today*, v. 61(12):
<https://doi.org/10.1063/1.3047683>.

Petkewich, R. A. (2009), “Spectacular scientific talks,” *Chemical and Engineering News*, v. 87:
<https://cen.acs.org/articles/87/i17/Spectacular-Scientific-Talks.html>.

Bingham, R. M. (2010), “Talking the talk: giving oral presentations about mammals for colleagues and general audiences,” *Journal of Mammalogy*, v. 91: <https://doi.org/10.1644/09-MAMM-A-271.1>.

McConnell, S. (2011), “Designing effective scientific presentations”:
<https://www.youtube.com/watch?v=Hp7Id3Yb9XQ>.

Marshall, M. (2012), “Talk nerdy to me”:
https://www.ted.com/talks/melissa_marshall_talk_nerdy_to_me.html.

Hites, R. A. Hites (2014), “How to give a scientific talk, present a poster, and write a research proposal,” *Environmental Science and Technology*, v. 48: <https://doi.org/10.1021/es503552t>.

Wheelwright, M. T. (2014), “Plea from another symposium goer,” *Frontiers in Ecology and the Environment*, v. 12: <https://doi.org/10.1890/14.WB.002>.

Brouk, T. (2018), “To give a great presentation, distill your message to just 15 words,” *Harvard Business Review*, November 7, 2018: <https://hbr.org/2018/11/to-give-a-great-presentation-distill-your-message-to-just-15-words?autocomplete=true>.

Duarte, N., “The secret structure of great talks”:
https://www.ted.com/talks/nancy_duarte_the_secret_structure_of_great_talks.

For posters:

Cooper, P., and J. Galkiewicz (2013), "Epic fail: What a perfectly putrid poster can do for you," EOS, v. 94(46), p. 425: <https://doi.org/10.1002/2013EO460006>.

Miscellaneous

Summer policy colloquium:

The American Meteorological Society organizes a summer policy colloquium:
<https://www.ametsoc.org/index.cfm/ams/policy/summer-policy-colloquium/>.

Workshops on career development:

The Science Education Resource Center (SERC) at Carleton College and the National Association of Geoscience Teachers (NAGT) host a workshop each summer on preparing for an academic career in the geoscience:

<https://serc.carleton.edu/NAGTWorkshops/careerprep/pastworkshops/index.html>.

Obtaining a faculty position:

This is geared to the biomedical sciences, but is more widely applicable:

https://cdn2.hubspot.net/hubfs/306096/4_17_to_6_17/applyingForFacultyPositionAdvice_ES_2017_4_13/Strategies%20for%20Obtaining%20a%20Faculty%20Position%20in%20the%20Biomedical%20Science.pdf?t=1500580592769.

This is geared to the biomedical sciences, but is more widely applicable:

<http://blog.addgene.org/tips-for-getting-a-faculty-position>.

Better CVs and resumes:

Resumes and Cover Letters, by Harvard Extension School:

<https://ocs.fas.harvard.edu/files/ocs/files/hes-resume-cover-letter-guide.pdf>.

CVs and Cover Letters, by Harvard Office of Career Services:

<http://hwpi.harvard.edu/files/ocs/files/gsas-cvs-and-cover-letters.pdf>.

Interviewing:

EOS (Transactions of the American Geophysical Society) articles on interviewing:

<https://eos.org/features/interviewing-101-navigating-the-four-step-process> and

<https://eos.org/features/interviewing-102-questions-about-questions>.

Networking:

Levine, A. G. (2018), "First network. Then follow up," Physics Today, February 9, 2018:

<https://physicstoday.scitation.org/doi/10.1063/PT.6.5.20180209a/full/>.

Career Advice:

Sternberg, R. J. (2015), "Career Advice from an oldish not-quite geezer," Chronicle of Higher Education, May 26, 2015: <https://www.chronicle.com/article/Career-Advice-From-an-Oldish/230335>.

EOS (Transactions of the American Geophysical Society) article on finding a career fit:
<https://eos.org/features/four-steps-to-finding-your-career-fit>.

Patterson, J. D. (2004), "An open letter to the next generation," Physics Today, July, 2004:
<http://doi.org/10/1063/1.1784304>.

Professional Development:

Schiappa, E., "Professional Development during your Doctoral Education":
https://www.natcom.org/sites/default/files/pages/NCA_Career_Center_Professional_Development_During_Your_Doctoral_Education.pdf.

Teaching statements:

Narehood, A. (2016): "Writing the teaching statement," Science:
<https://www.sciencemag.org/careers/2006/04/writing-teaching-statement>.

Cooper, M., "Six tips for writing an effective teaching statement," American Chemical Society:
<https://www.acs.org/content/acs/en/education/students/graduate/six-tips-for-writing-an-effective-teaching-statement.html>.

The Yale Poorvu Center for Teaching and Learning:
<https://poorvucenter.yale.edu/teaching/professional-development/teaching-statements>.

The Division of Teaching and Excellence and Innovation at the University of California Irvine:
<http://dtei.uci.edu/the-reflective-teaching-statement/>.

Research statements:

Cornell University: <https://gradschool.cornell.edu/academic-progress/pathways-to-success/prepare-for-your-career/take-action/research-statement/>.

The Science Education Resource Center (SERC) at Carleton College:
https://serc.carleton.edu/NAGTWorkshops/careerdev/NEGSA-Workshop09/research_statem.html.

University of California at San Francisco: <https://career.ucsf.edu/phds/academic-careers/academic-samples>.