

Guide to Resources at the American Institute of Physics on African Americans in Physics, Astronomy, and Related Disciplines

The Niels Bohr Library & Archives

The Niels Bohr Library & Archives is a repository and clearinghouse for information in the history of physics, astronomy, geophysics and allied fields. Below are some of the holdings available from the Niels Bohr Library & Archives on African Americans in physics, astronomy, and related disciplines.

Oral History Transcripts of African Americans in the Physical Sciences

The Niels Bohr Library & Archives contains over 1,500 oral history interviews with physicists. Below are interviews with African American physicists. The transcripts of the interviews are available online at the links provided below. For more information on oral histories, see <http://www.aip.org/history/nbl/oralhistory.html>.



Interview with Dr. James Stith

By Will Thomas

At AIP in College Park, MD

August 14, 2009

Oral History Transcript URL: <http://www.aip.org/history/ohilist/33903.html>

Abstract: This interview with Jim Stith was conducted following his retirement as Vice President of the AIP's Physics Resource Center. It covers his childhood in rural Virginia, and how he became interested in science, attendance at segregated schools, and at Virginia State University, where he received a BS degree in physics 1963 and an MS in physics in 1964. It discusses his work in physics under John Hunter, the third African-American to receive a PhD in the subject. The interview then covers his drafting into the Army during the Vietnam War, and his work in air defense in Korea, as well as his brief and successful career as an associate engineer at RCA under Bob Pontz. His graduate education and obtaining of an Ed.D. degree in physics in 1972 at Pennsylvania State University is discussed. The interview then focuses on his lengthy career as an instructor of physics at the United States Military Academy at West Point (1972-1993), his experiences as an African-American physicist, and his work in the field of physics education. The remainder of the interview concentrates on his move to teach and research physics education at The Ohio State University, his involvement with the American Association of Physics Teachers, and his work at AIP.



Interview with Dr. George Carruthers

By David DeVorkin

At Naval Research Laboratory, Building 209, Room 229

August 18, 1992

Oral History Transcript URL: <http://www.aip.org/history/ohilist/32485.html>

Abstract: George Carruthers was born 1939 in Cincinnati, Ohio; child of George Arthur Carruthers and Sophia Singley Carruthers; father an engineer at Wright-Patterson Air Force Base; interest in science from reading science fiction; built his own telescope while in junior high school; very little discrimination in elementary or junior high school even though he was one of few African Americans; moved to Chicago for high school; access to Adler Planetarium and built more telescopes; read about rocket launches and Herb Frieman; read The Viking Rocket Story by Milton Rosen; undergraduate University of Illinois 1957-61; Ph.D. University of Illinois 1964; "An Experimental Investigation on Atomic Nitrogen Recombination;" while in graduate school spent a summer at AerJet in California; exposure to engineers and "big science;" post-doctorate at E. O. Hurlburt Center for Space Research at Naval Research Laboratory (NRL), in unit headed by Talbot Chubb; dichotomy between scientists and engineers; little discrimination; small science vs. big science; molecular hydrogen; concern with science education and Project SMART; cameras and sensors on rockets; spectrography; electronographic technology; joint proposal with Thorton Page; hired permanently at NRL; charge-coupled device (CCD) technology; Apollo 16; geocorona camera.



Interview with Dr. Warren Washington

By Paul Edwards

In Boulder, Colorado

October 28 and 29, 1998

Oral History Transcript URL: <http://www.aip.org/history/ohilist/33098.html>

Abstract: In this interview, Warren M. Washington discusses his career in climate research. Topics discussed include: his childhood and family history; race relations; William E. Milne; meteorology; Fred W. Decker; Stanford Research Institute; Hans Panofsky; Oregon State University; computer climate modeling; numerical forecast modeling; United States Air Force; Akira Kasahara; National Center for Atmospheric Research (NCAR); Chuck Leith; Courant Institute; Aksel Wiin-Nielsen; Phil Thompson; Walter Orr Roberts; Geophysical Fluid Dynamics Laboratory (GFDL); Yale Mintz; Akio Arakawa; American Association for the Advancement of Science (AAAS); Francis Bretherton; University Corporation for Atmospheric Research (UCAR); Department of Energy (DOE); Burt Semtner; University of Michigan; Suki Manabe; climate change; global warming; Joseph Smagorinsky; National Oceanographic and Atmospheric Administration (NOAA); National Advisory Committee on Oceans and Atmosphere (NACOA); Fred Singer; Anne Gorsuch Buford; Larry Goulder; Intergovernmental Panel on Climate Change (IPCC); NSFNET; National Science Foundation; Congressman Obey; affirmative action.



Interview with Dr. Benjamin F. Peery

By David DeVorkin

At National Academy of Science

November 5, 1977

Oral History Transcript URL: <http://www.aip.org/history/ohilist/33698.html>

Abstract: A short biographical study dealing with the origins of his family; his upbringing and influences upon him leading him first to engineering and physics and then into astronomy; University of Minnesota undergraduate years; The

Depression; teaching physics in the South; Fisk University; University of Michigan graduate school; faculty position at Indiana University; the 1964 Civil Rights Amendment; decision to move to Howard University in 1977.

Archival Holdings at the Niels Bohr Library & Archives

Below are archival holdings held at the Niels Bohr Library & Archives, American Institute of Physics, One Ellipse Drive, College Park, MD 20740. For archival holdings at other institutions on African Americans in physics, astronomy, and related disciplines, search the International Catalog of Sources, <http://www.aip.org/history/nbl/icos.html>.

AIP Physics Resources Center Records of James Stith, 1987-2009

Owning Repository: American Institute of Physics
Description: 2.5 linear feet (2 records boxes, 1 half manuscript box).
Call Number: AR 2009-894
Online Finding Aid: <http://www.aip.org/history/ead/20100332.html>
Biography/History: The AIP Physics Resources Center (PRC) provides resources that advance physics as a discipline and a profession through: tracking federal science policy and funding; supporting science journalism; preserving and making known the history of modern physics; supporting science teachers and students, and providing leadership for support of physics undergraduate students; tracking education and employment trends in physics; and supporting the industrial physics community.

James Stith, American physicist (1941- __. Ph.D. Physics (Pennsylvania State University). Vice President of AIP Physics Resources Center (1998-2008). Research in program evaluation and teacher preparation, and an advocate for programs that ensure ethnic and gender diversity in the sciences.

Scope of Material: This collection documents the work of James Stith, during his tenure as Vice President of the American Institute of Physics (AIP) Physics Resource Center (PRC). The records mostly document Stith's involvement with various committees, workshops and other groups, on topics such as physics education, minorities in the sciences, as well as his involvement with assorted AIP and PRC committees and groups. The collection also contains a small amount of correspondence and a small subject file kept by Stith.

Brief History of the Physics Department at Fisk University including its Infrared Spectroscopy and other Research Programs, 1997.

Owning Repository: American Institute of Physics
Description: 4 pages.
Call Number: IH 2008-891
Biography/History: Physicist (Spectroscopy). Professor of physics, Fisk University, 1949-1956 and 1959-1983.
Scope of Material: Brief history of the physics department of Fisk University, a historically black university in Nashville, Tennessee.

The genesis of the National Society of Black Physicists [undated]

Owning Repository: American Institute of Physics.
Description: 1 folder (4 pages).
Call Number: MB 2009-882
Biography/History: Physicist (theoretical). Assistant to professor, physics department, Fisk University, 1970-1981; chairperson and professor, Atlanta University.

Scope of Material: A brief account of Ronald Mickens' role in the formation of the National Society of Black Physicists (NSBP), formerly known as the Society of Black Physicists. Topics discussed include: Howard Foster (physics department chair at Alabama A&M University), James Young (Los Alamos National Laboratory and MIT), Joseph Johnson III (Southern University), and Harry Morrison (Howard University and UC Berkeley); Mickens' post-doctorate years at the Massachusetts Institute of Technology (MIT); the selection and awarding of honors to mentors in the African-American collegiate physics community; details of the meetings held at Morgan State University and Morehouse College in 1977 and 1978 to form and inaugurate the National Society of Black Physicists, including a list of the first officers of the Society.

Julius H. Taylor Papers, 1939-2006

Owning Repository: Morgan State University. Morris A. Soper Library and Information Technology Center. 1700 E. Cold Spring Land, Baltimore, MD 21251, USA.

Description: 2 linear feet (1 manuscript box; 1 half manuscript box; 1 flat document box)

Call Number: AR 2008-813

Biography/History: Professor emeritus, Morgan State University, Department of Physics.

Scope of Material: The personal and professional papers of professor Julius H. Taylor include lecture notes and biographical material, photographs, and certificates and awards received for service in education and leadership.

Nelson Fuson autobiographical and biographical materials, 1997

Owning Repository: American Institute of Physics

Description: 5 items.

Call Number: MB 1999-25

Biography/History: Physicist (Spectroscopy). Professor of physics, Fisk University, 1949-1956 and 1959-1983.

Scope of Material: File includes a brief autobiography by Fuson, his curriculum vitae, a list of his scientific publications, a program from the 25th Annual Fisk University Infrared Spectroscopy Institute, and photocopies of photos and news clippings featuring Fuson.

Ronald E. Mickens Collection on African-American Physicists, circa 1950-2008

Owning Repository: American Institute of Physics

Description: 1 linear foot (1 records box)

Call Number: AR 2012-1067

Online Finding Aid: <http://www.aip.org/history/ead/20120385.html>

Biography/History: Theoretical physicist. Assistant professor, physics department, Fisk University, 1970-1981; chairman and professor, Atlanta University.

Scope of Material: Biographical files on African-American physicists collected by Ron Mickens. Some files were solicited as part of an effort by the National Society of Black Physicists to create an exhibit highlighting African-American physicists, and others were collected by Mickens for the purpose of drafting obituary announcements for PHYSICS TODAY magazine. The biographical files consist of resumes, bibliographies, brief correspondence and reminiscences, and include physicists such as

Rutherford Hamlet Adkins, Alonzo (Al) Ashley, Clayton W. Bates, Jr., Edward A. Bouchet, Robert H. Bragg, Herman R. Branson, Warren W. Buck, Charles E. Bush, George R. Carruthers, Hattie Carwell, James C. Davenport, Charles S. Duke, Halston V. Eagleson, Donald A. Edwards, Robert A. Ellis, Jr., Joseph Francisco, Sylvester James Gates, Roscoe C. Giles, Larry Gladney, Warren E. Henry, Wendell T. Hill, III, John M. Hunter, Elmer S. Imes, Keith H. Jackson, Shirley A. Jackson, Anthony M. Johnson, Joseph A. Johnson, III, Herbert W. Jones, James R. Lawson, William A. Lester, Jr., H. (Harold) Ralph Lewis, Walter P. Lowe, Kenneth R. Manning, Walter E. Massey, Walter S. McAfee, Cynthia R. McIntyre, Ronald McNair, Kelly Miller, Willie Hobbs Moore, Sekazi Mtingwa, Harry L. Morrison, Homer A. Neal, Lionel Senhouse, Carl A. Rouse, Kennedy Reed, Steven L. Richardson, Earl D. Shaw, James H. Stith, Julius H. Taylor, Hubert Mack Thaxton, Charles H. Townes, William D. Townes, James M. Turner, Neil Tyson, Arthur B. C. Walker, Jr., Warren M. Washington, James E. West, Barbara A. Williams, Michael D. Williams, Weldon Calvin Williams, Jr., Herbert G. Winful, James E. Young.

The Emilio Segré Visual Archives

URL: <https://photos.aip.org/>

The Emilio Segré Visual Archives contains over 30,000 historical digital images, photographs, slides, lithographs, engravings, drawings, and other visual materials. The collection is richest in portraits and snapshots of modern American physicists, astronomers, and geophysicists but includes many other scientists as well as photos and illustrations of laboratories, telescopes, accelerators and other instruments, objects, and places. High quality print and digital reproductions are available for purchase at low cost while our stock thumbnail images are free to download for educational, non-commercial uses. The Ronald Mickens Collection, Physics Today Collection, and others contain many photographs of African American physicists.

AIP Publishing

The American Institute of Physics has been one of the world's leading publishers in the physical sciences for more than 80 years. AIP Publishing's portfolio includes 17 prestigious, highly cited journals and the AIP Conference Proceedings series. AIP Publishing also publishes on behalf of several of AIP's Member Societies and other publishing partners. More information can be found at <http://publishing.aip.org/>. To search for journal articles and conference proceedings, visit Scitation, the online repository for AIP Publishing at <http://scitation.aip.org/>.

Below are a few selected historical and contemporary articles on African Americans in physics, astronomy, and related disciplines from AIP Publishing. These articles have been reproduced in this teacher's guide and are available in the Other Resources section.

Branson, Herman. "Physics Training for the Negro Student." *American Journal of Physics* 10, 201 (1942), <http://dx.doi.org/10.1119/1.1990377>.

Branson, Herman. "The Negro in Physics – An Interview with Herman Branson." *Physics Today* (September 1966), <http://dx.doi.org/10.1063/1.3048474>.

Carrigan Jr., R. A., et. al. "The fermilab summer program for minority students." *The Physics Teacher* 15, 455 (1977), <http://dx.doi.org/10.1119/1.2339736>.

Davenport, J. C. "Program at Fermilab for minority students." *Physics Today* 30(6), 9 (1977), <http://dx.doi.org/10.1063/1.3037587>.

Edwards, D. A. "Physics in Negro Colleges – A Progress Report." *American Journal of Physics* 21, 691 (1953), <http://dx.doi.org/10.1119/1.1998714>.

Feder, Toni. "African Americans in Physics." *Physics Today* 63(11), 26 (2010), <http://dx.doi.org/10.1063/1.2518207>.

Horton, K. Renee. "Minority American Women Physicists Achieving at the Intersection of Race and Gender," *AIP Conference Proceedings* 795, 225 (2005), <http://dx.doi.org/10.1063/1.2128378>.

Stassun, Keivan G., et. al. "The Fisk-Vanderbilt Master's-to-Ph.D. Bridge Program: Recognizing, enlisting, and cultivating unrealized or unrecognized potential in underrepresented minority students." *American Journal of Physics* 79, 374 (2011), <http://dx.doi.org/10.1119/1.3546069>.

Stith, James H. "Making a Difference: Ethnic Diversity in Physics." *Physics Today* 49(7), 39(1996), <http://dx.doi.org/10.1063/1.881502>.

Stith, James H. "Guest Comment: Endangered species, the Black physicist." *American Journal of Physics* 58, 427 (1990), <http://dx.doi.org/10.1119/1.16473>.

Stovall, Tannie. "Negro physicists – a reply to Branson." *Physics Today* 19(12), 11 (1966), <http://dx.doi.org/10.1063/1.3047846>.

Williams, Quinton L. "Undergraduate physics programs at HBCUs: Can we stop the losses?" *Physics Today Online* 63, 9, 8 (2010), <http://dx.doi.org/10.1063/1.4796369>.

Woodson, Harold W. "The Present Status of Physics in Negro Colleges." *American Journal of Physics* 9, 180 (1941), <http://dx.doi.org/10.1119/1.1991664>.

AIP Statistical Research Center

The AIP Statistical Research Center is a source for data on education and employment in physics, astronomy, and allied fields. They have produced numerous reports on underrepresented minorities in physics which are available at <http://www.aip.org/statistics/minorities>. Below are a few of these reports that pertain to African Americans in physics, astronomy, and related disciplines.

Ivie, Rachel, Arnell Ephraim, and Susan White. "African Americans & Hispanics among Physics & Astronomy Faculty: Results from the 2008 Survey of Physics & Astronomy Degree-Granting Departments." February 2010. <http://www.aip.org/statistics/reports/african-americans-hispanics-among-physics-astronomy-faculty>.

Ivie, Rachel, Garrett Anderson, and Susan White. "African Americans & Hispanics among Physics & Astronomy Faculty." July 2014. <http://www.aip.org/statistics/reports/african-americans-hispanics-among-physics-astronomy-faculty>.

Czujko, Roman and Starr Nicholson. "African Americans Among Degree Recipients in Physics and Geoscience." October 2010. <http://www.aip.org/statistics/reports/african-americans-among-degree-recipients>.

Czujko, Roman, Rachel Ivie, and James H. Stith. "Untapped Talent: The African American Presence in Physics and the Geosciences." September 2008. <https://photos.aip.org/statistics/reports/untapped-talent-african-american-presence-physics-and-geosciences>.

American Institute of Physics Member Societies

The American Institute of Physics has ten member societies which AIP supports with professional services, additional benefits for their members, and competitively-priced benefits to their employees upon request. Below are some of the opportunities available for minorities from different AIP member societies. For a full list of AIP's member and affiliated societies, see <http://www.aip.org/member-societies>.

AIP Member Societies:

- Acoustical Society of America
- American Association of Physicists in Medicine
- American Association of Physics Teachers
- American Astronomical Society
- American Crystallographic Association
- American Meteorological Society
- American Physical Society
- AVS: Science & Technology of Materials, Interfaces, and Processing
- The Optical Society of America
- The Society of Rheology

The Acoustical Society of America

URL: <http://acousticalsociety.org/>

The Acoustical Society of America is the premier international scientific society in acoustics, dedicated to increasing and diffusing the knowledge of acoustics and its practical applications. For fellowships and scholarships available from the Acoustical Society of America including the "Minority Fellowship," see http://acousticalsociety.org/funding_resources/fellowships_scholarships.

The American Association of Physics Teachers

URL: <http://www.aapt.org/>

The American Association of Physics Teachers is a professional membership association of scientists committed to improving physics education. The AAPT Committee on Diversity in Physics has a three-part mission: to seek more effective means of recruitment and retention of minority members of society in physics classes and physics related careers, to seek methods of aiding minority physicists to overcome barriers to career development, and to communicate to the AAPT membership and to the community at large the findings of the committee, through approved AAPT channels. For more information, see <http://www.aapt.org/aboutaapt/organization/minorities.cfm>.

American Astronomical Society

URL: <http://aas.org/>

The American Astronomical Society Committee on the Status of Minorities seeks to enhance the participation of underrepresented minorities in Astronomy and Astrophysics at all levels of experience. For more information, see <http://csma.aas.org/>.

American Meteorological Society

URL: <http://www.ametsoc.org/>

The American Meteorological Society administers an array of graduate fellowships and undergraduate scholarships with the support of its members, corporations, and government agencies nationwide. The AMS/Industry Minority Scholarships will award funding to minority students who have been traditionally underrepresented in the sciences, especially Hispanic, Native American, and Black/African American students. Funding for the scholarships is provided by industry and through donations made by members to the AMS 21st Century Campaign. For more information, see <http://www.ametsoc.org/amsstudentinfo/scholfeldocs/index.html>.

The American Physical Society

URL: <http://www.aps.org/>

The American Physical Society is committed to the inclusion of underrepresented minorities in physics and has spent decades working on programs to increase recruitment and retention of African American, Hispanic American and Native American physicists. APS programs for minorities include Scholarships and Awards, Hiring Advice, Travel Grants for Minority Colloquium Speakers, and Site Visits Promoting Minority Hiring and Retention. For more information, see <http://www.aps.org/programs/minorities/>.

Below are links to resources available from the American Physical Society:

- Minority Physicist Profiles: <http://www.aps.org/programs/minorities/profiles.cfm>
- Scholarships & Awards:
<http://www.aps.org/programs/minorities/honors/index.cfm>
- Speakers List: <http://www.aps.org/programs/minorities/speakers/index.cfm>
- APS Bridge Program: <http://www.aps.org/programs/minorities/bridge/index.cfm>
- Publications and Reports:
<http://www.aps.org/programs/minorities/resources/index.cfm>
- Site Visits: <http://www.aps.org/programs/minorities/sitevisits.cfm>
- Minorities in Physics Brochure:
 - Explore, Understand, Succeed (English):
<http://www.aps.org/programs/minorities/upload/minoritybrochure07.pdf>
 - Explora, Entiende, Triunfa (Spanish):
<http://www.aps.org/programs/minorities/publications/upload/minbroc-spanish.PDF>

The Optical Society of America

URL: www.osa.org

The Minorities and Women in OSA is an important networking resource dedicated to providing educational and networking opportunities, career support and grant information. MWOSA programming includes guest speaker presentations on topics and issues of special interest to female and minority scientists. For more information, see http://www.osa.org/en-us/media_library/minorities_and_women_in_osa/.

National Society of Black Physicists

URL: <http://www.nsbp.org/>

The National Society of Black Physicists is an affiliated society of the American Institute of Physics. Inaugurated in 1977, the NSBP is a global professional society uniting African American, Afro-Caribbean, and African physicists and astronomers. NSBP provides programs for physics students, information and resources on public policy, career services, scholarships and prizes, and organizes an annual conference.