

## Annotated Bibliography: African Americans in Physics, Astronomy, and Related Disciplines

Campbell Jr., George, Ronni Denes, and Catherine Morrison. *Access Denied: Race, Ethnicity, and the Scientific Enterprise*. New York: Oxford University Press, 2000.

This anthology, which came out of the National Action Council for Minorities in Engineering (NACME) Research and Policy Conference on Minorities in Science, Engineering and Mathematics in 1995, gathers essays by over two dozen leading scholars and researchers that address the issue of underrepresented minorities in the sciences. It begins with a demographic framework and ends with policy recommendations increasing the number of underrepresented minorities in the sciences. While the statistics in this volume are now outdated, particular essays may be useful for students at a high school or undergraduate level in order to discuss topics such as affirmative action, discrimination in education, and education policy.

Carey, Charles W. *African Americans in Science: An Encyclopedia of People and Progress*. Santa Barbara, CA: ABC-CLIO, 2008. (608 pp.)

This encyclopedia contains over 250 alphabetically organized entries that highlight the scientific achievements of African Americans. It contains an extensive bibliography of print and online resources for further research and information on a selection of issues such as scientific theories of race, the Tuskegee syphilis experiment, and African Americans in various scientific fields. The encyclopedia includes information on 100 leading African-American scientists including astrophysicist Carl Rouse. This encyclopedia is a great resource for a school library.

Carwell, Hattie. *Blacks in Science: Astrophysicist to Zoologist*. Hicksville, N.Y.: Exposition Press, 1977. (95 pp.)

According to Julian Manly Earls, who penned the introduction of *Blacks in Science*, “to increase the number of Blacks in technical fields, one must increase the youngster’s knowledge of what Blacks have achieved in those fields.” (7) In order to achieve this goal, physicist Hattie Carwell compiled this collection of twenty six short and accessible biographies of African Americans in science. Eight of these biographies focus on physicists of different stripes including astrophysicist George Carruthers, biophysicist Herman Branson, laser physicist Earl Shaw, health physicist Roscoe Koontz, nuclear chemist James Harris, jet and rocket propulsion researcher Albert Antoine, physicist Meredith Gourdine, and theoretical physicist Shirley Ann Jackson. Each biography includes about a page on every individual profiled. The book is organized alphabetically by profession. Within each section, Carwell also highlights the achievements of black scientists in other fields and includes a glossary of terminology. While dated, the book is accessible and highlights many important historical figures. However, more recent books on the subject have been published (see Kristine Krapp, *Notable Black American Scientists* and James Kessler, *Distinguished African American Scientists of the 20<sup>th</sup> Century*). This book is appropriate for readers at grade level 5-8.

Cerami, Charles A. *Benjamin Banneker: Surveyor, Astronomer, Publisher, Patriot*. New York: John Wiley and Sons, Inc., 2002. (272 pp.)

Benjamin Banneker is one of the most recognized African American scientists in American history. Born in 1731 in Baltimore County, Maryland, Banneker was a self-taught mathematical genius and astronomer. Charles Cerami, a former editor of Kiplinger Washington Publications, utilizes material from local archives, correspondence, journals, and other earlier biographies of Banneker to compile this comprehensive biography. Cerami contextualizes Banneker's life and achievements within 18<sup>th</sup> century American society. This book is a good choice for a book report or to use for researching Banneker's life. Appropriate for readers in grades 8 and up.

Fouché, Rayvon. *Black inventors in the age of segregation: Granville T. Woods, Lewis H. Latimer & Shelby J. Davidson*. Baltimore: Johns Hopkins University Press, 2003. (225 pp.)

Rayvon Fouché's study provides an important contribution to the historiography of Black inventors and scientists. In his examination of some of the most well-known Black inventors – Granville T. Woods, Lewis H. Latimer, and Shelby J. Davidson – Fouché seeks to examine the formation of what he calls the “black inventor myth” in which Black inventors are presented as two-dimensional icons divorced from their historical context. Fouché articulates the struggle to present Black inventors as fully human in what he calls the “Black History Month moment,” which overlooks the complexity of this history. This book is significant in its unique approach to the history of African American inventors. The entire book, introduction, or individual chapters on particular inventors, would be useful in an undergraduate or graduate course on the history of science or technology.

Greene, Robert Ewell. *Robert A. Thornton, Master Teacher: Scholar, Physicist, Humanist*. Fort Washington, MD: R.E. Greene, 1988.

This book describes the life of Dr. Robert Thornton, who earned his Ph.D. in Physics from University of Minnesota and went on to be a physics teacher at Shaw University, Fisk University, the University of Chicago, and the University of Puerto Rico. The biography begins by focusing on Thornton's years growing up in Houston, Texas and his journey to become a “master teacher.” Robert Greene also describes Thornton's discussions with Albert Einstein. Though the book does not contain much historical context, it would be a great resource for anyone doing research on the history of African American physicists and astronomers. Appropriate for readers grades 9 and up.

Gubert, Betty Kaplan, Miriam Sawyer, and Caroline Fannin. *Distinguished African Americans in Aviation and Space Science*. Westport, CT: Oryx Press, 2002.

This volume profiles the lives of one hundred African American scientists, including twenty African American women, from George Washington Carver to Mae Jemison. Of the one hundred featured scientists, this volume profiles thirteen physicists, including Herman Branson, George Campbell, Jr., George Carruthers, James Drew, Joseph Francisco, Meredith Gourdine, Warren Henry, Shirley Ann Jackson, Wade Kornegay, H. Ralph Lewis, Ronald McNair, Ronald E. Mickens, and Harry Morrison. The book dedicates three to four pages on each scientist's early years, higher education, and

career highlights. An image or sketch is provided for each scientist. This would make a great reference book at a school library for use in research projects. Appropriate for readers in grades 6 and up.

Haber, Louis. *Black pioneers of science and invention*. New York: Harcourt, Brace & World, 1970.

Reprinted in 1992, this classic book by Louis Haber profiles fourteen black scientists and inventors. Although none of the individuals highlighted are physicists or astronomers, this study includes inventor Granville T. Woods, who was a pioneer in electromagnetism. Appropriate for grades 8 and up.

Harding, Sandra. *The "Racial" Economy of Science: Toward a Democratic Future*. Bloomington: Indiana University Press, 1993. (526 pp.)

This anthology, edited by feminist philosopher Sandra Harding, collects essays from leading scholars on the connection between race and science from various fields including women's studies, history, sociology, and anthropology. The collection attempts to decenter Eurocentric narratives of science, analyze the social construction of science, and suggest new democratic futures for scientific enterprise. It is organized in six sections: non-Western scientific traditions, the scientific construction of race, who gets to "do science," the application of science and technology, objectivity, and democratic strategies for scientific progress. Many essays, particularly in the section "Who Gets to Do Science?," are relevant for understanding the history of African Americans in science. Shirley Malcolm's essay "Increasing the Participation of Black Women in Science and Technology" and Kenneth R. Manning's essay "Ernest Everett Just: The Role of Foundation Support for Black Scientists 1920-1929" will be particularly valuable. Undergraduate or graduate curriculum in the History of Science, Women's Studies, or Cultural Studies can use individual essays from the 34 collected in this volume.

Haskins, James and Kathleen Benson. *Space Challenger: The Story of Guion Bluford*. Minneapolis: Carolrhoda Books, 1984. (64 pp.)

*Space Challenger*, describes the life of NASA astronaut Guion Bluford, the first African American in space. This biography explains how Bluford became interested in becoming an astronaut and his experience on the *Challenger*. This book also includes many pages of pictures and a glossary of terms used in the field of aerospace engineering. Appropriate for readers in grades 3-6.

James, Portia P. *The Real McCoy: African-American Invention and Innovation, 1619-1930*. Washington, D.C.: Smithsonian Institution Press, 1989. (110 pp.)

*The Real McCoy* was published as part of an exhibit on African American invention and innovation at the Anacostia Museum of the Smithsonian Institution. The book discusses the contributions made by African Americans to America's technological culture.

Jeffrey, Laura S. *Guion Bluford: A Space Biography*. Springfield, NJ: Enslow Publishers, 1998. (48 pp.)

Designed for young readers, this biography profiles astronaut and physicist Guion Bluford who became the first African American to go to space in 1983. Appropriate for readers in grades 3 and up.

Jemison, Mae. *Find Where the Wind Goes: Moments from My Life*. New York: Scholastic, 2001. (208 pp.)

In her autobiography, Mae Jemison recounts how she became the “first woman of color in the world to travel to space.” Jemison writes in an accessible and engaging style. Appropriate for readers grades 6 and up.

Jones, Stanley P. and L. Octavia Tripp. *African-American Astronauts*. Mankato, MN: Capstone Press, 1998. (48 pp., large font)

This book provides short biographies of five African American astronauts: Guion S. Bluford Jr, Charles F Bolden Jr., Frederick D. Gregory, Bernard A. Harris Jr., and Mae C. Jemison. Each profile includes information about the astronauts’ early life, education, career, and missions and includes photographs. *African-American Astronauts* is intended for a younger audience and is appropriate for students in grades 3 and up. It would make a good resource for a school library and could be used in a class for short biography reports.

Jordan, Diann. *Sisters in Science: Conversations with Black Women Scientists about Race, Gender, and Their Passion for Science*. West Lafayette, IN: Purdue University Press, 2006.

In this book, Diann Jordan, an associate professor of biology at Alabama State University, seeks to answer the question “Why do so few black women enter scientific careers, and for those who do, what can they teach us about how black women survive and succeed in science?” Jordan argues that “for too long black women scientists have been virtually invisible and often neglected in the larger American society and even in their own culture.” (x) To address this invisibility, she interviewed seventeen black women scientists about their lives and careers, including theoretical physicist Shirley Ann Jackson. In addition to asking about their scientific work, Jordan explores the influence of family, the civil rights movement, the women’s movement, and social and professional organizations on their careers. This study provides a bibliography on recommended reading on the history of black women. Appropriate for an undergraduate course.

Kessler, James H. *Distinguished African American Scientists of the 20th Century*. Phoenix, AZ: Oryx Press, 1996.

This encyclopedia of twentieth century African American scientists is a valuable research resource on African Americans in the sciences. It profiles one-hundred scientists, including thirteen physicists, thirty-one chemists, thirty biologists, two geologists, seven engineers, eleven physicians, and two anthropologists. Of the one-hundred scientists featured in this volume, twenty are women. Each biographical sketch consists of a photograph when available or a sketch and information on the individual’s early years, higher education, and career highlights. Prominent physicists and engineers profiled

include Herman Branson, George Campbell, Jr., George R. Carruthers, Christine Darden, Joseph Francisco, Meredith C. Gourdine, Warren E. Henry, Shirley Ann Jackson, William M. Jackson, James King, Jr., Wade M. Kornegay, H. Ralph Lewis, John W. Macklin, Walter E. Massey, Ronald Erwin McNair, Ronald Albert Mickens, Harry L. Morrison, Kennedy J. Reed, Carl A. Rouse, John B. Slaughter, Warren M. Washington, J. Ernest Wilkins, and Willie Williams, Jr. This encyclopedia is a valuable resource for a school library or for use in research on particular individuals.

Klein, Aaron E. *The Hidden Contributors: Black scientists and inventors in America*. Garden City, N.Y.: Doubleday, 1971. (203 pp.)

Aaron Klein's study offered one of the earliest books detailing the lives of African American scientists and inventors. *The Hidden Contributors* provides detailed biographies of twelve African American scientists and inventors from the 18th century to the 20<sup>th</sup> century. The book is organized by field of study. The study's profile of scientist and astronomer Benjamin Banneker, in particular, could be useful for developing a lesson plan on Banneker. The book contains a number of illustrations that flesh out the biographical profiles. Appropriate for readers in grades 8-12.

Krapp, Kristine, ed. *Notable Black American Scientists*. Gale: Detroit, 1999. (349 pp.)

*Notable Black American Scientists* features 254 black scientists and physicians from colonial American to the present, including 59 women scientists. Each entry consists of basic information such as name, birth and death dates, and fields of specialty, a biographical essay, selected writings by the scientists, and suggestions for further reading. The book also includes a timeline of scientific milestones of those profiled and significant events in African American history. An index allows readers to find entrants by gender or field of specialization. The section on further reading is particularly useful for students who want to do research on African American scientists. Appropriate for readers in grades 6 and up.

Mallett, Ronald L. *Time Traveler: A Scientist's Personal Mission to Make Time Travel a Reality*. Basic Books, New York, 2009. (198 pp.)

This autobiography weaves together Physicist Ronald Mallett's memories from his past with his scientific theories on time travel. Mallett was born in 1945 in Roaring Springs, Pennsylvania. At the age of 10, his father passed away suddenly. His fascination with the stories of Ray Bradbury and his wish to see his father again led Mallett to become passionate about the science of time travel. This touching autobiography tells the story of Mallett's journey to make time travel a reality. Appropriate for high school readers.

Manning, Kenneth R. *Black Apollo of Science: The Life of Ernest Everett Just*. Oxford University Press, New York, 1983. (416 pp)

In this book, Dr. Kenneth Manning, a distinguished historian of science at Massachusetts Institute of Technology, details the life of Ernest Everett Just, a brilliant marine biologist and one of the leading black scientists of the 20<sup>th</sup> century. Though Just was a biologist and not a physicist, his life exemplifies the struggles that black scientists faced under Jim Crow. Appropriate for undergraduate or graduate class on the history of race and science.

McNair, Carl S. and H. Michael Brewer. *In the spirit of Ronald E. McNair, astronaut: an American hero*. Atlanta, GA: Publishing Associates, 2005. (240 pp.)

This large-print book, intended for readers in grades 6-8, documents the life of African American physicist and astronaut Ronald McNair. The second African American in space, McNair died in the Challenger disaster of 1986. The book was written by McNair's brother, Carl McNair, and is a touching account of their lives together. As his brother, Carl McNair can describe some of the most personal aspects of Ron's life and details the challenges Ron faced in pursuing his dream of becoming an astronaut. This biography contains many photographs of Ron McNair and his family. *In the spirit of Ronald E. McNair*, would be a useful resource for a middle school class.

Mickens, Ronald E., ed. *Edward Bouchet: the first African-American doctorate*. New Jersey: World Scientific, 2002. (134 pp.)

This is the only book on Edward Bouchet, the first African American doctorate in Physics from Yale University, receiving his Ph.D. in 1876. The study contains essays by physicist Ronald Mickens on the life of Edward Bouchet, Elmer Samuel Imes, and the origins of the National Society of Black Physicists; the transcript of John A. Wilkenson's 1988 talk on Bouchet as well as an essay on the history of African Americans in science by historian of science Kenneth A. Manning. This book is a valuable resource for high school students or for background reading for developing lessons on African Americans in science.

Mickens, Ronald. *The African American Presence in Physics*. Atlanta, GA: National Society of Black Physicists, 1999. (84 pp.)

Dr. Ronald Mickens is a physicist and was historian for the National Society of Black Physicists (NSBP). *The African American Presence in Physics* is a compilation of materials related to an exhibit prepared by the NSBP as part of its contribution to the American Physical Society's Centennial Celebration. The book is divided into three sections. The first contains several essays on the history of African Americans in science by Kenneth Manning, the National Society of Black Physicists, and the history of the National Conference of Black Physics Students. The second section consists of two essays by Dr. Mickens on Edward Bouchet, Elmer Imes, and Hubert Mack Thaxton. The third section features biographical sketches of 38 African American physicists.

Moses, Robert P. and Charles E. Cobb, Jr. *Radical Equations: Civil Rights from Mississippi to the Algebra Project*. Boston: Beacon Press, 2001. (233 pp.)

In this book, civil rights organizer Robert Moses recounts how he came to see mathematics as a civil rights issue. Moses worked to increase the number of Black voters in Mississippi in the early 1960s and was active in the civil rights movement. He founded the Algebra Project to develop math literacy, particularly in underserved communities. Appropriate for high school level courses.

Naden, Corrine. *Ronald McNair: Astronaut*. New York: Chelsea House Publishers, 1991. (109 pp.)

This book profiles the life of physicist and astronaut Ronald McNair who died tragically in the space shuttle *Challenger* accident in 1986. The book is aimed at young adults and intermediate readers. This biography is a useful resource for a research project on Ronald McNair.

Nakieru, Omoviekovwa. *The Physics Queen: An Authorized Biography of Dr. Elvira Louvenia Williams*. Bloomington, IN: Xlibris, 2010.

*The Physics Queen* chronicles the life of Dr. Elvira Louvenia Williams, one of the earliest African American women to receive her doctorate in physics. Born in Greensboro, North Carolina, Dr. Williams attended North Carolina Central University and received her doctorate in 1977 from Howard University in Physics. She later became the Dean of the College of Arts and Sciences at Shaw University, Raleigh, North Carolina. Williams is known for her research in nanoscience and nanotechnology. Well-written and very detailed, this book is a useful for research projects on Dr. Williams. Appropriate for readers in grades 9 and above.

O'Connell, Diane. *Strong Force: The Story of Physicist Shirley Ann Jackson*. New York: Franklin Watts, 2005.

This book is part of the Women's Adventures in Science series which focuses on the lives of contemporary women scientists. It chronicles Shirley Ann Jackson's career in physics, beginning with her interest in science as a child, through her educational experience at MIT, to 1998 when she was inducted into the National Women's Hall of Fame. Intended for a young audience, this book contains numerous illustrations and photographs, a timeline of Dr. Jackson's life, a glossary of terms related to physics, and a selected bibliography.

Pearson, Jr., Willie. *Black Scientists, White Society, and Colorless Science*. Millwood, NY: Associated Faculty Press, 1985. (201 pp.)

This important sociological study analyzes the status of African American scientists in the American scientific community and the influence of race on their careers. Intended for an academic audience, this book includes ample data on the educational and professional experiences of black scientists and features a chapter that focuses exclusively on black women scientists. The final essay draws broad conclusions about race and universalism in American science. Willie Pearson's study is a seminal work in the sociology of race and science. This book is a useful resource for an undergraduate or graduate-level class on the history or sociology of science.

Pursell, Carroll W. *A Hammer in Their Hands: A Documentary History of Technology and the African-American Experience*. Cambridge, Mass: MIT Press, 2005. (304 pp.)

*A Hammer in Their Hands* is an essential book for historical primary sources related to African Americans and technology. It contains primary sources from the 18th century to the late 20th century, which uncover the intersections of African American history and the history of science and technology. This study also includes sources that uncover African influences on medicine and agriculture in the New World, the history of African American invention, the contributions of Historically Black Colleges and Universities (HBCUs), and a wide range of topics. This is a great reader for a high school or undergraduate course on the history of technology.

Russell, Dick. *Black Genius: Inspirational Portraits of America's Black Leaders*. New York: Skyhorse Pub, 2009. (561 pp.)

In this collection of essays, interviews, and photographs, Dick Russell explores the achievements of African Americans from the 18<sup>th</sup> until the 20<sup>th</sup> century. The book is divided into four parts: "Part 1 – A Certain Heritage," "Part 2 – Creation under Fire," "Part 3 – Builders of America," and "Part 4 – Healers of Body and Spirit." In each part, Russell highlights brilliant African American pioneers throughout history. The essays weave together, touching on themes of intergenerational community, family, and activism. Part 3, "Builders of America," specifically focuses on the contributions of black scientists and inventors. The essays focus on black inventor Lewis Latimer; laser physicist Earl Shaw and his brother; "computer wizard" Alan Shaw; Bob Moses and the formation of the Algebra Project; and astronomer Benjamin Banneker. Section 3 also includes profiles of architects Charles and Cheryl McAfee. Appropriate for readers in grades 6-12.

Sammons, Vivian O. *Blacks in science and medicine*. New York: Hemisphere Pub. Corp., 1990. (293 pp.)

This reference book contains biographical entries on around 1,500 African Americans who have contributed to science and medicine. Entries include birth and death dates, field of specialty, education, career information, and organizational affiliations. The book also lists inventions by African American inventors. This is a good reference work for a school library.

Sinclair, Bruce, ed. *Technology and the African-American Experience*. Cambridge, MA: MIT Press, 2004. (237 pp.)

Published by the Lemelson Center for the Study of Invention and Innovation at the Smithsonian Institution, this book includes 11 essays that explore historical connections between race and technology. It was written specifically with teachers in mind, seeking to provide ideas and material that teachers could include in their courses. It also grew out of a curriculum project that sought to use the history of technology to encourage women and minority students in middle and high school to pursue careers in science. While this book does not focus particularly on African Americans in physics, essays span such subjects as African influences on rice cultivation in the United States to the racial politics of "automobility" in the early twentieth century. Several essays, including the introduction by editor Bruce Sinclair, seek to provide theoretical frameworks for connecting the histories of race and technology. An essay on the history of African American invention from 1619 until 1930 may be used to develop more inclusive lesson plans. "A Bibliography of Technology and the African-American Experience" may be particularly useful for teachers and students looking for further reading. The MIT Press

printed a companion book containing primary sources on the history of African Americans and technology. See Pursell, Carroll W. *A Hammer in Their Hands: A Documentary History of Technology and the African-American Experience*. Cambridge, Mass: MIT Press, 2005.

Sluby, Patricia Carter. *The Inventive Spirit of African Americans: Patented Ingenuity*. Westport, CT: Praeger, 2004. (352 pp.)

In this book, patent examiner Patricia Sluby has compiled a collection of patents that testify to the contributions of African Americans to invention and technology. From the contributions of enslaved Africans to the African Americans in the 21<sup>st</sup> century, this book includes information about famous black inventors such as Lewis Latimer and Granville T. Woods, as well as scores of others whose names may not be as recognized. A 70-page appendix gathers a roster of African American patentees. This is a useful book for researching black inventors in American history. Appropriate for readers in grades 9-12 or at an undergraduate level.

Strong, Avaine. 2010. *Get Strong: A True Story*. Pittsburgh, PA: Dorrance Publishing, 2010. (1094 pp.)

Dr. Avaine Strong is currently the head of the Physics Department at Grambling State University in Grambling, Louisiana. His autobiography focuses on the struggle for racial justice and building healthy relationships while pursuing his career in physics. Though the book's length may prohibit use in a curriculum, it would be useful for those writing about the contemporary experiences of African American physicists.

Sullivan, Otha Richard. *Black Stars: African American Women Scientists and Inventors*. San Francisco, CA: Jossey Bass, 2012. (160 pp.)

This book is intended for children age 11 to 17 years old. It profiles 26 women scientists and inventors including information on their background and achievements. Photographs and illustrations are also included. This book is available as an e-book.

Tyson, Neil deGrasse. *The Sky Is Not the Limit: Adventures of an Urban Astrophysicist*. New York: Doubleday, 2000.

Neil DeGrasse Tyson is one of the most well-known African American physicists. As the host of the TV series *Cosmos*, Tyson has become a recognizable American cultural icon. This autobiography chronicles his life growing up in New York City and his aspirations to understand the universe. Appropriate for a high school or undergraduate level reader.

Warren, Wini. *Black Women Scientists in the United States*. Bloomington: Indiana University Press, 1999. (392 pp.)

In this book, Dr. Wini Warren compiles biographical sketches of over one hundred black women scientists in disciplines such as anatomy, anthropology, astronautics, space science, biochemistry, biology, chemistry, geology, marine biology, mathematics, medicine, nutrition, pharmacology, physics, psychology, and zoology. This study also

contains an index of disciplines and an appendix listing publications by many of the scientists it profiles. Because there are so few reference works on black women scientists, this book provides an essential resource.

Williams, Clarence G. *Technology and the Dream: Reflections on the Black Experience at MIT, 1941-1999*. Cambridge, MA: MIT Press, 2001. (1042 pp.)

This book grew out of the Blacks at MIT Project, which was formed to document the experience of black students at MIT. The book contains over 75 oral history transcripts with students, faculty, and staff who reflect on the experience and role of African Americans at MIT. It includes an interview with eminent physicists Dr. Sylvester James Gates, Jr., Dr. Shirley Ann Jackson, and other black mathematicians and scientists. The volume also contains a CD of additional interviews and images. The book does not include any framing of the interviews but only the transcripts themselves. The interviews could provide a good source material for a high school- or undergraduate-level discussion on the experience of African American students.

Van Sertima, Ivan. *Blacks in Science: Ancient and Modern*. New Brunswick, NJ: Transaction Books, 1983. (302 pp.)

Ivan Van Sertima is a literary critic, linguist and anthropologist who did work in East Africa. His book is one of the first to examine the history of blacks in science and technology from a diasporic approach. *Blacks in Science* looks at the history of African and African American contributions to science. An essay by John Pappademos focuses on the role of Africa in the history of physics. Also of particular relevance is the essay "Blackspace" by James G. Spady, which examines the work of Dr. George Carruthers and Dr. Elmer Imes, both African American physicists who contributed to space science, as well as an interview with Dr. Lloyd Quarterman, a nuclear physicist who worked on the Manhattan Project. Other essays examine the work of Dr. James West, a physicist who worked at Bell Labs and invented the modern microphone, Dr. Christine Darden, an aerospace engineer at NASA's Langley Research Center, and astrophysicist Dr. George Carruthers. A teacher's guide is also provided for teachers who are developing courses on African and African American science. The guide includes an essay and a bibliographical guide. This book will be useful for educators in framing a lesson plan or course on African and African American science or for use by students doing research on the history of blacks in science.

Verheyden-Hilliard, Mary Ellen, and Holly Meeker Rom. *Scientist and Strategist, June Rooks*. Bethesda, MD: Equity Institute, 1988. (31 pp)

This children's book is part of the American Women in Science biography series published by the Equity Institute, which present the stories of 15 diverse women scientists. June Rooks, who contracted polio as a child, eventually earned a degree in physics from Jackson State University and was a researcher at the China Lake Naval Research Base. The book's aesthetic are dated and the illustrations are simple and without color. However, the story is compelling and this is a good book for students at an elementary level.

Young, Jeff C. *Brilliant African-American Scientists: Nine Exceptional Lives*. Berkeley Heights, NJ: Enslow Publishers, Inc., 2009. (128 pp.)

This book, intended for ages 11 and up, is part of the Great Scientists and Famous Inventors series. Three physicists are included among the nine scientists profiled: George R. Carruthers, Shirley Ann Jackson, and Walter E. Massey. Other African American scientists profiled include Benjamin Banneker, Charles R. Drew, Ernest Everett Just, John P. Moon, Daniel Hale Williams, and Jane Cooke Wright. This compilation is a good resource for a school library or to provide students in writing a report on one of these individuals.