AAUW empowering women since 1881

Hilltopics

October 2025

AAUW Los Alamos, New Mexico

October Event: Out 'n About

None Left for Me, Exhibit at the Maxwell Museum of Anthropology on the UNM campus in Albuquerque
Wednesday, Oct. 8, 8:30 am - 4:00 pm,
followed by lunch at the Indian Pueblo Kitchen, Indian Pueblo Cultural Center

"This exhibition of hundreds of photographs taken by non-native photographer Milton Snow over 20 years, combined with archival documents and contemporary photographs examines the impact of U.S. Indian Commissioner John Collier's Navajo Reduction Program on Dine communities and homelands. Imposed upon Navajo people in the 1930's, this federal program proposed to eliminate over half of Dine livestock herds. Against the backdrop of the Dust Bowl and the Hoover Dam, livestock reduction was an extreme response to reports of over-grazing throughout the Navajo homeland."

One of the two co-creators of this exhibit, Jennifer Denetdale, will lead us and facilitate a conversation about the oppressive nature of American colonial administration.

We will enjoy lunch at the Indian Pueblo Kitchen, which features a full menu of both native and New Mexican favorites.

We will form carpools, leaving at 8:30 am, to visit the Maxwell Museum of Anthropology on the UNM campus in Albuquerque. We expect to return about 4 pm. Please contact Nina Thayer for more information, to reserve a spot and arrange carpools. (505-231-6312, gnthayer@cybermesa.com)

September Fall Lunch and Business Meeting

We began with tasty and elegant lunch coordinated by our hospitality chair, Karin Roberts, aided by contributions from council members.
The short business meeting led by our facilitator, Judy Prono, followed; the budget passed as presented; Carol Neal reported that the scholarship fund has over $3000 and the scholarship committee will be interviewing candidates soon; Judy reported that our branch has earned 5-star rating from national; the award certificate image is now on our newsletter banner.
We then heard from twin sisters, Anjolie and Aubreyanna Gallegos from Pojoaque Valley Middle School, about their experiences at Tech Trek. They were very articulate and enthusiastic and want to have their own business designing and building houses as adults. We watched videos of camp, and the girls explained projects and experiences including a financial planning game of life.

Our state representative, Christine Chandler, spoke about important issues that will be debated at the special legislative session and next year's 30 day session, specifically related to reduction in federal funds for Snap and Medicare. Other topics of interest to our members were juvenile violent crime, malpractice insurance, and medical practitioners' compacts. Rep. Chandler encourages hearing from constituents and can be reached at christine.chandler@nmlegis.gov.

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Book Group

The October book is People of Means by Nancy Johnson. Rozelle Wright will review at both meetings.

The October 6th, 7pm meeting will be hosted by Debby Hyman at 1919 Spruce, LA. Please let Debby know if you will attend (504-717-7704 or debbyhyman@yahoo.com).

The 2pm, October 7th meeting will be held at Sherril Hall of the Trinity on the Hill Episcopal Church. Let Rozelle Wright know if you are coming (bandrwright@yahoo.com, 505-662-5490).

Great Decisions

Bi-weekly meetings will begin in February once the books have been procured. If you have not signed up for this year's program, and wish to participate contact Denise (505-690-3534, denisegeorge@icloud.com). She will order books for the group.

The 2026 topics are:

1. **America and the World: Trump 2.0 Foreign Policy**
   Trump's "America First" approach creates risks of isolation and diminished influence.
2. *By G. John Ikenberry*
3. **Trump Tariffs and the Future of the World Economy**
   Trump's aggressive trade and tariff policies have implications for multilateral trade and geopolitics.
   By Michael Mastanduno
4. **U.S.-China Relations**
   Tariffs, military modernization, and pressure on Taiwan--Does Trump have a coherent China policy? What are America's strategic options?
   By Oriana Mastro
5. **Ruptured Alliances and the Risk of Nuclear Proliferation**
   U.S. alliance skepticism may drive countries like Japan and South Korea to reconsider nuclear options. How will countries make decisions about security and nuclear weapons?
   By Gideon Rose
6. **Ukraine and the Future of European Security**
   With reduced U.S. support for NATO and Ukraine, Europe faces strategic uncertainty. What are America's stakes in NATO and Europe's strategic dilemmas, and how might Europe respond?
   By Thomas Wright
7. **Multilateral Institutions in a Changing World Order**
   Can multilateralism survive amid shifting global power and rising nationalism? Global cooperation across trade, health, and finance are at risk.
   By Scott Bessent
8. **U.S. Engagement of Africa**
   Africa's geopolitical role is growing. What lessons can the U.S. learn from China's presence there, and how might it strengthen ties, especially with leading nations like Nigeria? *By Jendayi E. Frazer*
9. **The Future of Human Rights and International Law**
   As democracy and human rights retreat globally—and the U.S. pulls back—how can civil society and legal norms remain effective in a divided world? *By Jose Enrique Alvarez*

Nonfiction Book Group

The next meeting is November 10, 7pm. The book is Living through Birds by Christian Cooper; the discussion leader is Joan Moore. Host will be announced.

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Example of a JEDI (Justice Equality Diversity Inclusion) Woman of Science: We have all heard of the amazing telescope and the observatory in Chile named for Vera Rubin. The telescope contains the largest digital camera ever built. It will take detailed images of the southern hemisphere sky for 10 years, covering the entire sky every few nights and creating an ultra-wide, ultra-high-definition, time-lapse record — the largest astronomical movie of all time. But what do we know of Vera Rubin, the scientist?

She was born on July 23rd, 1928 in Philadelphia, Pennsylvania to Eastern European Jewish parents Phillip and Rose Cooper. She was their second child. When Rubin was 10, her family moved to Washington, DC. Throughout her early educational journey, her parents fostered her love of science. Rubin's father assisted her with the construction of a cardboard telescope so that she could photograph the motion of stars, and her mother persuaded the local librarian to permit her to check out adult science books.

She graduated high school in 1944 and, having long since been inspired by the first U.S. female astronomer Maria Mitchell, who taught at Vassar College in New York, she went on to attend Vassar. When she told her high school physics teacher she would be attending Vassar, he doubted her prowess, telling Rubin "As long as you stay away from science, you should do OK,". Rubin majored in astronomy, and was the only student at the all-women's school to do so. The summer of 1947, she met Cornell physics student and future husband, Bob Rubin. The pair married in the fall of that same year and, in spring of 1948, Rubin received her degree from Vassar. She applied for graduate school at Princeton, though she was denied due to being a woman.

Bob was in the Navy's V-12 program, which stationed those enlisted at universities to learn useful skills. After graduating, Rubin went to join her husband at Cornell. She spoke highly of her experience there; in 1951, she earned a master's degree while her husband received his PhD. Following graduation, Bob was hired by the National Bureau of Standards. The pair returned to Washington, DC, where Rubin embarked on a fruitful—though challenging—professional journey.

She briefly took time off to care for her first-born son, David, but remained deeply invested in science. Rubin reflected on this period of her life and wrote: "I would push David to the playground, sit him in the sandbox, and read the *Astrophysical Journal*,". With the continued support of her husband, she decided to return to school. She was accepted into Georgetown University's astronomy PhD program, which was one of the only programs in the area to offer night courses.

In 1950, Rubin gave a talk at the American Astronomical Society regarding her master's thesis entitled "Rotation of the Universe". She discussed the velocity distribution of galaxies, and received largely negative commentary from the wholly male attendees. However, this talk garnered the attention of theoretical physicist and cosmologist George Gamow. Gamow's research is considered to be foundational, specifically his work on helping to develop the Big Bang Theory. He reached out to Rubin, asking question after question. One stuck out to her: "Is there a scale length in the distribution of galaxies?" and she decided to conduct the research to answer that question through her doctorate thesis. Ultimately, Gamow became her thesis advisor. She received her PhD and completed her thesis "on the nature of the extragalactic universe" in 1954; her work was then published that same year in the *Astrophysical Journal*.

Rubin struggled after the birth of her third child. Tasked with staying home, her reality was much different than the one she had envisioned: conducting scientific research. She once reflected on this period, stating “I realized that as much as we both adored this child, there was nothing in my background that had led me to expect that [my husband] would go off to work each day doing what he loved to do, and I would stay home…I really found it very, very hard,”. By 1955, Rubin was hired on by Georgetown University to both do research and teach. She worked there for a decade.

Rubin pictured measuring spectra in 1974 at the Carnegie Institution in Washington, D.C.

A year prior to Rubin’s final year of teaching, she was invited by astronomer Allan Sandage to conduct observations from the Palomar Observatory located in San Diego, California. Women were prohibited from utilizing the 200-inch telescope, which prompted Rubin to eagerly accept the opportunity. When given a tour of the facility, it became clear that women were truly not welcome when she observed that the only bathroom present was designated for men. In an act of defiance, Rubin drew a woman in a skirt and placed it on the door. The next time she returned, “heating had been added to the observing room, along with a gender-neutral bathroom".

In 1965, she began work at the Carnegie Institution’s Department of Terrestrial Magnetism in Washington, DC. as the first female scientist on the department’s staff. Throughout her career, Rubin faced various obstacles due to sexist views on women in science. However, her ideas began to take off when she collaborated with astronomer Kent Ford. Ford “built the most sensitive spectrometer in existence to measure how much light different objects gave off at different wavelengths”. The pair used his spectrograph on a telescope located at Lowell Observatory in Arizona, which enabled them to observe objects that had once gone undetected.

The Mother of Dark Matter: A Defining Discovery

Vera Rubin using Kitt Peak National Observatory’s 36-inch telescope

As Ford and Rubin continued to work together, their findings resulted in the pair publishing nine papers. Their ultimate discovery was once touched upon by Swiss astronomer, Fritz Zwicky, who first proposed the existence of the substance called “dark matter” in 1933. He observed that galaxies in the Coma Cluster that should have flown apart from each other did not. Zwicky concluded that something that cannot be seen must have been holding them together. Struggling to find further evidence to support this claim, the scientific community overlooked his work.

Rubin and Ford were able to detect the rotations of distant galaxies. In galaxies like our Milky Way, stars orbit the center of the galaxy. Rubin and Ford tracked the rotation of stars around the center of distant galaxies,

and expected the stars farther from the center of the galaxy to rotate slower. Instead, the stars were rotating just as fast as those near the center, so fast that Rubin and Ford determined there must be an “invisible” mass present causing the speed –now called “dark matter”.

This process was not as simple as merely compiling the evidence. It took months to understand what their data actually meant, and it was not until Rubin made sketches of their findings that the answer (dark matter) became clear. In the years following, physicists such as Jeremiah Ostriker and James Peebles worked to develop a theoretical understanding of dark matter. Their work aided in solidifying Rubin and Ford’s research as a part of scientific canon. In the many years following these discoveries, “…scientists have figured out that dark matter makes up more than 80% of all the matter in the Universe.”

Rubin and Ford’s discovery was groundbreaking in and of itself, but also in the various subfields it created that further explore astrophysics and particle physics. This discovery also breathed new life into Rubin’s career. From 1972 to 1977, she was the associate editor of the *Astronomical Journal.* Then, from 1977 to 1982, she was the associate editor of *Astrophysical Journal Letters.*

Life and Legacy

Rubin remained active in astronomical research decades after her big discovery. Over the span of her career, she published more than 100 scientific papers. In recognition of her contributions to astronomy, she was elected to the National Academy of Science in 1981. She also won various awards. In 1993, President Bill Clinton awarded her the National Medal of Science, and in 1994 she received the Dickson Prize in Science from Carnegie-Mellon University and the Henry Norris Russell Lectureship from the American Astronomical Society.

Additionally, in 1996 she became the second woman to receive the Gold Medal of the Royal Astronomical Society in London, and in 1996 President Clinton nominated her as a member of the National Science Board. In 2004, Rubin was awarded the James Craig Watson Medal by the National Academy of Sciences for her work on dark matter and mentorship of aspiring astronomers.

Her husband, Bob, passed away in 2008. Rubin died eight years later on December 25th, 2016, in Princeton, New Jersey—she was 88 years old. Rubin’s legacy is not only solidified by her scientific findings, but through many other honors. A ridge on Mars has been named after her, as well as an asteroid, a satellite, a galaxy, and the National Science Foundation’s Vera C. Rubin Observatory in Chile. Notably, this is the first national observatory named after a woman (Wilensky 2021). Her memory also lives on in her children (David, Karl, and Allan) as all three of them hold doctorate degrees in the sciences. The Rubins’ daughter, Judy, also held a doctorate degree in the sciences and passed in 2014.

Rubin opened the doors for many in the sciences by remaining committed to her passions. Though obstacles presented themselves as men tried to undermine and overshadow her contributions, others sought to support and uplift her. Once she made undeniable waves in her field, she took hold of any opportunities that allowed her to uplift those who came after her, mentoring and guiding the next generation of astronomers as best she could. Rubin shared her hopes for the future with the 1996 Berkeley graduating class: *“I hope you will love your work as I love doing astronomy. I hope that you will fight injustice and discrimination in all its guises. I hope you will value diversity among your friends, among your colleagues… among the student body population".*

Extract from, womenshistory.org, National Women's History Museum

Calendar

October 6,7	Book Group
October 8	Out'n About

Coordinating Council 2025-2026

Council Voting Members	
Judy Prono	Facilitator
Linda McLellan	Secretary
Mary Ann Lindahl	Membership/Treasurer
Judy Prono	JEDI justice, equity, diversity, inclusion
Denise George	Newsletter/WEB
Nina Thayer	Public Policy
Marilyn Doolen	Historian
Bev Cooper	Publicity
Appointed positions	
Carol Neal	UNM-LA Scholarship
Helena Whyte	STEM
Karin Roberts	Hospitality
Open positions	
	University Relations
	Nominating
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