

Branch News

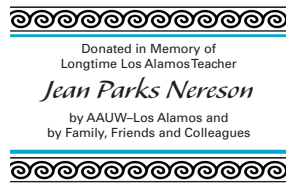
There will be no October program.

The November speaker will be Melissa Romero, the head of Risk Management and Security at LANB, who will speak to us about identity theft. We will meet on Saturday, November 7th at 11:00 am, at the new White Rock Library.

We have two new members, Elsa Riemer and Jo Ann Unruh.

Jean Nereson Books Memorial Update

At our Fall Luncheon last month, Julie Goen and Jeff Lloyd, librarians at Pinon and Aspen Schools, spoke about how they had spent their JNBM funds. Each of the five Los Alamos elementary school librarians has received \$2000 from the memorial fund over the last two years, and each will receive another \$2000 over the next two years.



In addition to talking about the books they have added to their libraries, Julie and Jeff passed around a sampling of books purchased, each with our bookplate that honors Jean. In line with Jean's own passion for enriching her students' understanding of people around the world, many of their new books focus on world cultures, history, and geography. Some also address current needs, such as supporting Common Core requirements and teachers' class research topics, such as immigration. And some add to their collections of fictional series that their students find compelling. Their preference has been to buy hardback books for their longer shelf life, and many of the books they shared with us had beautiful illustrations to draw young readers into their subject matter.

In a later communication, Julie indicated that so far more than 500 books have been added to the schools' libraries in Jean's memory, with more books coming this fall purchased with funds already received. Both Jeff and Julie expressed their sincere

appreciation to our branch and the Nereson family for the opportunity the JNBM has given them to enrich and expand their library collections.

Out 'n About

Mesa Prieta Petroglyph Tour, Friday, October 23, 9:30 am (carpools leave at 8:30), \$25.



Katherine Wells, the director of the Mesa Prieta Petroglyph Project, was the speaker at our tea this past May. Now on October 23 we

will get to see the real thing including petroglyphs from the Archaic Period (before 1000 AD), the Puebloan Period (1200-1600 AD) and the Historic Period (1598 – present). The mesa contains an estimated 70,000 petroglyphs and is the largest site in New Mexico.

This will be a private tour, limited to 30 participants. The tour cost is \$25 per person, begins at 9:30 am, lasts approximately two hours, and will be followed by lunch, TBA. The location is north of Espanola near Pilar. We will meet at the United Church parking lot in Los Alamos at 8:30 am and 8:40 am at the White Rock “Y”.

Please bring sunscreen, a hat, camera, water and sturdy walking shoes, as the trails are rough. If you have walking poles, you may wish to bring them. We will divide into smaller groups according to walking agility.

Contact Nina Thayer to make a reservation, gnthayer@cybermesa.com. The following are already registered: Bonnie Gordon, Ginny White, Terry Marzili, Alahna Weller, Mary Ann Lindahl, Rosmarie Frederickson, Denise George, Mary Jane Giesler, Angela Coop, Gloria Cordova, Cas Mason, Nina Thayer, Nancy Scheer and Kay Dorko.

Non-fiction Book Group

The October 19, 7:30 pm meeting will be at Harriet Dodder's, 149 El Gancho. We will discuss Being Mortal by Atul Gawande, and Kathleen Logan will lead the discussion. Please let Harriet know if you are coming, 662-7473, harrietdodder@comcast.net. Visitors welcome.

Book Group

The October book is Replacement Child by Christine Barber. The Monday, October 5th, 7:30pm meeting will be at Karin Robert's, 415 Cheryl Ave. Let Karin know if you are coming, 672-9625, karinroberts875@icloud.com.

At this point we have no hostess for the Tuesday, Oct 6, 1:00pm meeting. If you are able to host, please let our book group leader know -- Karin Roberts (672-9625, karinroberts875@icloud.com). If no one volunteers the meeting will be cancelled.

Terry Marzili will lead the discussion at both meetings.

Visitors welcome.

Click here for the [schedule 2015-16](#).

Read on to learn of an amazing scientist who was recently awarded the Priestly medal.



The view from **Jacqueline K. Barton**'s office at California Institute of Technology is modest, despite the fact that it once belonged to two-time Nobel Laureate Linus Pauling and still showcases his analytical balance. "I never thought I'd end up here," Barton says. As a girl born in 1952, her early plans never involved becoming a chemistry professor at a place like Caltech.

Even though it wasn't the plan, being a chemist is something at which Barton has excelled—so much so that this year she is receiving the highest honor of the American Chemical Society, the Priestley Medal, "for brilliant work on electron transport in DNA, for dedication to training young investigators, and for unwavering support of the chemistry enterprise."

Barton is the third woman to receive the Priestley Medal. The previous two were Darleane C. Hoffman (who worked as a nuclear chemist at Los Alamos) in 2000 and Mary L. Good in 1997.

Barton first started pushing back frontiers as a child growing up in New York City, where she attended Riverdale Country School. At the time, the school was gender segregated. In addition to learning academic basics, the girls studied art and music while the boys focused on advanced math and science. The only coed class was American history.

But one of Barton's teachers saw that she was good at math and decided that she should take calculus. "It was a major thing," Barton says. "She went to my parents, and then she and my parents went to the headmistress." Barton's teacher prevailed, and Barton recalls being driven in a red station wagon to get to and from class on the boys' campus.

Barton's father was a judge and her mother a homemaker, "so the whole math and science thing was not part of their toolbox," Barton says. "But my parents were always proud of me."

In 1970, she entered Barnard College, the women's college affiliated with Columbia University. Barton thought she might major in math, but chemistry won out. "Chemistry allows you to combine the rigors of mathematics with a little bit of something that could make a difference in the world," Barton says. Also, "I love the beautiful molecular structures."

Barton enrolled at Columbia for graduate school where chemistry professor Stephen J. Lippard pitched a project to her that involved binding inorganic complexes to DNA. After earning a Ph.D., Barton spent a year as a postdoctoral researcher at Bell Laboratories, then in 1980 she returned to New York to join the chemistry

faculty at Hunter College. “I wasn’t ambitious,” Barton says. “When I was at Riverdale, I thought I’d be a high school teacher, then I thought I’d be a college teacher. I just sort of went from step to step.”

At Hunter, Barton started her research program by investigating DNA-binding metal complexes as analogs for restriction enzymes and other proteins that require metal ions to function. She also learned how to teach, write grants, and interact with her colleagues.

After a couple of years at Hunter, however, Barton felt constrained. She couldn’t do research at the level she wanted, she says, because of the teaching requirements and the graduate student pool. In 1983, Lippard moved to Massachusetts Institute of Technology and Barton replaced him on the Columbia faculty.

At Columbia, Barton continued to work on DNA-binding complexes. Nicholas J. Turro and Barton also collaborated scientifically, using Turro’s expertise in photochemistry to probe Barton’s DNA complexes. That work led to a major finding by a joint postdoc, C. Vijay Kumar: DNA could transfer electrons between polypyridyl ruthenium and cobalt complexes. But the idea that DNA might behave as a molecular wire was controversial. There was a lot of back and forth in the literature and harsh questions at conferences. “She was given a tough time,” Lippard says. Barton prefers not to talk about it. “It was painful,” she concedes. “And it was very tough on my students.” Barton approached the criticism head-on with more experiments, carefully controlled. In particular, she insisted that her group members work with DNA under conditions normally found in a cell—in water at room temperature. They also always used well-characterized DNA so they knew how the base pairs stacked and how strongly electron donor and acceptor complexes coupled to the helices. After many years, “the bottom line is that we and others have learned that charge transfer through DNA can occur over long molecular distances. But it depends exquisitely on the stacking. Anything that screws up the stacking will screw up the electron transport,” Barton says. Theorists are still trying to work out the mechanisms at play.

In addition to taking on scientific challenges and mentoring group members, Barton has contributed to the chemistry enterprise globally as a member of the Dow Chemical Board of Directors, which she joined in 1993. Many board members are not scientists, and “the board looks to her for third-party validation on things they’re hearing from management.”

Barton is also currently serving in her second consecutive term as chair of the Caltech Division of Chemistry & Chemical Engineering. Barton’s priorities have been fund-raising and hiring. Fund-raising has gone well—so far, Barton has raised \$20 million to fund graduate fellowships. As for hiring, Caltech has several chemistry faculty nearing retirement, and the push is on to ensure that the division’s future is as bright as its past. As part of that, Barton has created a diversity committee to try to figure out how the division can improve its recruiting. “The two-body problem continues to be difficult,” Barton says.

These days, Barton’s group continues to work in three areas. One is determining whether cells use DNA-facilitated electron transfer as a means to monitor DNA integrity. Another is exploiting DNA electrochemistry for diagnostic applications, such as distinguishing tumors from normal tissue by looking for highly methylated DNA. The third is designing metal complexes that bind at DNA base pair mismatches for possible cancer treatments. Although Barton’s group is smaller than it used to be, she seems no less enthusiastic about her science. “It’s fun!” she emphasizes.

As Jacqueline K. Barton was getting her career established in the early 1980s, there was another “young hotshot,” as Barton describes him, also working on DNA sequence recognition: Caltech chemistry professor Peter B. Dervan. “We were intellectual colleagues,” Barton says, shying away from saying competitors.

The two scientists became familiar with each other at conferences, with Dervan approaching DNA recognition from an organic chemistry perspective while Barton exploited inorganic complexes.

In 1990 Barton and Dervan married. They remain devoted to each other.

“I really love this guy,” Barton says.

“I’m just the luckiest guy in the whole world,” Dervan says.

Professionally, Barton and Dervan have kept their research programs largely separate from each other’s, generally avoiding collaboration. Personally, the couple also clearly distinguishes between professional and personal time. On weekdays, they typically arrive on campus around 7:30 AM and go home at 5:30 PM, and

work stays at work, they say. They swim in their backyard pool—“I certainly have acclimated to California,” says Barton, a New York City native—then Barton makes dinner while Dervan pours wine. Dervan has a son, Andrew, from a previous marriage; Barton and Dervan together have a daughter, Elizabeth. When the children were young, evenings and weekends were spent with them, and the family vacationed together twice a year.

“I’ve always been impressed at how much Jackie and Peter emphasize family. They’ve been a great example for me as a professor,” says Caltech chemistry professor Jonas Peters. “Jackie’s just a fantastic mom, and I really respect her for what a good parent she is.”

Now, Andrew is a physician with his own family, and Elizabeth is in law school. Still, Barton and Dervan keep work out of their personal time. The separate spheres mean that when Barton and Dervan attend conferences together and see each other’s talks, they are often learning something for the first time. “He’ll ask me a question or I’ll ask him, and everyone thinks it’s a setup,” Barton says. “It’s not! It’s a genuine question.”

(this article has been excerpted from an American Chemical Society Biography of Barton)

Branch Calendar

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| Oct | 5,6 | Book Group |
| Oct | 19 | Non-fiction Book Group |
| Oct | 23 | Out ‘n About |

Coordinating Council for 2015-16

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|------------------------------|------------------------------|----------|--|
| Marilyn Doolen | Co-Facilitator/Publicity | 672-3571 | mtdoolen@aol.com |
| Judy Prono | Co-Facilitator/Public Policy | 662-2691 | djprono@msn.com |
| Natalie Markin | Membership/Backup-Treasurer | 662-9399 | natalie@lanb.com |
| Mona Wecksung | Treasurer | 662-7084 | wecksung2005@msn.com |
| Jill Forman | At large | 662-2407 | jowilla.f@gmail.com |
| Maryjane Giesler | University Representative | 662-5574 | mgiesler@unm.edu |
| Mary Ann Lindahl | Secretary | 663-0995 | moonbeamx@comcast.net |
| Margo Batha | At large | 661-8746 | atomicbathas@me.com |
| Nina Thayer | AAUW Fund | 662-6835 | gnthayer@cybermesa.com |
| Non-council positions | | | |
| Denise George | Newsletter | 672-9688 | denisegeorge@icloud.com |
| Marilyn Minshall | Historian | 672-3499 | mjminshall@q.com |
| Harriet Dodder | Nominating Chair | 662-7473 | harrietdodder@comcast.net |