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Olga Martin
Los Alamos National Laboratory

Laura McClellan
Los Alamos National Laboratory

Octavio Ramos
Los Alamos National Laboratory

Heather Quinn
Los Alamos National Laboratory

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There from the Beginning: The Women of Los Alamos National Laboratory Supporting National and International Nuclear Security

Olga Martin, Laura McClellan, Heather Quinn, and Octavio Ramos
Los Alamos National Laboratory

Abstract

From the beginning of the Manhattan Project in the early 1940s, the women of what would become Los Alamos National Laboratory (LANL) worked in technical positions alongside their male counterparts, played a key role as computers, and worked in administrative jobs as secretaries, phone operators, bookkeepers, and on behalf of the U.S. Army in the Women's Army Corps.

Throughout the history of the Laboratory, women experts at LANL helped establish and lead important national and international security programs, with careers in science, technology, engineering, and mathematics. Over time, the women of Los Alamos have come together under various Employee Resource Groups, such as the Atomic Women, to help the next generation succeed in their technical fields. The Laboratory's commitment to diversity and inclusion continues to this day, with current Laboratory Director Thom Mason leading LANL as the first national laboratory to join the Gender Champions in Nuclear Policy.

Keywords: nuclear security, women in science, women in engineering, gender equality, grassroots movement, career development, pipeline

I. From the Manhattan Project to Today

Since the early 1940s, women at Los Alamos National Laboratory have served as a driving force for future female leaders in science, technology, engineering, and math (STEM) in support of national security. During the Manhattan Project, there were 640 women working at Los Alamos—approximately 11% of the total employees at that time [1]. Today, as more women enter STEM fields, LANL has seen a steady increase of women in scientific positions across Laboratory divisions and in management positions, with significant progress made also in the numbers of women in postdoc and student positions—the Laboratory's next-generation workforce. Of course, there is always more work to do.

At present, women make up more than 36% percent of the Laboratory's staff, with nearly 33% in senior leadership, 23% in research and technical management, as well as in the professional R&D (researchers, scientists, engineers) positions, and 25% in post-doctoral positions [2]. For women working in nonproliferation and international nuclear security programs at Los Alamos, these numbers are increasing as well, also thanks to LANL leadership efforts and motivated employees who have come together to support diversity and inclusion efforts in these and other technical fields at the Laboratory.

Nancy Jo Nicholas, the Laboratory Associate Director for Global Security, who leads LANL programs with a particular focus on developing and applying the scientific and engineering capabilities to address national and global security threats, emphasized her commitment to diversity with the following: "I'm surrounded by strong, intelligent, and dedicated women at the Laboratory all the time. To see women rise to leadership positions seems really natural to me, and I'm glad I can be part of it" [3].

Diversity and inclusion fuel LANL's innovative, agile workforce. Employee engagement is an essential part of this effort. To that end, LANL encourages its staff to become a part of Employee Resource Groups (ERGs) and find ways to help shape the workforce of the future [4]. Through LANL ERGs, members work to cultivate a supportive work environment, address issues that concern the group, and encourage and support members in their careers. LANL ERGs recommend, develop, and provide assistance with initiatives that help the Laboratory to attract and recruit the next generation, support LANL in retaining and promoting representative group members, and increase awareness of work environment issues.

John Sarrao, LANL Deputy Director and Women's ERG Champion, summarized the Laboratory's push for diversity and inclusion, as well as for women's professional growth, in a recent statement: "A diverse workforce is not a nice-to-have, it's mission essential. Given our important national security mission responsibilities, diversity of thought is critical and that only comes through a workforce that is diverse and representative of the broader population. Further, the Laboratory's new culture statement – how we do our work is as important as WHAT we do – is a clear commitment to the importance of an inclusive laboratory work environment" [5].

II. LANL Employee Resource Groups – Grassroots Beginning with Atomic Women

In an effort to recruit and retain more women in STEM fields and in national security at LANL, in 2007 a group of women in the Applied Physics Division at the Laboratory established the Atomic Women Employee Resource Group [6]. This group's original goal was to introduce female summer students to women scientists and thus foster collaborations that could lead to new positions for women scientists and engineers.

Over time, the Atomic Women Resource Group has grown, as scientists, researchers, and advocates for women in STEM and global security from other divisions at the Laboratory have joined the core group. As a result, this resource group has expanded its charter to cover topics related to addressing gender bias in science and engineering, tackling issues related to diversity, overcoming stress and encouraging career development and work-life satisfaction. Always at the core of its mission the group emphasizes mentoring and career development among women, particularly when it comes to science and engineering. Anyone at the Laboratory who supports women in STEM is welcome to join the group, and we also welcome non-laboratory employees and advocates who are active in or retired from a STEM-related career.

Atomic Women activities include hosting panel and informal discussions on career development, stress management and resiliency, unconscious bias in STEM, workplace communication, leadership skills, and work-life satisfaction. Group members also organize speed-networking events, technical talks, book

discussions, and represent LANL in the Laboratory's partnership with Association for Women in Science. Last year the group established a pilot program, LANL Ambassadors, an outreach by Atomic Women to their alma maters and professional societies to make connections with students and professors. This effort is designed to increase awareness of the Laboratory and share information on LANL internships/employment opportunities.

To help spread the word about the many women who have contributed to national security at Los Alamos over the years, Atomic Women, in conjunction with two other women's resource groups at the Laboratory—Women of Computing and the LANL Women's Group—recently brought together a group of employees for a Wikipedia edit-a-thon, to create and edit biographies of female scientists from Los Alamos. The goal of this gathering was to boost coverage for inspiring LANL women in STEM on Wikipedia, and to prepare these biographies for publication. The bios cover not only LANL female scientists but also technicians who contributed to LANL scientific excellence throughout the history of Los Alamos. The LANL women's groups see this success as just the beginning, with plans for more biographies in future.

The Atomic Women also work with LANL Division Leaders Council, encouraging its members to consider part-time and/or flexible schedule positions in job ads to help create more opportunities for re-integration of women into the workforce. Atomic Women and other women's ERGs also started collaborating with LANL leadership in job advertisements to ensure that the requirements outlined do not discourage potential candidates from a diversity perspective and that the language used remains gender neutral. Atomic Women also work with LANL management to support greater numbers of subject-matter experts who attend career fairs and to find ways to increase scholarships targeted toward surrounding communities in northern New Mexico.

When LANL has women in its pools of applicants for Scientist positions, analyses show a consistent pattern of hiring the women in the pool at a higher rate than the men in the pool. However, women typically make up only a third of the pool of applicants for any given position. We speculate that the inability to recruit more female applicants is a combination of societal factors. As LANL is relatively remote, we find that many women with families are reluctant to apply for positions at LANL if there is not the potential for their trailing spouses to also find meaningful employment. Further, while the Laboratory offers a host of quality benefits, including paid parental leave, it cannot always compete with companies fully in the private sector regarding salary. Both the trailing spouse issue and the inability to offer significant sign-on compensation affect the Laboratory's ability to implement a wide-net recruitment strategy to entice women to our workforce. Our recruitment efforts are localized and job specific. Several years ago, the Laboratory implemented a "climate-survey" to gauge the impressions of employees on their overall satisfaction with our work environment. The survey did not drill down to specific areas of concern with regard to inclusion for women in research and development organizations, and therefore a follow-up survey is being considered by the new leadership team.

III. Committed to Gender Equality

Having the support of high-level management is critical when attempting a shift in a longstanding culture. In November 2019, Thom Mason, LANL Director, led the Laboratory in being the first U.S. national laboratory to join the Gender Champions in Nuclear Policy [7]. This initiative brings together leaders or institutions working in nuclear policy who are committed to making gender equality a reality.

“Nuclear policy, like many technological fields, has long been a male-dominated space,” noted Mason when asked about why Los Alamos joined Gender Champions in Nuclear Policy. “As a result, women in the field have too often been marginalized. In joining Gender Champions in Nuclear Policy, the Laboratory is committing to actively working to bring more women into the field, amplify their voices

and foster a culture of respect. We're proud to be a part of this network and look forward to seeing the positive changes that result" [8].

Part of LANL leadership's reasoning for joining Gender Champions in Nuclear Policy is that research has shown that the more diverse a team is, the better it performs. Said Mason, "Los Alamos is home to talented, inspiring women who serve as ambassadors for their fields, and we are committed to growing the number of women and other underrepresented groups in all parts of the Laboratory. One way we are doing that is through local outreach and education programs that expose girls and young women to STEM careers and foster their ambitions. This helps create a pipeline of technical staff that we hope will be the future face of the Laboratory" [8].

A bright example of such outreach that creates opportunities for the next generation of women in science and engineering is the Summer Physics Camp for Young Women that LANL organizes every year [9]. More than twenty high-school-aged young women from Santa Fe, Española, Pojoaque, and other locations around New Mexico spend two weeks getting insights into life as a scientist. Hosted by LANL in conjunction with the LANL Foundation, the New Mexico Consortium, and Pojoaque Valley High School, this free camp enables participants to tour LANL facilities and learn from female professionals working in STEM programs as scientists, research technologists, summer students, and engineers. LANL scientists help coordinate activities and presentations in science and software coding topics, as well as resumé writing, interview techniques, and information on Laboratory internships and local college opportunities. This year the Fourth Summer Physics Camp for Young Women has been adapted to a completely virtual experience, with students attending from their homes and volunteers joining from as far as Europe.

The leader of the Summer Physics Camp, LANL scientist Dr. Anna Llobet Megias, says that a key part of the Camp is that most of its volunteers and instructors are women with diverse backgrounds, education, and career paths: "We can discuss our own experiences and the different paths we took to become scientists. We offer connections to Laboratory scientists and engineers, and the amazing and broad range of work done here. We also offer guidance and encouragement around working at the Laboratory as an intern or in the future" [10].

LANL Atomic Women also reached out in the recent years to a local nonprofit, Girls Inc. of Santa Fe, to develop partnerships in STEM education and mentoring with this organization, as its program focuses on healthy living, academic enrichment and life skills and independence for young girls of Santa Fe County.

IV. Conclusion

The women of Los Alamos National Laboratory have been integral to the Laboratory's mission from the beginning, making key contributions to national and international nuclear security. Along the way, these women have established a variety of activities designed to support the next generation of female professionals in STEM at Los Alamos.

Today's women continue the work that their predecessors—the female scientists, engineers, and technicians of Los Alamos—started more than 75 years ago. We look for and identify additional opportunities that foster career growth and improve working environment for Laboratory staff.

With the guiding force of ERGs, such as the Atomic Women, we stand ready to address evolving challenges and create opportunities for women in STEM fields and in nuclear security at Los Alamos National Laboratory.

V. Works Cited

1. A short history of women at Los Alamos. *Los Alamos Natl. Lab.* (2018), (available at <https://www.lanl.gov/discover/science-briefs/2018/March/0322-history-of-women.php>).
2. Inclusion and Diversity. *Los Alamos Natl. Lab.* (2021), (available at <https://www.lanl.gov/careers/diversity-inclusion/index.php>).
3. W. Spivey, Her-story. *Los Alamos Natl. Lab.* (2021), (available at <https://discover.lanl.gov/publications/national-security-science/2021-spring/womens-timeline-feature>).
4. Employee Resource Groups. *Los Alamos Natl. Lab.*, (available at <https://int.lanl.gov/employees/diversity/resource-groups/index.shtml>).
5. Dave Eyler: Success through creative thinking, living in the now. *Los Alamos Natl. Lab.* (2020), (available at https://int.lanl.gov/news/news_stories/2020/january/0122-dave-eyler.shtml).
6. Atomic Women Resource Group. *Los Alamos Natl. Lab.* (2021), (available at <https://www.lanl.gov/careers/diversity-inclusion/erg/atomic-women/index.php>).
7. Associated Press, Los Alamos Lab Makes Pledge to Tackle Gender Barriers. *Usn. World Rep.* (2019), (available at <https://www.usnews.com/news/best-states/new-mexico/articles/2019-11-26/los-alamos-lab-makes-pledge-to-tackle-gender-barriers>).
8. Los Alamos National Laboratory commits to advancing gender equality in nuclear policy. *Los Alamos Natl. Lab.* (2019), (available at <https://www.lanl.gov/discover/news-release-archive/2019/November/1120-gender-equality-in-nuclear-policy.php>).
9. 2021 Summer Physics Camp for Young Women. *Los Alamos Natl. Lab.* (2021), (available at <https://www.lanl.gov/careers/career-options/student-internships/high-school/womens-summer-physics-camp.php>).
10. Los Alamos Press Highlights: Science Fairness. *Los Alamos Press Highlights* (2018), (available at <http://lareport.blogspot.com/2018/04/>).
11. Atomic women. *Los Alamos Natl. Lab.* (2021), (available at <https://www.lanl.gov/discover/publications/national-security-science/2021-spring/atomic-women.php>).

VI. Further Reading

- Atomic Heritage Foundation, Women Scientists in the Manhattan Project. *Atomic Heritage Foundation* (2018), (available at <https://www.atomicheritage.org/article/women-scientists-manhattan-project>).
- Kelly, Cindy, Voices of the Manhattan Project. *Voices of the Manhattan Project* (2019), (available at <https://www.manhattanprojectvoices.org/taxonomy/term/4>).
- R. McDonald, Women Scientists of the Secret City. *1663* (2017), pp. 10–15.

- The Women’s Issue. *National Security Science* (2021), (available at <https://www.lanl.gov/discover/publications/national-security-science/2021-spring/index.php>).

VII. Appendix: Photos from Atomic Women Group’s Events and Activities



[11]



[6]



