



Ava Helen Pauling

PARTNER, ACTIVIST, VISIONARY

Mina Carson

Ava Helen Pauling



Portrait of Ava Helen Pauling by Alice Neel. Photograph by Ms. Lida Moser. Courtesy of Alida Anderson Art Projects, LLC.

Ava Helen Pauling

PARTNER, ACTIVIST, VISIONARY

Mina Carson

OREGON STATE UNIVERSITY PRESS • CORVALLIS

The paper in this book meets the guidelines for permanence and durability of the Committee on Production Guidelines for Book Longevity of the Council on Library Resources and the minimum requirements of the American National Standard for Permanence of Paper for Printed Library Materials Z39.48-1984.

Library of Congress Cataloging-in-Publication Data

Carson, Mina Julia.

Ava Helen Pauling : partner, activist, visionary / Mina Carson.

pages cm

Includes index.

ISBN 978-0-87071-698-0 (alkaline paper) -- ISBN 978-0-87071-699-7 (e-book)

1. Pauling, Ava Helen. 2. Pauling, Linus, 1901-1994--Marriage. 3. Women political activists--United States--Biography. 4. Political activists--United States--Biography. 5. Pacifists--United States--Biography. 6. Social justice--United States--History--20th century. I. Title.

CT275.P47895C27 2013

973.91092'2--dc23

[B]

2012044618

© 2013 Mina Carson

All rights reserved.

First published in 2013 by Oregon State University Press

Printed in the United States of America



Oregon State University Press

121 The Valley Library

Corvallis OR 97331-4501

541-737-3166 • fax 541-737-3170

<http://osupress.oregonstate.edu>

Dedication:

To Lyn and Ricky

Table of Contents

| | |
|---|------|
| Acknowledgments | viii |
| Introduction | 1 |
| Chapter 1: <i>The HIM Book</i> | 9 |
| Chapter 2: Becoming Mrs. Pauling | 33 |
| Chapter 3: “Let’s make a rigid rule that I go no place without you” | 67 |
| Chapter 4: “A Team of Paulings” | 99 |
| Chapter 5: “The Second X Chromosome” | 133 |
| Chapter 6: The Prime of Life | 153 |
| Afterword: “A very strong sense of what is right and of what is not right” | 181 |
| Notes | 191 |
| Index | 219 |

CHAPTER 1

The HIM Book: 1903 to 1923

Some day I will figure out which volume my love occupies and how much it weighs.

– Ava Helen Miller, June 1922¹

Like many people without money, I grew up with very little self-confidence.

– Ava Helen Miller, November 1979²

They lived happily ever after.

Many twentieth-century women were brought up to expect or hope for this joyous culmination, as they were taught to merge their identities with those of their husbands: their childhoods just a prelude to “happily ever after.” In previous centuries, married women had sacrificed their legal identities along with their fathers’ names. By the 1920s, when this particular love story unfolded, state property laws had been moving away from “coverture” for a hundred years. But it would be almost another century before most American women assumed a cultural as well as technical right to autonomy within marriage.

This love story was a little different. To be sure, the two Oregon adolescents who met in college and married a year and a half later looked a lot like their peers at the Oregon Agricultural College. Both of their families were middle class, at least in aspiration, but lived often on the brink of respectability: both were mother-headed households challenged to make ends meet. While Ava Helen Miller followed at least three siblings to Oregon Agricultural College, and lived with family members in a house near campus, Linus Pauling broke away from his dotting and needy mother to follow his passion for chemistry down the Willamette Valley from Portland. Both young people were bright,

Ava Helen Pauling



Left: Ava Helen in 1914, approximately ten years old.

*Below: The Miller girls in 1912.
Annotations by Linus Pauling.*

Right: The Miller girls in a family car. Ava Helen is on the left.





naïve, and used to hard work when they arrived on the Corvallis campus, Linus Pauling in 1917 and Ava Helen Miller in 1921.

Born in 1903, Ava Helen Miller was the tenth child in a family of twelve. Her father, George Richard Miller, had emigrated from Hamburg, Germany. He was a teacher and then a farmer in Beavercreek, Oregon, a rural hamlet southeast of Portland.³ Apparently he took up a 160-acre plot in pursuit of some landed dream. He was also a liberal Democrat with socialist ideas.⁴ Ava Helen's mother's parents had migrated to Oregon by covered wagon. Nora (Elnora) Gard, one of their daughters, became a suffragist. As would happen for her sixth daughter, Ava Helen, Nora met her future husband as a student in his class.⁵ They married in 1886. George Miller was almost thirty and Nora Gard just eighteen. Ava Helen inherited her father's eyes and absorbed his ideas. Some of the sisters remembered Ava Helen as her father's special pet.

The many Miller children learned to argue politics around the dinner table. They also learned to work the farm. George was hard on the children, probably very hard. There is an unverified family story of the sheriff coming out to the Four Corners farm and warning Nora Gard Miller that if he heard any more about the sons being abused, he would arrest her husband.⁶ Miller may also have been rough with the daughters—all, according to family legend, except Ava Helen. When Ava Helen was nine, her parents divorced and her father left the household and eventually also Oregon. Special pet or not, she recorded starkly as a college student: "My father went out of my life when I was nine years of age. I don't remember much about him."⁷ Ava Helen saw him at least once more, in March 1926, when she and Linus passed through Chicago on the way to Germany for Linus's Guggenheim year.⁸ Her father had just remarried and lived with his second wife, Minnie, for about twelve years. Minnie Miller died in 1938, and George Richard Miller in 1949.⁹



Milton Miller
dressed for
track.

Sometime after her parents' divorce, her family left the farmhouse and moved to nearby Canby, so the children could attend school. The youngest three girls were the "little girls" together. Despite a broad age range, the family seems to have been tightly knit, at least during Ava Helen's childhood, and the long line of girls took many opportunities to pose for snapshots. They were strikingly pretty, with deep-set eyes, and their four brothers were conventionally handsome. George and John Miller were significantly older. Clay and Milton were still at home when Ava Helen was a little girl, and the family built outings around their high school activities. She remembered later that for some reason she hated Milton running track, and at the age of nine she cried whenever she attended a meet "and also cursed Mr. Ralston [Milton's coach] with all of the profane words of a 9 year old vocabulary."¹⁰ During the Great War, both Clay and Milton enlisted in the army and shipped out to France, as did her brother-in-law Walter Spaulding. They all came home again.

Ava Helen excelled in her schoolwork. She and nineteen classmates finished eighth grade in the spring of 1918; she delivered the graduation essay and sang a solo. After grammar school she moved to Salem and lived at her sister Nettie's house, so she could attend Salem High School. She had already begun studying piano in Canby. Her Salem piano teacher persuaded her to offer a recital in the spring of her first year of high school; she received a polite notice in the Salem paper.

Though she was known by family and friends as "Ava Helen" for most of her life, the cover of a pocket notebook from her junior or senior year of high school is signed, simply, "Ava Miller." On both sides of the lined pages, she jumbled notes from the classes she was taking at the time: English, Spanish, chemistry, math, and possibly history. (There are notes on the political functions of coffee houses in English history, probably taken in a classroom lecture.) Many pages are ripped or cut out of this slender book, and the notes are random. She developed early her lifelong habit of taking notes on whatever paper was at hand: old calendars, spiral notebooks, the backs of letters, hotel stationery.

She seems to have been close to at least one teacher in Canby or Salem, Winifred Helen James, who taught English 7 and 8. In 1921, perhaps to commemorate her high school graduation, Miss James gave her an inscribed copy of a guided journal called *The HIM Book*, in which Ava Helen later recorded fragments of her life that, pasted together, offer poignant glimpses



Ava Helen and her Canby, Oregon, middle school classmates. Ava Helen is third row up, third from left.



Ava Helen with girl friends in her senior year at Salem High School, 1921.

into her girlhood world.¹¹ Her notes suggest a lively, flirtatious disposition. There were plenty of boys to write down in *The HIM Book*, even if some were cousins. She called her brother-in-law, Walter Spaulding, with whom she lived on Court Street in Salem during her high school years, “spoiled, selfish and narrow-minded,” and remembered that they had had one “very bad fight” in which Walter had apparently handled her roughly. She intervened on Nettie’s side in the couple’s frequent arguments, and later told Linus that Walter had treated her sister badly (whether he physically abused her is unclear).¹² On the other hand, she felt constrained to call him “good-hearted,” and conceded that he was good to her when she lived under his roof.¹³

Ralph Hamilton, Wallace Griffith, and Keith Brown also found places in Ava Helen’s HIM records. She filled in this book on the occasion of her engagement to Linus Pauling, and the intent was to show her beloved these bits of her heart. Thus the mischievous little notes of teasing and false regret: “He joined the navy during the war,” she wrote of Claire Haines of Canby, “and I have ever felt happy to think I refused to kiss him good-by which perhaps took a bit of conceit out of him. [Haines was] married in 1921.”¹⁴ On the back of a photograph of Haines she wrote in retrospect: “my heart’s first flutter.”¹⁵

There were limits to her teasing. Deeply in love almost from their first acquaintance, she wrote of Linus, “I learned Chemistry from him. We studied Love together.” And farther down: “I want to see him in my son.”

The Spaulding household in Salem, however uncomfortable at times, was probably lively and certainly close to the state’s political heartbeat. Her sister Nettie was secretary to one of the Oregon Supreme Court justices, so there was a direct link to affairs in the capital, and 1630 Court Street, the Spaulding home, was just a few blocks’ stroll from the Supreme Court building and the State Capitol. Ava Helen carried her father’s Democratic politics into her adolescence; of a family friend, an admired physician, she wrote: “We quarreled about politics. He is a Republican.” During their courtship, Ava Helen confided to Linus that her childhood had been full of “terrors.” We have only his response to that confession, and the terrors go unnamed. She may have been referring to the terrors on the farm before George Miller left, or they may have been the Spaulding family quarrels, which seem at times to have gotten physical.¹⁶ Linus swore in return that they would never frighten their own children.

Ava Helen graduated from Salem High School in three years. She was class president her senior year. For her senior class picnic at Silver Creek Falls that spring she helped organize the food for a class of one hundred

twenty-five. She dared to kiss a boy for the camera. She was a girl of fun and will, as well as a sense of duty.

Ava Helen followed the family path to Oregon Agricultural College in the fall of 1921. The General Catalogue lists four of Nora Gard Miller's children as enrolled in 1921-22: Milton Marion Miller, a senior in agriculture; Clay Carl Miller, a junior in agriculture; Mary Maxine Miller, though younger than Clay, a class ahead of him as a senior in home economics; and Ava Helen Miller, a freshman in home economics. Five Miller children were past college age in 1921, and two were younger. Lulu Gorgo Miller, the daughter just ahead of Ava Helen, was not enrolled at OAC.¹⁷ Nora Gard Miller maintained a house in Corvallis, at 15th Street and Washington, to house several if not all of her OAC-enrolled children.¹⁸

Like most women at OAC at that time, Ava Helen enrolled in more courses than a twenty-first-century student might imagine juggling: clothing and textiles, hygiene, physical education, Spanish, French, social ethics, general chemistry, library practicum, technical English, food chemistry, food selection and preparation, child care, and introduction to economics.¹⁹

Located in Corvallis, a town at that time of 6,500, Oregon Agricultural College in 1921 enrolled five thousand students taught by two hundred fifty faculty members. Students could choose a wide range of extracurricular activities, including athletics, theater, journalism, and music. Campus "rook" traditions, in which freshmen wore beanies or ribbons, were policed



Nora Miller in front of the house she maintained for her children on S. 15th Street in Corvallis, 1924

by upperclassmen, to whom the first year students had to defer. There was no smoking on campus, and no crossing the lawns. Students were expected to attend athletic events, but the men were not allowed to “fuss”—that is, to take women to the games as dates. Some students joined fraternities and sororities. Student publications and photos suggest a lively, fluid social life.

In contrast to the University of Oregon in Eugene, at the southern tip of the Willamette Valley, OAC was the land grant college and its program offerings leaned toward agriculture, business, engineering, vocational education, and home economics. Though the sciences and humanities were organized into departments, they were also relegated to service offerings, no degree being available in those disciplines. In the fall of 1922, recognizing OAC’s growing attractiveness to out-of-state and



Formal portrait of Ava Helen Miller, 1922.

international students, the college for the first time charged non-residents a higher tuition. The brick and frame buildings clustered around a well-groomed campus. The original thirty-five-acre site established in 1887 had grown to three hundred fifty to accommodate the agricultural programs.²⁰ The Willamette Valley had been a garden spot since the days of the Oregon Trail. Beyond Corvallis, “the glens and gorges of the Coast Range,” as the General Catalogue gushed in 1923, “... the distant splendor of the Cascades, ...with their wealth of trees and the perennially snow-capped peaks—Hood, Jefferson, and the Three Sisters—present a constant panorama of picturesque mountain scenery.”²¹

Home economics majors took two full years of chemistry. Freshmen took general chemistry; organic chemistry came in either the freshman or sophomore year, followed by two terms of food chemistry. The faculty often scrambled to staff class sections in the larger courses. On the first day of the winter term of 1922, the young women in General Chemistry 102 were startled to see a tall, thin young man stride into the Science Hall classroom and stand at the instructor’s desk. Nobody knew who he was. Both Paulings



*Ava Helen,
Linus, and two
friends, 1922.*

remembered some details of that day the same way. Linus Pauling, the new student instructor, ran his finger down the list of students and asked Miller, Ava Helen, what she knew about the properties of ammonium hydroxide. "I don't know how it happened, just good luck I picked that name," he joked years later during an interview for the popular science program NOVA. "Who knows? I might have been married to Emilia Bauersocks if I happened to pick that name."

"Allegra Magreal," his wife interjected as if they had often shared this joke.

"Allegra Magreal. Yes," Pauling laughed.²²

Ava Helen found herself thinking about this instructor. "We thought it was interesting that he had his black curly hair parted in the middle," she reminisced. She and her friends looked forward to the next class with this young instructor because he was so "knowledgeable." Linus Pauling began stumbling over himself when he dealt with Miss Miller. At first she caught no special signs of interest from him – and she was watching for them – but suddenly there was a note from the instructor in her lab notebook, oddly referring to an incident in recent years where another instructor had been reprimanded for taking an inordinate interest in one of his students. Pauling asserted that he did not want to be caught out for the same offense. Bridling at Pauling's awkward gambit – though she had been grilling one of his fraternity brothers about him – Ava Helen walked up to him after class and said that she expected him to teach her chemistry and nothing else. A few weeks later they took their first walk across campus with each other. To his horror, as they crossed a creek Linus elbowed Ava Helen's nose, bumping her hard enough to bring blood. It hurt, but gave her one more thing to tease him with.

Left: Linus Pauling in his OAC freshman beanie.

Right: Ava Helen and Linus at Linus Pauling's graduation from OAC, 1922.

Far right: Ava Helen Miller in 1922.



The courtship developed quickly. His compunctions had flown away, judging from the notes he and Ava Helen passed back and forth on her homework. "I simply can't remember this producer gas," she wrote on one assignment in May 1922. "I'm very, very sorry. Please don't think I'm not bright."

"I don't," responded her avid beau. "In addition to having all your other endearing qualities, you are the brightest of girls, sweetheart."²³

In the 1920s there were fewer ethics codes or social prohibitions against these liaisons.²⁴ From the beginning Ava Helen called herself Linus's "little girl," and given her petite stature and his premature status as an academic authority at the age of twenty-two, it is not surprising that their early communication took the comfortable form of male dominance and female compliance.²⁵ But that relationship model was complicated by Ava Helen's underlying willfulness and Linus's unique brand of sensitivity.

Though Linus Pauling did take his own intellectual promise seriously, his private writings also reveal self-doubt and modesty. An underage freshman, ready to enter college before he finished high school, he questioned himself



in his journal a month before entering OAC in the fall of 1917. He compared himself to a friend, also getting ready to attend OAC: “big, manly Paul Harvey, beside whom I pale into insignificance. Why should I enjoy the same benefits the [sic] he has, when I am so unprepared, so unused to the ways of man?”²⁶ In fact Linus Pauling loved college and relished his independence from his widowed mother, Belle, who had been loath to part with him. As a sophomore, just seventeen years old, Pauling started to make a mark in his chemistry and math classes.²⁷ The summer after his second year he earned good money on a road-paving crew, surveying the paving, and sent the money home to his mother to keep for his college expenses. At the end of the summer Belle surprised her son with an empty bank account; she had hijacked his money for household expenses. He could not return to OAC. It seemed the road crew was his fate. Years later he admitted to his son Peter that his desperation that fall – and his very real hunger – had probably led to a lifetime of anxiety about money.²⁸

In late fall he got an offer out of the blue to teach quantitative chemistry at OAC, and he leaped at the opportunity. Instead of learning to drive the steamroller that he had overturned the summer before, he was elevated over his peers as an instructor at the age of eighteen.²⁹ Not enrolled formally in classes that fall, Pauling had the opportunity to forge ahead in his chosen discipline and learn to teach at the same time. Among other courses, he began teaching the home economics chemistry sequence. By the time he strode into Ava Helen Miller’s classroom in the winter of 1922, he was a veteran even though just a senior, five months from graduation.

Ava Helen Miller must have found it exciting to date her instructor. Though he had arrived at OAC as a sixteen-year-old naïf, he had already kissed a girl (Gwendolyn, for the “first” and “last” time, “thanks be,” he wrote obliquely).³⁰ He may have kissed a few more along the way (of Irene Sparks he wrote, during the fall of his freshman year, “She is the girl for me”).³¹ Pauling’s reflections on college life and his own intellectual growth were naïve, optimistic, and full of youthful grandiosity. His junior year entry into the College Orator contest reflected his fascination with nothing less than the evolution of the earth and humanity with it. On the latter, he was reserved. “We are not the flower of civilization,” he wrote. “We are but the immature bud of a civilization yet to come. We are children of the dawn, witnessing the approach of day.”³²

The sweethearts spent many hours together between March and May, beginning to develop the private language that suffused their letters for the next fifty-nine years. They made plans to attend the Prom in May. Linus graduated with an A average, delivered the class oration in June, and accepted the California Institute of Technology's (Caltech's) generously supported admission offer. In a last stab at professional propriety at the end of spring term Chemistry 103, Linus arbitrarily lowered Ava Helen's grade, so nobody would think he favored this lively young freshman, now his fiancée.³³ She resented that for years afterward.³⁴ In one of his first letters to her, sent in early May from his mother's home in Portland, he expressed surprise that there hadn't been more of an uproar about the young couple's announcement of their engagement. "No one seems at all worried or anything," he wrote. "My dear mother hasn't evinced the curiosity I expected—it may be because I talked of you so much during spring vacation."³⁵

As a senior Pauling was quite clear about what he wanted to do—Chemistry—and where he was going—to graduate school at Harvard, Berkeley, or the new California Institute of Technology—until his infatuation with Ava Helen briefly threatened to derail his life project. Occasionally he wavered. "Up until the time you came into my life," he told her, "my work was sufficient for me."³⁶ Perhaps he should marry her right away, work for a while to save money for graduate school, and follow his dream later? He worried about her being idle or anxious; he nursed some guilt at keeping her waiting while he followed his passion. Their mothers wanted nothing to do with an early wedding. Nora Gard Miller wanted this daughter to finish college. Belle Pauling probably wanted no interference with her own claim on Linus's earnings, but she argued that he needed to go to graduate school and get his Ph.D. before he committed himself to this marriage. She did tell Linus's sisters and cousins what a "sweet" girl Ava Helen was.³⁷ The young couple was determined to marry, but complied with their mothers' wishes and laid plans for several years away from each other.

As early as June 1922, just a few months after they had begun to date, they were sharing intimate details. Linus wrote not just about his reading, but also about his finances, his diet, his sunburn, and his conviction that he was getting broader across the chest. "When I stand in my birthday suit in front of my big mirror my chest seems larger than it used to be. My hips are broad compared with my waste [sic], but not compared with my chest. I have a number of rather fine dark hairs on my chest too—perhaps some day I'll be all fuzzy. I don't think so, though, and I don't care to be."³⁸

From Linus's work site in Warrenton, Oregon, that summer of 1922 Ava Helen received daily letters from her doting and busy fiancé. When he

wasn't doing his paving inspector work for the state highway department, he was reading French and working physical chemistry problems supplied by his soon-to-be Caltech mentor, A. A. Noyes. A special office for the paving inspector had yet to be built at Astoria, and Linus got to oversee that project. She read letters filled with cheerful reflections on his co-workers, his chemistry problems, his hopes for the future, his successful attempt to secure a loan from his Uncle Jim ("The Miller girls are splendid women and I am quite sure this particular one will make you a good helpmate," Linus quoted his uncle), and his overflowing love for her ("you are the dearest girl in the world").³⁹ Although we have few of Ava Helen's letters to Linus from this period, his own daily letters respond to hers in detail.⁴⁰ She wrote to him about her financial worries, and he reassured her that he would share his loan and his earnings with her. For the first time in his life he felt free to spend or save the money he earned, without accounting to his mother for every dollar. A loan of \$1000 from uncle Jim Campbell was earmarked for his mother and sisters, so Linus could move on to graduate school without lingering worries for them.⁴¹ To his future wife he reported that he had "never become intimate with my family." Despite his mother's high expectations of his dutiful obedience, and his own guilty feelings as he tore away, he kept a large part of his inner life barricaded away from them.⁴² Once he admitted to her that he did not help them much financially, whereas his sister Pauline did.⁴³

He was eager to protect her, too, from the careless comments of their friends, who suggested that a long separation might lead to Linus looking at other girls. "Being apart won't make us forget each other, sweetheart—nothing can separate us in spirit."⁴⁴ They spent the July 4 weekend together that summer, and other evenings every so often. By the end of July, Linus's restlessness had issued in a new plea to his beloved: Would she consider marrying *this* September, rather than waiting another year, or two, or three?

This query came out of the blue. The prolonged separation ahead while he completed graduate school in California and she slogged through OAC was suddenly intolerable. But more pressing even than their families' reluctance to bless a precipitate union was the money question. Linus knew that he must do his graduate work. As he saw it, the only way to assure her lifelong happiness was for *him* to be "out-of-the-ordinary."⁴⁵ Though this sounds hilariously narcissistic now, there was wisdom in his reasoning. He needed his work to be happy: to be complete. He reassured her that, if he had to choose, he would choose her over his chemistry, but this was not always the tune he played, and fortunately for him, Ava Helen did not want him to make that sacrifice. For the next fifty years she hewed to the same standard. She relied on him to be extraordinary. The time would come

when she would look back with regret at having failed to seize that kind of ambition for herself. But she did not begrudge him his fame, won by brilliance, persistence, and her own household management. She thrived on his fame.

In the summer of 1922, Linus tried to figure out how much money they would need to live together in Pasadena as he pursued his graduate studies and she continued her education at one of the California universities. How much of a loan would they need to supplement his \$600 stipend?⁴⁶ He wondered if she would be willing to share a house with his OAC friend Paul Emmett, who would also attend Caltech, and Paul's mother. He worried that they would not be able to afford a piano for Ava Helen. He knew they could hardly afford the wedding they hoped for. As he wrote, he started to talk himself out of what he knew was an impractical scheme. Yet he waited anxiously for her reply. Touching back to the vivid everyday world, he asked her about the crabs he had sent over from the coast. He returned to his fantasy. "A few days ago this would have seemed like the wildest dream. Now it seems not improbable. I'm not building my hopes high, tho, sweet. I wish you could talk it over with your mother."⁴⁷

Before she answered he rushed a second letter into the mail. He called himself "careless" for proposing an early marriage. "Dear heart, I so abhor mediocrity. I want our life to be wonderful." He knew he must devote his energies to graduate study and somehow simultaneously carry out this agonizing long-distance courtship.⁴⁸

Ava Helen wrote back to Linus and offered a plan. They could get ahead financially if she got a job to supplement their income while he studied. He nixed that idea. "You are not equipped for work you like nor can you make a great deal."⁴⁹ During the last week of July Linus's feelings raked around like a pinball. He brought himself to the point of believing that they would certainly marry, and even planned the day of the event and the honeymoon (a night in a hotel).

Then he spoke to his mother. Onto his longing Belle poured all the cold water she could chill. Why didn't Ava Helen's family finance her schooling? Why hadn't she worked over the summer? Why couldn't she work in Oregon over the coming year? What if something went wrong in his graduate studies? What kind of gratitude would an early marriage show for the "sacrifices" his family had made for him? Surely he owed them the Ph.D. (an interesting assertion from the woman who had begrudged him his bachelor's studies). What if poverty embittered the young couple? What if they had a baby? What if one of them fell ill? Further, the Emmetts could not provide a suitable place to live in Pasadena. Mrs. Emmett disapproved

of Paul even dating before he finished his graduate work. And they too were struggling financially.

It was a litany of disasters that only a mother's mind could marshal. Linus's dreams were shattered. He had planned to write to Ava Helen's mother, but now he even gave up that step.⁵⁰ "Dear heart, I believe now that perhaps it would be unwise of us to be married. ... I think that my rather blind enthusiasm has caused me to forget things."⁵¹ Now repeatedly he asked her not to tell either of their mothers that he was helping her out financially. The young man's agony and the irresolution of life in two places resonates through the correspondence. Even his mother had to admit that she had "never seen a couple so completely gone on each other."⁵² However, Linus's unquenchably cheery disposition provided ballast. While he was being pulled apart by irreconcilable desires, he was also enjoying crab fritters, mayonnaise, malted milk, and Ava Helen's candy. His appetite was healthy and his taste for his chemistry problems unabated. He made friends easily at the work site and enjoyed his neighbors across the hall and the woman who ran the restaurant where he ate most meals. He was not a man waffling in his love or evading his beloved, but he believed in the future and could face disappointment in the present. "We are making our small sacrifice now so that our gift to the world may be perfect."⁵³

And Ava Helen was a woman who, for all her little-girl flirtatiousness, could cut to the heart of the matter. "It hurt me a little," Linus admitted in a letter a few days later, "that you thought it was just because of my mother's wishes that we aren't married." He wrote that he would do whatever Ava Helen wished — though he did not see how he could resign his assistantship or manage his loans. She had acutely assessed his dependence on Belle's good opinion, and perhaps used it to poke him after her disappointment. But she also stuck to her sensible belief that they needed to minimize their financial dependence, and she too resigned herself to waiting for marriage.⁵⁴

In early September Linus detoured through Corvallis on his way to stay with his family in Portland for a few days before taking off with Paul Emmett for their big adventure at Caltech. "They are too dense to ask if I had been to see you, and I'm not going to tell them outright."⁵⁵ He planned to circle back through Corvallis one more time. There is an unusual break in the daily letters between September 6 and September 16, so the couple probably spent a few days together in that period of time, either in Corvallis or perhaps Portland. "Did you get to Corvallis all right? Did you cry because your bad boy left you?" Linus wrote on the 16th.⁵⁶

Her fiancé's description of his trip to California, and his lyrical portraits of Pasadena, the mountains, and the coast, suggest one compelling reason the

Paulings made their lifelong home in California. From the beginning Linus was entranced by the state's natural beauty and its architectural charms. Housing was expensive, though. He stayed in a hotel while he waited to move into the Emmetts' new house, bought for \$6500, which struck Linus as very high.⁵⁷ "Our house is a beautiful little place, as are all of them here. Pasadena is lovely – there are all kinds of palms – some forty feet tall and some three feet thru. There are orange groves a hundred feet from our house, and all the way to school, and there are palms in front of the house. It is all beautiful. The pepper trees are delicate lacy things. I'm enclosing some leaves," he wrote, sending her a bit of his new world; " – they may lose their odor, tho."⁵⁸ He fantasized all year about how they would hike the hills together, and perhaps have their own little house.

The dense sheaf of letters from Linus to Ava Helen between June 1922 and their wedding date a year later, and the few surviving notes from Ava Helen back to her lover, make it clear that when the couple spent time together, they were completely engaged with each other. They were sexually involved from very early in the relationship, and their letters use a private language that is not difficult to decode. "I uy and uy and uy oo," wrote Linus repeatedly.⁵⁹ "I uz oo, with all my heart," he wrote in a variant that seems to have carried the explicit translation of sexual intercourse. Their letters refer to rare face-to-face meetings and previous letters. Linus apologizes a number of times for "hurting" Ava Helen, and the context leaves no doubt that the "hurt" was sexual in nature. The couple educated themselves as best they could. Ava Helen turned to women friends like "Pebbles," a sorority woman at OAC. "She is good to tell you things," wrote Linus. "Your mother should have told you. I have never learned anything in the right way, except by reading. Our last Sunday was beautiful, sweet. I'm so glad you were not hurt. I didn't know you were before."⁶⁰

The couple read intensively, braving the cultural bombshells exploding in the postwar period. Pauling urged Freud and Havelock Ellis on his fiancée. He recommended William J. Robinson, *Woman: Her Sex and Love-Life*, which he told Ava Helen was intended for girls by "the foremost American authority on sex matters."⁶¹ He confessed that Robinson's instruction had allayed a number of his own fears about his sexual and romantic needs and attitudes. "For example, I love you with all my heart and mind and soul, and yet I can leave you and work all the harder at my vocation because of my love." He had worried about enjoying his work in the midst of the great love affair of his life; he had also perhaps been feeling a bit guilty for dwelling on their sex life. Robinson reassured him. "Also, I have found that boys naturally think of sexual matters." Despite his worries, he believed

that he and Ava Helen were “perfectly united.”⁶² Robinson wrote for the “average case,” and Pauling was certain that he and Ava Helen were “above the average,” as witness his extreme sensitivity and faithfulness to her. (“The average man isn’t very good. I’m surely glad we found each other young,” he wrote, though it isn’t clear whether he was more worried about his turning bad or Ava Helen’s meeting some other man who was not “very good.”) Robinson also asserted that men loved their sweethearts more as sexual intimacy increased, “contrary to your mother’s opinion.” Linus reported to Ava Helen that Robinson recommended “uzzing” (probably not Robinson’s term) three times a month.⁶³ Specific recommendations for sexual intercourse during pregnancy followed. In a rapturous conclusion to this long confessional letter, Linus dwelled on Ava Helen’s “beautiful pure white little body” point by point. “Sweet girl, my one desire is to make myself better for you.” With a nod to humor in the midst of these sentimental passages, he signed himself “Linus, who is Ava Helen’s husband, and who loves Ava Helen, and who will always be good and true to Ava Helen, who deserves the goodest and truest man in the universe (that’s Linus: the egotistic cuss, he’s always saying high-flown things about himself).” In a final burst of adoration, he concluded: “Kisses, dear, and hugs, and tongue-touches, and uzzes, and wee Ava Helens and Linuses, and gentle gentle uzzes, and perpetual happiness and content.”⁶⁴

Ava Helen wrote back in the same frank, fond tone. This couple was learning sexual negotiation. On the one hand she exclaimed, “Pooh! I’m not scared to tell you one thing! How could you hurt me way down there?” But she also remarked that he’d better not get used to waking at four in the morning (as he reported in one letter), because they had already reached “a little gentleman’s agreement about uzzing every night.” She teased him that she would get “a little electric sign board” for “those mornings” to warn him away with the message: “No uzzing allowed.”⁶⁵

Linus Pauling and Ava Helen Miller were probably unusual among college youth in 1922 in their frank intimacy, their easy and passionate sexuality, even in an era of sharply increased cultural openness about sex. Pauling’s discussion of Robinson, along with his familiarity with Freud, Dostoevsky, Shaw, Upton Sinclair, and other modernist writers, puts him in a literate class that was, truly, “above the average,” as he proudly judged himself and his beloved.⁶⁶ In her now-classic study of 1977, *The Damned and the Beautiful: American Youth in the 1920s*, Paula Fass concluded that college students were indeed experimenting with sex, but in a peer-conscious and graduated set of behaviors that focused on “dating and petting,” in her terms, usually stopping short of sexual intercourse. “The

young first sanctioned eroticism and then imposed degrees and standards of acceptability."⁶⁷ In *Campus Life* (1987), Helen Lefkowitz Horowitz agrees, adding that dating became another way to establish social standing in the collegiate pecking order.⁶⁸ In this still marriage-oriented erotic culture, Linus and Ava Helen jibed with their peers nationally. In their relatively guilt-free enjoyment of intercourse, they may have been unusual, at least during their courtship in small-town Oregon in the early 1920s. But perhaps not. In her classic study, *Woman's Body, Woman's Right*, Linda Gordon cites several studies of premarital intercourse among women born between 1900 and 1909, which found that the percentage of women who had engaged in sex before marriage shot up from about a quarter of women born in the previous decade to around half of women questioned in Ava Helen's birth cohort.⁶⁹ Marilyn Yalom summarizes a long-term study by physician Clelia Mosher of forty-five middle-class married women between 1892 and 1920. A third of them reported regular orgasms in intercourse, with many more averring some measure of satisfaction with an active sexual life.⁷⁰

And forty-one of the forty-five in Mosher's study used birth control. By the 1920s, well-read college graduates would have been aware of the work of Margaret Sanger and others in advocating legalized birth control. After World War I, public practice rapidly outstripped the laws, and information about limiting birth, as well as other sexual issues, circulated more widely. William J. Robinson, Linus's favorite sexuality mentor, was also a national leader in birth control advocacy, both for eugenic reasons (to limit births among the financially and genetically challenged) and for reasons of marital health and happiness.⁷¹ As for Linus Pauling and Ava Helen Miller, we do not know how they avoided pregnancy. Aware as they were of contemporary theories of sexuality and marriage, it is tempting to believe they would also have been up to date on the technology of birth control.⁷² It is hardly surprising that this issue is not reflected in the correspondence. Though frank, their sexual talk was also coded.

Certainly Linus was fascinated with eugenics and firmly convinced that birth control was vital to the progress of humanity, as birth limitation would presumably allow "better" humans to prevail against poor, ill-educated families. He chimed in with Havelock Ellis on preventing conception "if the heredity is poor. Our children will have good heredity won't they, honey?"⁷³ He remarked later that a national system of clinics would be best, to instruct the poor and prevent "the breeding of crowds of sick, deformed, ignorant and unintelligent foreigners doomed to poverty and a life devoid of happiness." He remarked that those clinics wouldn't affect the practices of the "more intelligent and desirable classes," who knew what to do

already.⁷⁴ Despite this chauvinistic outburst, he understood that regulating or outlawing birth control would ultimately degrade his own union with Ava Helen. "Think how funny it would be, dear, for us to live our lives together and uz each other only about three times."⁷⁵ He entertained a dark fantasy in which, without any control, they would either have countless babies, or no intercourse. "We would be irritable, and our life would be ruined." He reassured her that she had nothing to fear in marriage—that they would not have children until she was ready. Meanwhile he longed for her, but swore he would not "uz" her again until their wedding night, to make it even more lovely.⁷⁶

This is one of our best insights, oblique as it is, into the young couple's use of birth control—at the very least their intention to use birth control in their future life together. In terms of their methods, we may guess that it was some combination of rhythm, withdrawal, and condoms, those being the most commonly available methods of avoiding pregnancy at the time. A diaphragm or "pessary" might have been difficult for Ava Helen to secure before the couple was married; afterward it may have been easier for her to approach her physician or pharmacist.

It is hard to imagine where the young couple found space to experiment and explore each other's bodies. One letter from Linus during his first year in California hints that Ava Helen's mother's house was one such place; he recalls her brother Clay catching them under a blanket, "with my uzzer up by yours ... And then we had to part," he concludes, without apparent anxiety or remorse.⁷⁷ After a January visit, he wrote, "I feel so sorry for your little uzzer. I'll be so careful with you, dear. Perhaps your uzzer is lonesome, dear wife. I feel that our love—we were so full of love, weren't we?—may have had something to do with it."⁷⁸

Any guilt in the love letters centered not on their rare nights of secret intimacy, but on their separation during this year of intensive courtship. Linus described a trip with the Emmetts over to the beach, then said he would not travel with them again, because he was happier doing his work, "for when I am doing it I feel that I am bringing you closer to me."⁷⁹ Linus continued to formulate plans to marry in a year and allow Ava Helen to finish college in California. Though there was no university for her in Pasadena, she might attend Occidental, five or six miles away. However, they would need a car for that. "I'll try to get a better position next year; perhaps at the end of it we will be better off."⁸⁰ She reported getting A grades in organic chemistry. She had been the best student in his classes the year before, and indeed by the spring of 1923 Linus asked her whether she too planned to be a scientist.⁸¹ Caltech was out of the question; it did not admit

women undergraduates until 1970—one year after Princeton and Yale, as undergraduate coeducation swept the nation.⁸² Linus also considered taking a job in industry, but decided that in the short run that wouldn't bring them any more money—probably a relief, since his heart was in academia. "I think, dear, that the best thing is for me to remain here for a while. I'll do more teaching, taking fewer subjects and less research, and get as much of a salary as I can."⁸³

Not just for Linus, but also for Ava Helen, passion was cut with common sense. In November she assured him that they made the right decision to wait. "We would have been so engrossed with Love that French and Calculus would have suffered." She argued that they might not have had the "will power" to "do as we should"—young minds and young bodies were "plastic," and she feared simply watching him and loving him rather than engaging in the duties of life.⁸⁴

Yet her ambivalence emerged in the form of teasing remarks, perhaps at some level meant to make Linus jealous. At OAC that fall, she took organic chemistry, both French and Spanish (an intriguing forecast of her later international orientation), Food Selection and Preparation (her worst subject, though she became quite a good cook), and gym. Organic chemistry was probably her most successful subject after French; she proudly reported that "crazy Mr. Quigly," who taught the course, told her she was the best student in the section. "Mr. Quigly talks to me lots. He is nice. I like him. ... He tells me lots of funny things that happened when he was in school. I love you, darling." She told Linus that she was trying to work up the courage to tell Mr. Quigly that her "husband" was a chemist; but her admiring remarks about her chemistry instructor followed by the *non sequitur* declaration of love for her fiancée suggest a splitting of energy and attention.⁸⁵

Ava Helen had been brought up to believe in her role as a helpmeet. "Lonely, lonely laddie boy, whose 'loaf-giver' I am," she wrote, affectionately, in October 1922, referring to Ruskin's definition of cookery. "My dearest wish is that you will find every meal perfect in appointment, in service, in delectability, in taste, and in nutrition."⁸⁶ Her own academic excellence was fun, stimulating, charming, but beside the point. "I'll never be in the lime light now for I don't ever see any one, and I have absolutely no ambition in those directions. I shall be always a fine, clean, noble woman who is willing to do anything for her husband." Again, though, in the next sentence she berated a classmate for her stupidity. "You shouldn't have passed her last year, and I told you she didn't deserve it. If she deserved a D, I surely should have had an A. I'm going to tell Doc Scott too some day. Just wait till he sees my Organic grade."⁸⁷ This was one of the first digs at her future husband

for downgrading her performance in the spring, to avoid the appearance of favoritism. The B in general chemistry rankled for years.

Ava Helen was both mischievous and frank. "Mary is playing the piano," she reported in her letter that evening, "which is driving me nearly crazy. She is picking out by the one-finger method 'By the Waters of Minnetonka.' It sounds like the 'Trickles of the Lost River.'"⁸⁸ (In a later letter she complained of Mary's overuse of the loud pedal. Linus sympathized.⁸⁹) Contrasting another instructor with the pleasing Mr. Quigly, she wrote, "I nearly die in Mr. Thurber's class, cause he is so dead and I want to say so badly what it is and he just creeps along. I bet if I put a tack on his chair, it would take him ten minutes to realize it was there and fifteen to get up."⁹⁰ When Linus lorded it over her, saying "smart" things or speaking angrily to her, she let him know and he apologized, abashed.⁹¹ She chided him for unfair characterizations of her in his letters. At the same time, she got in digs at him for his independent life in California. "The other thing you said," Linus wrote, his Achilles heel getting the best of him, "is that I was incorrect in saying I'd do what you wish, for I won't unless I also desire to. ... I am deeply hurt dear. Even though you believe it, will you please, sweet Ava Helen, never say it again to me?" But he moved on. In the next paragraph he was discussing the glories of scientific discovery, and the joy of sleeping without pajamas between them.⁹²

The couple also worked on the intersection of their belief systems and intellectual styles. He assumed that she shared his passion for chemistry and the astonishing scientific stew that was Los Angeles in those days. In February he sent a clipping from the Los Angeles Sunday *Times* detailing Arnold Sommerfeld's lectures on quantum physics ("Mighty Atom's Secrets Are Wrested from It").⁹³ A few days later he referred casually to the time when she would get her Ph.D., though usually he wrote of her simply finishing her bachelor's degree.⁹⁴ Like other liberal intellectuals, he despised the Ku Klux Klan and deplored the influence of religious fundamentalists in American culture.⁹⁵ He usually assumed that she shared these ideas.

He did lecture her occasionally on the logical fallacy of believing in an omnipotent God and believing that God is good (for a "good" and omnipotent God would not permit senseless human suffering).⁹⁶ In addition, they had a long exchange on faith healing, which her brother-in-law Walter Spaulding was pursuing for some physical ailment. Pauling rejected the idea that faith healing or spiritual healing had any basis except pure chance. Ava Helen took offense, seemingly more at his lecturing her than at his reasoning. He backpedalled. "Sweet, you mustn't think that I think I am superior to you, for it isn't true. It hurts me to have you think so. I used to think I was

superior to most everyone; it is somewhat of a surprise to find that you far out-distance me in many ways."⁹⁷

Still, he stuck to his position and couldn't resist recommending scientific authorities to bolster his skepticism. "Dear, if you think much of this divine healer read quite a bit on psychology, psychoanalysis and suggestion. I can see no reason why Christ or God would allow one man to make a few scattered partially successful cures. Why is not disease [done?] away with? If Christ or God intended to relieve the world," he pursued his relentless and fruitless logic, "is not the most simple way to merely relieve it, systematically and justly, [rather than] let a man make a few scattered haphazard cures? The mystery is great. I like to ignore all pedantic questions and merely live happily in the faith (or the assumption) that the duty of man is to help mankind to progress."⁹⁸

Ava Helen pretended to give in, writing to him, "as usual I'll have to call off my pet war dogs and call myself defeated." Linus protested her wording.⁹⁹ She bridled at his apparent assumption that she and he would merge when they were married. He hastily reassured her. "Your reasoning is very good in regards to our having our own individualities. All I want is that we should help each other to understand things. If we talk clearly and unreservedly of everything we won't have foolish differences of opinion, in our religious beliefs, for example, instead of trying to convert each other to our own ways, we shall seek as far as we can together."¹⁰⁰

Pauling was easily offended by what he perceived as poor manners. Maybe this was a defensive reaction to his lower-middle-class social status, or maybe he was genuinely repulsed. The Emmetts' practice of licking their knives at dinner disgusted him. "I shudder at the things they do." He and Paul Emmett shared a bed, usually sleeping in shifts, and he assured Ava Helen that when they were both in it, he kept way over on his side so as not to touch Paul. "He is careless about his person – he is very untidy," reported Linus primly.¹⁰¹ In March he expatiated on poor Paul's shortcomings: "It drives me wild – he swishes water through his teeth, and eats with his knife, and says 'these cheese,' and leaves half the buttons on his vest unbuttoned – I surely am odd."¹⁰² He confided that he read a letter carelessly left on the department stenographer's desk, from his professor, Fulton, at OAC. Fulton had said that Emmett was "probably better" than Pauling at mathematics, and "led the class in physical chem." To his credit, Pauling admitted that his indignation crumbled when he realized that assessment might well be true. "I know I have a tendency to place myself higher than I belong."¹⁰³ Still, it probably rankled that the uncouth Paul had been appraised as intellectually superior to himself.

By March the couple was actively planning their wedding, which would take place at Nettie's house in Salem, although throughout the spring the location remained tentative as Linus waited to hear if his grandmother might be able to attend. Ava Helen completed her winter term at OAC and did not enroll for spring term. She spent a week at her sister's Salem house on Court Street, and then returned to Corvallis.¹⁰⁴ Pauling planned to work for the Oregon Highway Department again over the summer. His Caltech professors were trying to figure out how to ease the young couple's financial worries while being fair to other students. Linus shared his excitement at having Ava Helen join him in California. The beautiful state continued to grow on him. "It hasn't been too warm, and the flowers are in bloom, and the orange trees, and calla lilies in everyone's yard. I love you, dear. Next year at this time we'll go for little trips in our old Ford, and we'll camp out on the desert, and sleep together in our sleeping bag, which will hold us close to each other."¹⁰⁵ At the end of April he consummated the deal with his major professor, Caltech chemist Roscoe Dickinson, to buy his old Ford for fifty dollars.¹⁰⁶

Ava Helen too seems to have been excited, and with her anticipation came heightened irritability and insecurity. Far away in California, Linus escaped the constant pressures of family bearing down on Ava Helen from all sides, although he continued to defend himself against his mother's accusations that he was an undutiful son.¹⁰⁷ He commented that she seemed "quite vacillating" about her own mother: "one day you write telling me how bad she is, and the next day how lovely she is." He concluded wistfully: "I hope you won't have the bad days with me."¹⁰⁸

Ava Helen complained not just about her own mother but about his as well. After a visit involving the two mothers – hardly a simple encounter – she wrote: "She was too peevish at me, and I don't care. I am getting tired of trying to get along with people. From now on she has to get along with me and I'm not going to waste any more tears crying about it either. My whole life has been an endeavor to get along with somebody and I'm sick of it."¹⁰⁹ She was not yet twenty years old, and a month away from marriage.

INDEX

- 442nd Infantry Regiment, 67
Acevedo, Martha, 182
Acheson, Dean, 160
Addams, Jane, 107, 142, 158, 173, 174
centennial, 112
Addis, Thomas, 60, 171, 175
treats Linus Pauling for glomerulo-
nephritis, 60
Allen, Donna, 163
Alloy, Evelyn, 128, 137, 173
American Chemical Society, 68, 73, 186
American Civil Liberties Union
(ACLU), 67, 68, 70, 111
American Friends Service Committee,
106, 116, 117
American Legion, 131
American Medical Association (AMA),
5
American Russian Institute, 159
Anderson, Camilla, *Saints, Sinners, and
Psychiatry*, 145
Andreen, Andrea, 109, 113
Anza-Borrego Desert Reserve, 183
Appeal by American Scientists petition,
87-88 (illus.), 101
Arnett, Katherine, 112
Asilomar, California, 122
Associated Press, The, 147
Australian and New Zealand Congress
for International Cooperation and
Disarmament, 90
Avery, Marjorie, 110

Baer, Gertrude, 111, 120, 122
Baez, Albert, 118
Baez, Joan, 118
Baez, Mimi, 118
Balch, Emily Greene, 107, 174
Barth, Karl, 113
Bauer, Corda, 144
Beavercreek, Oregon, 11
Beskow, Inga, 115

Big Basin Redwoods State Park, 183
Big Sur ranch. *See* Deer Flat Ranch
Bogart, Humphrey, 73
bombing, Sixteenth Street Baptist
Church, 131
Borgese, Elizabeth Mann, 157
Born, Max, 113
Boyer, Charles, 73
Braden, Anne, 124-25, 129
Braden, Carl, 124-25
Bragg, W. L., 52
Brooks, Van Wyck, 131
Brown v. Board of Education (1954), 128
Buckley, William, 154
Burns, George, 73

California during the Depression, 48
California Institute of Technology, 3, 23,
27, 184
admitting women students, 28
Biology Faculty honors Linus for
Nobel Peace Prize, 135
faculty pay cut during Depression,
47
inaugurates President Lee DuBridge,
69
institutional response to Pauling's
Nobel Peace Prize, 135
trustees, 69
Caltech. *See* California Institute of
Technology.
Cambodia, United States bombing of,
166
Cameron, Ewan, 170, 175
Camp Arcadia, California, 61
Camp Shelby, Mississippi, 67
Carnegie Hall, 116
Carson, Rachel, 143, 145
Carter, Jimmy, 173
Catchpool, Frank, 91, 175, 181-82
Cavendish Laboratory, Cambridge,
England, 80
Center for the Study of Democratic
Institutions, 154
Chadwick School, 85

- Chaplin, Charlie, 81
Charlton, Peter, 105
Chicago, 39
Chile, 172
Christian Register, 159, 160
Christiansen, Peter, 181
Church, Frank, 167
civil rights movement, 124, 127-29, 149, 155
Cohn, Alfred, 59
Colburn, Catherine, 134
Colby, Ruth Gage, 119, 138, 149
Cold War, 68, 131
Committee for the American Way, 68
Common Cause, 157
Congo, 109
Cook, Lola, 61
Cori, Carl, 186
Cori, Gerty, 186
Corvallis, Oregon, viii, 15, 23, 162
Cory, Catherine, 106
Cousins, Norman, 103, 104-6, 141
Creative Couples in the Sciences, 185
Crellin, Edward, 55
 endows Edward Crellin Laboratory, 55
Cuba, 109, 112
Curie, Marie, 134, 185
Curie, Pierre, 185

Davydov, Boris, 154 (illus.)
Dean of Canterbury, 158
de Beauvoir, Simone, 158
Deer Flat Ranch, 94-98, 116, 132, 144, 163
DeLario, Doris, 151
De La Verde, Lucila, 122
Detering, Olga, 92
Dickinson, Madeline, 108
Dickinson, Roscoe, 34, 108
Dingwall, Eric, 156
Dodd, Thomas, 100, 101, 110
Dostoevsky, Fyodor, 25
Dragoumis, John N., 133
DuBridge, Lee, 69, 135

Durr, Clifford, 123-24, 126 (illus.), 161
Durr, Virginia Foster, 122, 123-32, 137, 161
Eaton, Anne (Mrs. Cyrus), 113, 120, 146
Einstein, Albert, 173
Ellis, Havelock, 24, 26
Emergency Committee of Atomic Scientists, 73
Emmett, Paul, 22, 24, 30, 45, 59
Eugene, Oregon, 172, 173

Farmers Union Insurance Company, 124
Fass, Paula, 25
Federal Communications Commission (FCC), 73
First Unitarian Church of Los Angeles, 70, 129, 142, 149, 150, 158, 159, 160, 181
 Forum Committee, 150
Fontaine, Joan, 73
Fowler, Eleanor, 130
Frau und Frieden, 148
Freud, Sigmund, 24, 25
Friedan, Betty, 3, 155
 The Feminine Mystique, 3, 143
Fritchman, Frances, 161
Fritchman, Rev. Stephen Hole, 70, 159 (illus.), 160-61, 171, 181
Fromm, Erich, 113
Fulbright, J. William, 149

Gonzaga University, 162
Goodell, Charles, 167
Gordon, Lorraine, 146
Gould, Thea, 101
Great Depression, 144. *See also* California during the Depression
Greyhound Corporation, 127

Hager, Thomas, 63
Hammett, Dashiell, 81
Harris, Erna, 120
Hartman, Robert S., 162
Hatfield, Mark, 167

Index

- Heart Mountain Relocation Center, 67
Hedburg, Kenneth, 63
Heisler, Francis, 178
Hepburn, Katharine, 74
Herring, Frances, 115, 118, 139, 182
Herz, Alice, 162
Herzenberg, Lee, 6
Hiroshima, Japan, 72, 104
Hitler, Adolf, 58
Hollywood Community Radio Group, 72
Hollywood Independent Citizens Committee of the Arts, Sciences and Professions (ICCASP), 73, 74, 160
Hollywood Ten, 69
Holman, Hal, 183
Home Economics, 16
Horowitz, Helen Lefkowitz, 26
House Un-American Activities Committee (HUAC), 74, 81, 136-37, 159
Huggins, Charles, 169, 181
Huggins, Margaret, 181
Hutchins, Robert, 153
Hutchinson, Dorothy, 119

Innerst, Stuart, 134
Internal Security Act, 77
International Cooperation Year, 139
Iron Curtain, 90, 121

Jack, Homer, 125, 141
Janice Holland Award, 138 (illus.)
Jara, Joan, 172
Jara, Victor, 172
Johnson, Lyndon Baines, 149, 162
 administration, 5
Joint Fact-Finding Committee on Un-American Activities, California, 72
Joliot-Curie, Irene, 185
Joliot-Curie, Frederic, 185

Kamb, Barclay (Ray), 63, 81, 150, 154, 175, 177
 and stepfather Martin Ray, 81-82
Kamb, Barclay (Barky), 184
Kamb, Linda Pauling, 53, 54 (illus.), 57 (illus.), 61, 63, 76, 94 (illus.), 116, 132, 154, 165 (illus.), 168 (illus.), 177, 187, 188
 and Barclay Kamb, 81, 116, 154
 birth of, 53, 108
 children, 116, 150, 165 (illus.), 175
 marries Barclay Kamb, 82
 moves into Fairpoint Street house with family, 150
 at Reed College, 78-79
 at Westridge School, 78
Kamb, Sascha, 182
Kaye, Danny, 73
Kennedy, Caroline, 130
Kennedy, Jacqueline, 130
Kennedy, John F., 130, 138, 154
 administration, 5, 113
 assassination, 141, 142
Kent State University murders, 166
Kern, Jerome, 73
Kimura, Sam, 175
King, Martin Luther, Jr., 127, 141
Kittrell, Flemma, 123
Knopf, Edwin, 73
Koontz, Julie, 151
Korean War, 143
KPFK, 106
Kripalani, Sucheta, 106
Khrushchev, Nikita, 130
Lambaréné, 91, 181-82
Lampin, Sarah, 110
Lasky, Jesse, 73
Lenin Peace Prize, 154 (illus.)
Leuthen, Else, 120
Lewis, G. N., 40, 48, 49
Link, Nelly Macon, 173
Linus Pauling Institute, 183
Lomonosov, Mikail, 122
Los Padres National Forest, 97
Luce, Henry, 74

Macmillan, Harold, 130
MacPherson, Katharine, 146

- Mann, Thomas, 157
Mansfield, Michael Joseph (Mike), 149
marriages, creative, 185-87
Massachusetts Institute of Technology (MIT), 53
May-Johnson Bill, 73, 74
Mayer, Olive, 119, 121
McCarthy, Joseph, 101, 110
McGinley, Phyllis, 155-56
McGovern, George, 167
Meet the Press, 69
Meitner-Graf, Lotte, 109
Mendicants, The, 181
Menninger, Catherine, 140
Methodist churches, 116
 Cottage Grove, Oregon, 173
Miller, Clay, 12, 15, 184
Miller, Dickie, 10-11 (illus.), 50, 184
Miller, Elnora (Nora) Gard, 11, 15, 50, 52
 attitude toward Ava Helen's courtship, 20
 cares for Linus, Jr., 37, 44
 divorces Richard Miller, 11
 maintains house in Corvallis, 15 (illus.)
 moves with children to Canby, Oregon, 12
Miller, George, 12
Miller, George Richard, 11, 39, 50
Miller, John, 12
Miller, Lulu Gorgo, 10-11 (illus.), 15, 184
Miller, Mary Maxine, 10-11 (illus.), 15, 29
Miller, Milton, 12 (illus.), 12, 15
Miller, Pat, 10-11 (illus.), 50
Millikan, Robert Andrews, 47
Minority of One, The, 148, 155
Mitford, Jessica. *See also* Treuhaft, Decca
 The American Way of Death, 143
Mohr, Marie Lous, 116
Montgomery bus boycott, 127
Morgan, Richard, 183
Mount Sinai Medical School, 175
Mt. Diablo Unitarian Universalist Church, 181
Mumford, Lewis, 113
Mussolini, Benito, 42
Myrdal, Alva, 186
Myrdal, Gunnar, 113, 186
Myrdal, Jan, 186
NAACP (National Association for the Advancement of Colored People), 127
Nabokov, Vera, 187
Nabokov, Vladimir, 187
Nagasaki, Japan, 72, 104
Nathan, Otto, 136, 173
National Association of Manufacturers, 73
National Defense Research Council (NDRC), 71
National Guardian, 139
National Organization for Women, 2
National Review, 154
NATO (North Atlantic Treaty Organization), 146
Nearing, Helen, 186
Nearing, Scott, 186
Neruda, Pablo, 173
Nevadans on Guard, 154
New York Times Company v. Sullivan (1964), 154
New Yorker, The, 61
News-Press (Santa Barbara), 150
Nimaki, George, 67
Nixon, Richard, 169, 173
 administration, 5
Nobel, Alfred, 173
Nobel Institute, 115
Nobel prize, 4, 69, 82, 107, 116, 173, 185, 186
Noyes, A. A., 21, 40
 death of, 55
nuclear test ban treaty (1963), 1, 130
Oakland Lawyers' Guild, 129
Occidental College, 27
Olmsted, Mildred Scott, 107, 112
Oppenheimer, J. Robert, 50, 69, 81

- Oregon Agricultural College (OAC), 3, 9, 15
 fraternities and sororities, 16, 24
 home economics at, 16
 as land grant college, 16
 "rook" traditions, 15
- Osada, Arata, *Children of the Atomic Bomb*, 103
- Oser, Anita, 76
- Oslo Conference Against the Spread of Nuclear Weapons (1961), 113-16 (illus.), 118
- Oslo Statement, 120
- Ostrander, Wilma, 119, 120
- Oxford-Cambridge boat race, 72
- Oxford Peace Conference, 141
- Oxnam, Bromley, 160
- Pacific Grove, California, 122
- Paris, France, 89
- Parks, Rosa, 124, 145
- Pasadena, California, 3
- Paton, Alan, 113
- Pauling, Ava Helen and Linus, 17 (illus.), 18 (illus.), 58 (illus.), 88 (illus.), 93 (illus.), 117 (illus.), 161 (illus.), 164 (illus.), 165 (illus.), 167 (illus.), 168 (illus.), 171 (illus.), 176 (illus.)
 and anti-Catholic attitudes, 40
 and anti-Japanese vandalism against their house, 67
 and Appeal by American Scientists petition, 87-88 (illus.), 101
 and birth control, 27, 45
 camping in Painted Canyon, 56, 183
 at Corona del Mar, 36 (illus.), 56
 courtship, 18, 20-31, 35-36
 and Deer Flat Ranch, 94-98, 163, 164 (illus.)
 "Desiderata," 167
 engagement, 20-31, 35-36
 family financial accounts, 46-47
 family traditions, 55-57
 and Fifth World Conference Against Atomic and Hydrogen Bombs, 92
 and First Unitarian Church of Los Angeles, 160-61
 friendship with Rev. Stephen Fritchman, 70, 158-61
 and green MG, 72, 188, 189
 and health crises, 164
 and Hollywood Independent Citizens Committee on the Arts, Sciences and Professions, 73
 and home decoration, 151
 house on Fairpoint Street, 55, 56 (illus.), 57 (illus.), 150
 take intelligence tests, 3
 receive Janice Holland Award, 138
 and Japan, 92-94, 169
 marital tensions, 4, 150
 marriage, 2, 3, 150, 182, 185
 move to La Jolla, 164
 move to Pasadena, 34
 move to Portola Valley, 164, 187
 move to Santa Barbara, 135, 150, 153, 158
 in Munich, 43-44
 and Nobel Peace Prize, 132, 133-34 (illus.)
 on *Nova*, 170
 and J. Robert Oppenheimer, 50
 and Oslo Conference Against the Spread of Nuclear Weapons (1961), 113-16 (illus.), 118
 parenting, 2
 passport denial, 68
 petition against nuclear proliferation (1961), 113
 planning their wedding, 31
 love of puzzles, 48
 quarreling, 2
 and SANE, 104-5
 visit Albert Schweitzer, 91-92 (illus.), 169
 sexual relationship, 7, 24-25
 in Soviet Union, 89-90
 as a team, 71, 112, 132, 140-41, 144, 163
 tour Italy (1926), 41-42

Pauling, Ava Helen and Linus (cont.)

- travel to Oslo for Nobel Peace Prize (1963), 134
- travel to Stockholm for Nobel Prize (1954), 7
- travel together, 71, 117-118
- trip to Europe (1930), 51-52
- and Union Now movement, 59
- waffle breakfasts, 193
- wedding in Salem, 33-34 (illus.), 35 (illus.)
- at White House banquet for Nobel Laureates (1962), 130-31
 - at WILPF 14th International Congress, 92, 108
- at Wilson College, 166
- Pauling, Ava Helen Miller, 10 (illus.), 11 (illus.), 16 (illus.), 40 (illus.), 58 (illus.), 71 (illus.), 94 (illus.), 180 (illus.)
- activism with women, 70, 99, 140-41
- anti-nuclear testing activist, 1
- Athens Peace March (1964) (illus.), 147
- automobile accident (1978), 172
- death of, 180
- final illness at Stanford University Hospital, 178
- final illness begins during China trip (1981), 177
- at Canby (Oregon) middle school (illus.), 13
- and caretakers, Deer Flat Ranch, 95-96
- cataract surgery, 165
- chairs Forum Committee at First Unitarian Church, 150
- child-rearing instructions for Nora Gard Miller, 37
- civil rights activist, 1, 127-29
- and courtship with Linus, 18, 20
- decides to go to Europe without Linus, Jr., 37, 183
- and Virginia Foster Durr, 123-32
- and embolism, 164-65
- in England (1948), 76
- environmentalist, 1, 183
- as grandmother, 184
- and green MG, 72, 188
- and mother, 11
- feminist, 2, 5, 6, 70, 133, 155
- and Linus's Guggenheim fellowship year, 5-6, 37-46
- and The Hague, demonstration with WSP (1964), 146-48, 155
- historical position, 1
- identity as Linus's wife, 3, 9, 36
- and Los Angeles ACLU, 67, 68, 70
- in the Museo Nazionale, Naples, 41
- jealousy of, 187
- joins Linus in Pasadena in 1923, 3
- and Korean War, 143
- in Lambaréné with Albert Schweitzer, 91-92
- learns German in Munich, 45
- leaves baby Linus with her mother, 4, 144
- and Miller family, 9, 10
- as mother, 3, 37, 50-55, 61-65, 84-85
- networking, 69
- Nobel Peace Prize for Linus, response to, 132, 145
- at Oregon Agricultural College, 9, 15-18, 16 (illus.), 18 (illus.), 19 (illus.), 28, 144
- organized conference in Oslo, 1
- personality and characteristics, 2
- photographs of, 7
- plays piano, 12, 46-47
- and Ralph Atkinson Civil Liberties Award, 178
- relations with Linus's family members, 46
- reunites with father (1926), 39
- at Salem High School, 13 (illus.), 14
- and Stephen Fritchman, 170-71
- stomach cancer, 5, 169-70
- and student protesters, 165-66
- style of activism, 99, 140-41
- and teacher Winifred Helen James, 12

- and *The HIM Book*, 12, 14
 and "The Second X Chromosome,"
 6, 133, 142-44, 150
 and Unitarian beliefs, 170
 and the Vietnam War, 149, 155
 and WILPF, 100, 101 (illus.), 106
 (illus.), 19 (illus.), 140, 153
 on WILPF board, 90, 107, 108, 123,
 125, 135, 140
 and WSP, 121 (illus.), 135-39, 144,
 146-49
- Pauling, Belle (Linus's mother), 20
 attitude toward Linus's courtship of
 Ava Helen, 20, 22-23
 death of, 45
- Pauling, Cheryl, 87, 178, 184
- Pauling children, 3, 65, 62 (illus.), 77-85,
 97-98, 164 (illus.), 168 (illus.), 187
- Pauling, Edward Crellin, 55, 61, 62
 (illus.), 63, 64, 76, 85-87 (illus.), 168
 (illus.), 175, 177, 183, 186
 birth of, 55
 at Chadwick School, 85
 marries Lucy Mills, 86
 at Reed College, 85-86
- Pauling, Linda. *See* Kamb, Linda
 Pauling
- Pauling, Linus, 93 (illus.), 159 (illus.)
 60th birthday celebration, 117 (illus.)
 and alpha helix, 77
 automobile accident, 33
 Ava Helen, grief at death of, 184-85,
 187-88
 Ava Helen, love of, 145, 181
 Ava Helen Miller, meets in chemistry
 class, 2, 16-17
 awards and honors, 116. *See also*
 specific honors
 California, love of, 23-24, 49
 Caltech, chair of Chemistry Division,
 55, 68; increasing conflicts with, 135
 Caltech, conflicts at, 69
 Caltech, leaves, 135
 and Center for the Study of
 Democratic Institutions, 135, 154
 and Cold War politics in universities,
 72
 viewed as Communist sympathizer,
 71
 and disarmament, 69
 and Eastman Professorship at Balliol
 College, Oxford, 74-75
 and Emergency Committee of
 Atomic Scientists, 73
 and Paul Emmett, 22, 23, 24
 and ethics of nuclear development,
 72
 and eugenics, 26, 40
 and *General Chemistry*, 74
 and glomerulonephritis, 60
 grades Ava Helen Miller in
 chemistry, 29
 graduate student at Caltech, 31, 36
 Guggenheim Fellowship, 3, 37
 Harvard position offer, 48-50
 Hiroshima Statement at Japanese
 conference, 93
 honored by CIT Biology Faculty for
 Nobel Peace Prize, 135
 humanism of, 160
 Humanist of the Year Award, 1961,
 160
 ideas about God and religion, 29-30
 ideas about isolationism, 58
 ideas about Ku Klux Klan, 29
 ideas about religious fundamen-
 talists, 29
 ideas about sex, 24-25
 libel suits, 154
 building models of molecules, 49
 founder of molecular biology, 55
 and Nobel Peace Prize, 4, 132, 141,
 154, 160
 and Nobel Prize for Chemistry, 69,
 82, 87
 arguments about nuclear fallout,
 88-89
 at OAC, 18 (illus.), 18-19; teaching,
 16-17
 Orthomolecular Medicine
 Laboratory, 167

- Pauling, Linus (cont.)*
and Oslo conference, 1, 113-16
(illus.)
passport denied (1952), 77
and Pauling's Rules, 48
as paving plant inspector, 20-21
peace pledge, 69 (illus.), 71
as political activist, 70-71
as president of the American
Chemical Society, 68
and Presidential Medal for Merit, 74
and quantum physics, 3, 29, 47
response to European scientists and
Nazi crisis, 57-58
scientific thinking of, 48-49, 68-69
and Senate Internal Security
Subcommittee, 69, 100-103, 109
speaker on atomic weapons, 71
stranded on cliff at Big Sur, 97-98, 99
and Vitamin C, 5, 167, 175, 185, 186
in Warrenton, Oregon, 21
and x-ray crystallography, 34-35
- Pauling, Linus, Jr., 44, 52 (illus.), 54
(illus.), 55, 62, 63 (illus.), 64, 80, 145,
160, 174, 175, 177, 178, 181, 183, 186
birth of, 37
birth of son Linus Fowler Pauling, 78
builds guest cabin at Deer Flat
Ranch, 174
at Harvard Medical School, 76
marries Anita Oser, 76
moves to Honolulu, 82
at Pomona College, 56
at Selma march, 176
- Pauling, Lucile (Linus's sister), 46
- Pauling, Peter Jeffress, 52, 57 (illus.), 64,
82-84, 91, 175, 178
birth of, 52
at Cavendish Laboratory, 79
in England, 72, 76, 79-81
marries Julia, 80
and x-ray crystallography, 80
- Pauling, Stephanie, 178, 183, 184
- Pell, Orlie, 111, 119, 122, 125
- Pepper, George, 73
- Phillips, Mary, 109, 110
- Piedros Blancos, California, 95
- Presidential Medal for Merit, 74
- Priestley, J. B. 156
- Progressive Era, 158, 186
- public television, 129
- Pugwash Conferences, 70, 116, 117
- Ray, Martin, 81-82
- Red Scare (post-World War I), 107
- Reed College, 78-79
- Reeves, Nancy, 118
- Reynolds, Malvina, 163
- Richards, Alice, 182
- Richards, Linda, 99
- Roberts, Jack, 135
- Robeson, Paul, 69
- Robinson, Arthur, 167, 176
- Robinson, Edward G., 73
- Robinson, William J., 24-25
- Rockefeller Institute for Medical
Research, 59
- Rowland, Beatrice, 2
- Ruskin, John, 28
- Russell, Bertrand, 113
- San Francisco Peace March, 1960
- SANE (National Committee for a Sane
Nuclear Policy), 104-5, 107, 111, 113,
125, 139, 141
- Santa Cruz Mountains, 183
- Saturday Review*, 103
- Schiphol Airport, 146
- Schlesinger, Arthur, Jr., 130-31
- Schultz, Charles, 151
- Schweitzer, Albert, 91-92, 100, 113, 169,
175, 181
- Seeger, Pete, 117
- Sempervirens Foundation, 183
- Senate Internal Security Subcommittee,
69, 100-104, 111, 127, 138, 154
- Shamleffer, Doris, 119
- Shaw, Artie, 73
- Shaw, George Bernard, 25
- Shipley, Ruth, 77, 87

Index

- Shuttlesworth, Fred, 127
Silver Creek Falls, Oregon, 14
Sinclair, Upton, 25
SISS. *See* Senate Internal Security
 Subcommittee.
Sisson, Laurie, 120
Sixteenth Street Baptist Church
 bombing, 131
Society for Social Responsibility in
 Science, 116
Sommerfeld, Arnold, 29, 34, 42, 43
 (illus.)
Southern Christian Leadership
 Conference, 127
Soviet Union, 111, 122, 157
 Soviet Woman, 106
Spaulding, Nettie Miller (sister), 14, 184
Spaulding, Walter, 12, 14, 29
Spock, Benjamin, 146
Stanford University, 184
Steinbeck, John, 81
Stewart, Annalee, 99
Stone, Irwin, 167
Stowe, Harriet Beecher, 143, 145, 174
Straight, Dorothy Whitney, 186
Straight, Willard, 186
Street, Lady Jessie May, 103
Streit, Clarence, 59
Sutton, Leslie, 59
Swordlow, Amy, 136, 146
Symons, Jan, 100, 109, 114, 122

Teller, Edward, 88
Tenney Committee, 74, 75
Tenney, Jack, 72
Theoretical Physics, Institute of,
 Munich, 40
Test Ban movement, 124
Time Magazine, 74
Tolman, Richard C., 49, 71
Tolstoy, Leo, 174
Tonkin Gulf Resolution, 162
Treuhaft, Decca (Jessica Mitford), 126,
 129
Treuhaft, Robert, 126, 129

Truman, Harry S, 124
Tucker, Helen, 139, 140
Tuskegee Institute, 128, 129

Ulmer, Barbara, 118
UNICEF, 120
Union Now, 59, 71
Unitarian Universalism. *See also* First
 Unitarian Church of Los Angeles
Unitarian Universalist churches, 116,
 160
Unitarian Universalist Fellowship of
 Livermore, 170
Unitarian Universalist Church of Palo
 Alto, 181
Unitarian Universalist Church in
 Walnut Creek (Mt. Diablo Unitarian
 Church), 181
University of California, 75
 loyalty oath, 75
 Regents, 75
University of California at San Diego, ix
University of California at Santa
 Barbara, 162
University of Oregon, Eugene, 16
University of Washington, Seattle, 75,
 162
U.S. State Department, 68, 69

Vietnam War, 149, 155, 161, 162
Vitamin C, 185, 186
Voice of Women (VOW), 100, 114, 117,
 139, 145
von Suttner, Bertha, 142, 145, 166, 173
 Die Waffen Nieder, 142

Walcott, Bess, 123, 128
Wallace, George, 131
Walsh, Claire, 100
Washington Post, 101
WCTU (Women's Christian
 Temperance Union), 187
Weigl, Vally, 101 (illus.), 133
Wellesley College, 174, 179
Wheeler, Burton K., 59

- White House, 130-31
Willamette Valley, 16
WILPF, 90, 100, 101, 107-14, 116, 118-23,
124, 135-36, 155, 163, 173, 174, 182,
187
and civil rights and integration, 125,
128
Civil Rights Committee, 128
history of, 107
Interracial Extension Committee, 128
Los Angeles chapter, 118, 138
Palo Alto chapter, 119, 120
Pasadena chapter, 108, 135, 154
racial integration of, 123
San Jose chapter, 118
Triennial International Conference at
Asilomar, 1962, 118, 122-23
annual conference at St. Paul,
Minnesota (1961) (illus.), 119
Wilson, Dagmar, 136, 137, 146
Wiren, Abraham Lincoln, 100
Women's International League for
Peace and Freedom. *See* WILPF.
Women Strike for Peace. *See* WSP
WSP, 116, 117, 135ff., 144, 145, 146-49,
155, 163
and *The German Problem: Roadblock to
Disarmament*, 146
HUAC hearing, 136-37
march in The Hague (1964), 1, 146-48
No More Hiroshimas march, San
Francisco (illus.), 121, 139
origins of, 136

Yorty, Sam, 72
Yorty Committee. *See* Joint Fact-Finding
Committee on Un-American
Activities, California
Yukawa, Hideki, 113

Zeuthen, Else, 115

Ava Helen Pauling's rich career as an activist for civil rights and liberties, against nuclear testing, and for peace, feminism, and environmental stewardship is best understood in the context of her enduring partnership with her famous husband, Linus Pauling. In this long-awaited biography, Mina Carson reveals the complex and fascinating history behind one of the great love stories of the twentieth century.

Though she began her public career in the shadow of her spouse, Ava Helen soon found herself tugged between supporting Linus in his career and wanting him to embrace the social and political causes she felt passionate about. As a young woman



in the 1920s, she believed it was her destiny to accept duties as a mother and homemaker. However, neither of those roles fully satisfied the feisty and willful Ava Helen. Her more complete identity emerged over decades, as she evolved into an influential activist.

Many aspects of Ava Helen Pauling's story were shared by countless American women of her generation and the generations surrounding her. Despite new educational opportunities, they were

expected to conform to the same limited social roles dictated by the gender ideology of the nineteenth century. When second wave feminism erupted in the 1960s, its force did not come solely from the young women rebelling against their elders' rules and limitations, but also from the frustrated dreams of those elders themselves.

Ava Helen Pauling: Partner, Activist, Visionary is a welcome addition to the literature on women's and family history and the peace and reform movements, and it is an important complement to writings about Linus Pauling.

Mina Carson has written about women's history from a number of angles, from the settlement house movement to rock and roll to issues of war, peace, and civil rights. She received her PhD in history from Harvard University in 1984. An associate professor of history at Oregon State University, her current research and teaching interests include the history of popular music, social work and psychotherapy, and photography. She is the author of *Settlement Folk: Social Thought and the American Settlement Movement, 1885-1930* and, with Tisa Lewis and Susan M. Shaw, *Girls Rock! Fifty Years of Women Making Music*.

OREGON STATE UNIVERSITY PRESS

Cover design by Erin Kirk New

Cover photographs courtesy Ava Helen and Linus Pauling Papers, Special Collections & Archives Research Center, Oregon State University Libraries.

ISBN 978-0-87071-698-0



9 780870 716980