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Presentation of the 2024 Roebling Medal of the Mineralogical Society of America to Nancy L. Ross

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It is a joy to introduce Nancy Ross as the recipient of the 2024 Roebling Medal. She received her undergraduate education at Virginia Tech and her Master's at the University of British Columbia. Inspired by Jerry Gibbs and others, she came to my group at ASU in the summer of 1981. I remember her arrival at my house as a wilted person with a car full of wilted house plants in 110 F summer weather. She recovered quickly and began to thrive despite the heat from Sol and me. Her Ph.D. thesis evolved into a study of high-pressure phase transitions in silicates with Sue Kieffer, combining calorimetry, spectroscopy, and lattice dynamics with strong interactions. Ah, Nancy, do you remember the world's biggest zucchini the three of us stumbled over on a dark night? After postdocs at Stony Brook and Geophysical Lab, she settled into a faculty position at University College London, where she continued developing a lattice dynamical approach to the structure, bonding, and properties of minerals and materials. She returned to Virginia Tech in 2000 as a professor to continue and strengthen their tradition of mineral physics. She has thrived there and built strong connections to Oak Ridge National Lab, using neutron diffraction to complement other studies of structure, dynamics, and thermodynamics. We have remained good friends all this time, and Nancy pushed me around only on one occasion, namely when I was in a wheelchair recovering from a broken leg and attending a GSA meeting in Salt Lake City.

Her continuous and substantive science is impossible to summarize in a few sentences. Rather, I point out two major successes. Her work on the thermodynamics of magnesium silicate polymorphs, in collaboration with a Japanese high-pressure lab and Paul McMillan (who regrettably died two years ago (Akaogi et al. 1984) was pioneering and set the stage for numerous future mineralogical studies by her, us, and others. Recently, she has broadened her interests to include functional materials such as hybrid perovskites (Nicholas et al. 2021). These materials are important for battery applications, and her approach combines high-pressure synthesis with valuation of structural and optical properties. These examples show her continuing involvement in new science.

Nancy has been very active in service and outreach, putting in valuable time on MSA and other committees and leading teaching and service in her department. She has mentored a large number of undergrads, graduate students, and postdocs, many of whom have gone on to important positions. Nancy continues to be a leader in the mineral physics and materials science communities. She is a wonderful person and a role model both for women and for all aspiring scientists. Hurrah for Professor Nancy Ross!

References cited

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