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Lead Silicate Glasses and Neutron Scattering GLORIA LEHR, Monmouth College, ADAM VITALE, MARIO AFFATAGATO, STEVE FELLER, Coe College, ALEX HANNON, EMMA BARNEY, Rutherford Appleton Laboratory, DIANE HOLLAND, University of Warwick — Lead silicate glasses can be formed with a very large range of lead concentrations. This raises many questions about the structure of the lead silicates. It is believed that at high concentrations, the lead becomes a glass former rather than a modifier. Many studies have been done on lead silicate glasses, and more analysis is being performed to better understand the structure of lead glasses especially at high concentrations. All samples were characterized by their transition temperature and were found to be self-consistent and in accord with the trends from earlier studies. High lead concentration samples were also characterized by x-ray diffraction to ensure that samples were glassy. Samples were successfully made from 33.3 through 80 mol % PbO. These samples are being tested by elastic neutron scattering to further study the complexities of the two glass forming networks PbO and SiO2.

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