THOMAS MARK HAKEY#, and EDWARD A. WOVCHKO, Department of Chemistry, West Virginia Wesleyan College, Buckhannon, WV, 26201. **Preparation of polyacrylic acid (paa) films on porous silicon for drug storage/release applications.**

Recent developments in controlled drug delivery technology has benefitted modern medicine by providing patients with efficient, noninvasive methods that enhance the action of drugs, reduce dosing frequency, and decrease adverse side-effects. Porous silicon (pSi) is an interesting platform from which drug delivery devices can be built because it is nontoxic, biodegradable, and can be prepared to have high surface area ratios for drug loading. In this work, porous silicon materials were prepared using an electrochemical etching method. Samples were characterized using infrared spectroscopy (FTIR) and atomic force microscopy (AFM). Caffeine was selected as test drug for capture, storage, and release in pSi. To protect the drug from the external environment and enable its release a pH responsive polyacrylic acid (PAA) film was prepared on the pSi surface through a multistep process using (3-aminopropyl)triethoxysilane (APTES), α-bromoisobutyryl bromide (BIBB), and acrylic acid.

FTIR spectra and AFM images acquired throughout the deposition process will be presented.