Discovery of genetic variants for substance use disorders is rapidly gaining momentum. This overview of the progress made by the Psychiatric Genomics Consortium’s Substance Use Disorders (PGC-SUD) Working Group will outline discoveries from the most recent GWAS of alcohol, cannabis and opioid use disorders. For alcohol, our collaboration with other groups is resulting in a rapid escalation of sample size and increasing power to detect additional novel loci. Given the enhanced power associated with the alcohol use disorders (AUD) GWAS, we will further highlight discoveries from cross-disorder GWAS of AUD with schizophrenia, anorexia nervosa and insomnia, with each analysis documenting novel loci of convergent and divergent effect as well as enrichment of the covariance between the disorders. Collaborations between the PGC-SUD group and neuroimaging as well as animal eQTL researchers is also beginning to provide mechanistic insights. Finally, the presentation will provide a brief overview of novel findings from the broader PGC community, to illustrate the enormous advances that are anticipated in addiction genetics in the coming years.