visits either 5 or 2 times per week). A weekly counselling session addressed patient concerns and included specific behaviorally based recommendations to prevent drug use. Urine drug screens were conducted twice weekly and paper and pencil measures were obtained weekly.

Overall, preliminary analysis indicated no clear differences in drug use as a function of fluoxetine or placebo. Cocaine use continued during treatment. Drop out averaged 50% within the first 2 weeks across all groups for these cocaine-dependent patients. Differences did emerge as a function of required visit frequency. The relationship between other measures (e.g., ASI factors, DSM-III R, POMS, Beck, Drug Use History, medical status) will be described. The general issue of identification of specific treatment elements and patient characteristics will be addressed.

TREATING ALCOHOLIC COCAINE USERS WITH DISULFIRAM AND NALTREXONE. Kathleen M. Carroll,* Doug Ziedonis,* Stephanie O'Malley,* Lynn Gordon,† Tom Kosten* and Bruce Rounsaville.* *Yale University School of Medicine, New Haven, CT, and †APT Foundation, New Haven, CT.

Effective treatments for cocaine abusers who also abuse alcohol have not yet been identified. We evaluated the efficacy of established (disulfiram) and promising (naltrexone) pharmacological treatments for alcoholism in reducing both alcohol and cocaine use. In an open pilot study, eighteen subjects meeting current DSM-III-R criteria for alcohol dependence or abuse and cocaine dependence or abuse were randomly assigned to receive either disulfiram or naltrexone in conjunction with weekly individual psychotherapy. Subjects in the disulfiram group reported significantly fewer days using alcohol (4% versus 26%) and cocaine (4% versus 15%) while in treatment, and longer sustained periods of abstinence from both substances than subjects receiving naltrexone. Attrition was high in both groups, but the disulfiram-treated subjects who dropped out tended to leave treatment after several consecutive weeks of abstinence from both alcohol and cocaine, while dropouts in the naltrexone group generally did so while still using both cocaine and alcohol. Results from this study suggest that effective reduction of alcohol use may lead to corresponding reductions in cocaine use and underscore the importance of the relationship between alcohol and cocaine use.

DRUG CUE REACTIVITY AS A POSSIBLE "SEVERITY" DIMENSION IN COCAINE DEPENDENCE. Anna Rose Childress, Ronald Ehrman, Steve Robbins, Anastasia Droungas, A. Thomas McLellan and Charles P. O'Brien. University of Pennsylvania School of Medicine, Philadelphia, PA.

In general, substance abuse patients who are "more severe" (having more drug and nondrug problems) at the outset of treatment tend to have poorer treatment outcomes. But even the best predictors of treatment outcome (e.g., psychiatric severity) leave substantial outcome variability unexplained. It is possible that variables which are not conventionally measured, such as cue reactivity, may offer a "severity" dimension which can enhance prediction of treatment outcome, particularly drug use/relapse.

For several years our research group at the Penn/VA Addiction Treatment Research Center has studied the conditioned responses associated with chronic drug use on the hypothesis that some of these responses (particularly conditioned craving and arousal) may contribute to relapse in the abstinent patient. According to this hypothesis, stimuli repeatedly associated with drug administration (e.g., drug paraphernalia, the sight of drug-using friends/location, even mood states) can become classically conditioned drug "signals," capable of eliciting subjective and physiological arousal, drug craving, and, potentially, drug-seeking behavior.

We have studied the response to cocaine cues and other comparison cues in several samples of cocaine patients, most of whom were involved in treatment-outcome interventions, including samples who participated in controlled trails of putative "anti-craving" medications (e.g., amantadine, carbamazepine). The studies usually involved assessments of the response to cues prior to treatment, and again at points during treatment or at follow-up from treatment completion. Though these studies have consistently demonstrated group effects of cocaine cues on craving and arousal, there is substantial variability across individuals in the type and degree of differential responsivity to cocaine-related vs. nondrug cues. We are now performing correlative analyses to see how clinical status variables such as psychiatric severity and drug use severity correlate with magnitude of responding to drug cues and to what degree these variables (alone or in combination) can predict treatment outcomes, particularly drug use/relapse. It is possible that the degree of conditioned responding to cues is an individual patient variable which can enhance the prediction of outcome, but which is not linearly related to drug use severity.

By the time of the planned symposium, data will be available for cue reactivity assessments in samples of cocaine patients from a) a passive cue exposure intervention, b) an ambulatory psychotherapy study, c) a double-blind controlled trial of amantadine, and d) a double-blind controlled trial of carbamazepine.

A BEHAVIORAL APPROACH TO OUTPATIENT TREATMENT OF COCAINE DEPENDENCE. Stephen T. Higgins, Alan J. Budney, Florien Foerg, Warren K. Bickel and John R. Hughes. University of Vermont, Burlington, VT.

Cocaine use and dependence are significant public health problems in the United States. At least 22 million individuals in the U.S. have tried cocaine, and estimates indicate 1–2 million are dependent. Because many cocaine-dependent individuals administer the drug intravenously and engage in prostitution and other high-risk behavior, cocaine dependence presents serious problems to be resolved in curtailing the spread of AIDS. Our clinic has been developing an outpatient, behavioral treatment for cocaine dependence. The approach we have taken is based on the theoretical and empirical foundations of the experimential analysis of behavior and operant conditioning. In this presentation we will review the conceptual framework of this approach, describe the behavioral treatment we are using, and describe findings from several investigations conducted in our clinic, assessing predictors of treatment outcome. This clinic has been in existence for less than 2 years and we are still relatively early into our investigations. In our opinion, results obtained thus far are promising and illustrate the strides that can be made toward effective treatment of this disorder with a behavioral approach.