

**2009 SPRCC Application:**  
**Personal Research Agenda**

I am broadly interested in research on the evaluation of multi-tiered early intervention and prevention services designed to improve behavioral, social-emotional, and academic outcomes of students in pre-school through grade twelve. My specific interests are in studying (a) problem-solving consultation models used in an organized delivery of pre-referral assessment and intervention services in school settings, and (b) methodological advances in evaluating outcomes.

My experiences in these research areas come primarily from my graduate studies, work on large federally funded projects, and dissertation research. I completed my doctoral minor in the interdisciplinary Prevention Sciences program, which helped me to develop competencies needed to evaluate and design systems level interventions to prevent or mitigate a broad range of problems facing youth.

I have also worked on multiple federally-funded research projects. One project evaluated the outcomes of three assessment approaches used in problem-solving consultation with teachers and their students with reading difficulties. I participated as a consultant, data-base administrator, analyst, and co-author of the resulting manuscript that we submitted for publication. I also worked on a longitudinal, large-scale project that tracked the outcomes of a multi-tiered prevention/intervention model on students' behavioral and academic skills. On this project, I managed, processed, and analyzed assessment data collected by six university-based research centers on the outcomes of schools, classrooms, and thousands of students. This project

introduced me to multi-level modeling techniques, which were essential to my dissertation research.

My dissertation examined extant data from several studies to evaluate the variability and magnitude of students' behavior change outcomes (academic, social, behavioral) produced by consultants through problem-solving consultation with teachers. This investigation introduced new techniques in calculating effect sizes and was the first to use multi-level analyses to evaluate consultation outcomes, extending research on problem-solving consultation, therapist effects, and meta-analysis of single-case designs.

My current position as Assistant Research Scientist provides the opportunities and resources I need to develop competencies in understanding the economic and policy implications of systems-level outcomes research. These competencies include analysis of large databases (e.g., millions of cases), application of advanced statistical procedures and models (e.g., cost analyses, Bayesian statistics), procurement of funding, and publication or presentation of findings that may also enable me to shape policy. I aim to apply these competencies to advance research of problems/programs familiar to school psychologists.

These experiences have prepared me well for collaboration in large-scale multi-site research like the project that I proposed. Specifically, the proposed study is designed to address three main questions: (a) What factors are associated with the abuse of prescription drugs by adolescents?; (b) What are schools doing to prevent the abuse of prescription drugs by students in secondary school settings?; and (c) Are these efforts effective? This study will broaden the role of school psychologists by applying their expertise in intervention and assessment to the school level to combat new mental health issues facing students. Ultimately, the success of such efforts will also require close collaboration with professionals across disciplines and systems.

**Project Proposal: Evaluation of Secondary School Programs  
Designed to Prevent Abuse of Prescription Drug by Students**

*Specific Aims.* The purpose of this project is to evaluate the short-term outcomes of school-based efforts to prevent prescription drug abuse by secondary students. In this proposal, the term *abuse* refers to the intentional nonmedical use of or dependence on prescription drugs.

Specifically, the aims of this study are to: (a) assess adolescent students' access to various prescription drugs, current and past use (medical and nonmedical), reasons for abuse, and knowledge of associated risks (e.g., academic performance, physical harm); (b) assess parents' knowledge, attitudes, and actions concerning abuse of prescription drugs by adolescents; (c) estimate population incidences of related overdoses and crimes at state, county, and school district (i.e., zip code) levels for participating schools; and (d) identify, design, and evaluate school based interventions to prevent prescription drug abuse among adolescent students.

*Background & Significance.* Prescription drug abuse among adolescents in the United States has risen sharply over the past decade as overall illicit drug use has declined.<sup>1-4</sup> With exception of marijuana, prescription drugs are the most abused substances by adolescents aged 12 to 17 than all other illicit drugs combined.<sup>1,4</sup> Approximately 3% of teens are estimated to be currently abusing prescription psychotherapeutics.<sup>4</sup> While research describing the problem is abundant, research addressing the problem is largely absent.

Schools are ideal settings to target interventions that prevent drug abuse among adolescents, however, few if any such prevention programs address the issues unique to prescription drug abuse. Unlike illicit drugs, adolescents without their own prescriptions can easily obtain prescription drugs diverted by peers, family members or from their medicine cabinets, or bought from the internet.<sup>5-7</sup> Adolescents also perceive medications as safe because they are legal and

advertised on television. The nonmedical use of prescription stimulants among students is often to enhance academic performance, not necessarily to get “high,” much like the use of anabolic steroids to enhance athletic performance.<sup>8</sup> In addition, students with legitimate prescriptions report intense peer pressure to *share* their medications.<sup>9</sup>

The largest and oldest drug abuse prevention programs currently used in 75% of the nation’s school districts, the Drug Abuse Resistance Education (D.A.R.E) program, does not explicitly address prescription drugs.<sup>10-11</sup> In the national registry of evidence-based programs and practices maintained by the Substance Abuse and Mental Health Services Administration (SAMHSA), 35 of 119 current programs address substance abuse prevention in school settings, of which only 3 reference prescription drugs.<sup>12</sup> Two of these programs focus on high school athletes, while one focuses on substance abuse and violence among at-risk children ages 8 to 13.

Coordinated efforts by legislators, drug prescribers and manufactures, and community members to prevent prescription drug abuse have a reciprocal influence on the effectiveness of any school based efforts. However, evidence for any school-based programs that explicitly address this problem are absent from the literature. This project intends to fill this research gap on school based programs as an integral part of a comprehensive prevention model. This study is designed to address three main questions: (a) What factors are associated with the abuse of prescription drugs by adolescents?; (b) What are schools doing to prevent the abuse of prescription drugs by students in secondary school settings?; and (c) Are these efforts effective?

***Research Design & Methods.*** This study will assess prescription drug use and abuse among 7<sup>th</sup> through 12<sup>th</sup> grades students and the outcomes of school-based programs designed to prevent prescription drug abuse in this population. Participating schools fall into one of three groups: (a) uses no organized drug-abuse prevention program; (b) uses an organized program,

but does not explicitly address prescription drugs; and (c) uses an organized program that explicitly addresses prescription drugs. Schools will be matched on demographic, size, and geographic factors. Students will complete internet based surveys at school assessing the quality, quantity, and knowledge of risks regarding prescription drug use. Parents will complete similar surveys. Surveys occur once at the beginning and once at the end of the academic year. All students from participating schools and their parents will be eligible to participate in the surveys. Investigators will also use emergency room, poison control center, and law enforcement databases to evaluate the population incidence of overdoses and crimes involving prescription drugs at state and local levels (i.e., zip codes) for participating schools. Finally, investigators will assess program implementation (e.g., costs, integrity, and acceptance) and school level outcomes data (e.g., attendance, achievement, and suspensions) in the schools through the year. Phase I of this multi-year project includes time to recruit, obtain human subjects approval for all concerned institutions, and develop assessment materials. Phase II involves one academic year to evaluate outcomes, followed by several months to analyze, report, and disseminate results (Phase III). The total budget is approximately \$180,000 per year. This includes personnel (i.e., two investigators contributing at 20% effort, a project coordinator, and a graduate student assistant), operating expenses (e.g., measurement resources, databases, travel), and a 51% indirect-cost rate. Multiple funding opportunities through the National Institute of Health for pilot and large projects are currently available for such research (e.g., PA-08-127, PA-08-128, PA-08-129, and PA-08-217).

***Advantages & Challenges of Multi-site collaboration.*** The success of this project depends on collaborations among multiple investigators given its scale and need for sampling from diverse communities. Communication among investigators, and coordination of budgets and review boards among different institutions are perhaps the greatest difficulties of this multi-

site investigation.

### References

1. Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J.E. (2005). *Monitoring the Future national survey results on drug use, 1975-2004. Volume I: Secondary school students* (NIH Publication No. 05-5727). Bethesda, MD: National Institute on Drug Abuse.
2. Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Scheulenber, J.E. (2007). *Monitoring the Future national results on adolescent drug use: Overview of key findings, 2006* (NIH Publication No. 07-6202). Bethesda, MD: National Institute on Drug Abuse.
3. McCabe, S. E., Boyd, C. J., Young, A. M. (2007). Medical and nonmedical use of prescription drugs among secondary school students. *Journal of Adolescent Health*, 40, 76-83.
4. Substance Abuse and Mental Health Service Administration. (2008, September) 2007 National Survey of Drug Use and Health. Rockville, MD: Office of Applied Studies. Retrieved Dec. 12, 2008 from <http://www.oas.samhsa.gov/nsduhLatest.htm>
5. Boyd, C. J., McCabe, S. E., Cranford, J. A. & Young, A. M. (2007). Gender differences in prescription drug abuse and diversion among adolescents in Southeast Michigan School District. *Archives of Adolescent and Pediatric Medicine*, 161, 276-281.
6. National Center on Addiction and Substance Abuse (CASA) at Columbia University. (2008, July). "You've got drugs!" V: *Prescription drug pushers on the internet*. (A CASA White Paper). Retrieved December 12, 2008, from <http://www.casacolumbia.org/articlefiles/531-2008%20You%27ve%20Got%20Drugs%20V.pdf>
7. Poulin, C. (2007). From attention-deficit/hyperactivity disorder to medical stimulant use to the diversion of prescribed stimulants to non-medical stimulant use: Connecting the dots. *Addiction*, 102, 740-751.
8. Wilens, T. E., Gignac, M., Swezey, A., et al. (2006). Characteristics of adolescents and young adults with ADHD who divert or misuse their prescribed medications. *Journal of American Academy of Child & Adolescent Psychiatry*, 45, 408-414.
9. McCabe, S. E., Teter, C. J., & Boyd, C. J. (2006). Medical use, illicit use, and diversion of abusable prescription drugs. *Journal of American College Health*, 54, 269-278.
10. D.A.R.E. America. (n.d.). About D.A.R.E.. Retrieved on Dec. 12, 2008 from [http://www.dare.com/home/about\\_dare.asp](http://www.dare.com/home/about_dare.asp)
11. Morris, M. C., Cline, R. J. W., Weiler, R. M., & Broadway, S.C. (2006). Prescription drug abuse information in D.A.R.E.. *Journal of Drug Education*, 36(1), 33-45.
12. Substance Abuse and Mental Health Service Administration. (n.d.b) National registry of evidence based programs and practices. Retrieved Dec. 12, 2008 from <http://www.nrepp.samhsa.gov/>