The Research Base for
Best Behavior **Staff Development:**
Getting Effective School Wide Positive Behavior Support Practices to Scale
Jeffrey Sprague, Ph.D. & Annemieke Golly, Ph.D.
The Institute on Violence and Destructive Behavior
University of Oregon College of Education

Introduction

The Challenge of Antisocial Behavior in Schools
While it is true that most U.S. schools are viewed as relatively safe places for children, youth and adults, (U.S. Departments of Justice and Education, 1999; 2000) some schools face serious problem behaviors such as bullying, harassment, victimization, drug and alcohol abuse, and the effects of family disruption and poverty (Kingery, 1999). These serious problem behaviors in conjunction with other outside factors create fears about the personal safety of students, teachers, parents, and community members that are very real and need to be addressed.

The social problems noted above detract from the instructional and socialization mission of schools. The result is decreased academic achievement and a lower quality of life for students and staff alike. The National Educational Goals Panel Report (U. S. Department of Education, 1998, 2000) lists five essential areas in which national educational goals are not being met; (1) Reading achievement at Grade 12 has decreased; (2) Student drug use has increased; (3) Sale of drugs at school in grades 8, 10, and 12 has increased (4)Threats and injuries to public school teachers have increased; and, (5) More teachers are reporting that disruptions in their classroom interfere with their teaching. These outcomes illustrate the link between school climate, school violence and academic achievement. We cannot achieve national educational goals and meaningful reform without addressing these disturbing conditions (Elias, Zins, Graczyk, & Weissberg, 2004).

Some school discipline practices may advance antisocial behavior

Unfortunately, because of an almost exclusive emphasis on individual child characteristics as the cause of antisocial behavior, school discipline practices are often not acknowledged as a source of the problem nor adequately addressed. Sprague, Walker, Golly et al. (2001) found that many school practices contribute to the development of antisocial behavior (including delinquency, alcohol, tobacco and other drug use) and the potential for violence. They also identified the following seven important variables within school practice that advance the development of antisocial behavior:
- Ineffective instruction that results in academic failure and promotes problem behavior;
- Inconsistent and punitive school-wide, classroom and individual behavior management practices;

- Lack of opportunity to learn and practice prosocial interpersonal, self-management, and resistance skills;
- Unclear rules and expectations regarding appropriate behavior;
- Failure to correct rule violations and reward adherence to them;
- Failure to individualize instruction to adapt to individual differences; and,
- Failure to assist students from at-risk backgrounds to bond with the schooling process.

These factors are *all* amenable to change with positive and preventive practices (Mayer, 1995; Sugai & Horner, 1994; Walker et al., 1996). Unfortunately, school personnel have a long history of applying simple and unproven solutions to complex behavior problems. They express understandable disappointment when these attempts do not work as expected (see Walker et al., 1996). This practice is sustained by a tendency to try to remove the problem student via referrals to the office, suspension or expulsion, rather than focus on the administrative, teaching and management practices that either contribute to, or reduce problem behaviors (Tobin, Sugai, & Martin, 2000).

How do we solve this problem?

Effective prevention programs must have the foundation of an organized, school wide system for behavior management and teaching social behavior. Hoping to prevent minor discipline problems, as well as more serious antisocial and violent incidents, many schools have turned to a positive approach, commonly referred to as School Wide Positive Behavior Support (SWPBS) (Dwyer & Osher, 2002; Sugai, Horner, & Gresham, 2002; Sprague & Golly, 2004) as a foundation response. SWPBS is based on the assumption that when all school staff members within all school settings actively teach and consistently recognize and reinforce appropriate behavior, the proportion of students with mild and serious behavior problems will be reduced and the school's overall climate will improve (Colvin, Kame'enui, & Sugai, 1993; Lewis & Sugai, 1999; Sugai & Horner, 2002; Sugai et al., 2000).

SWPBS schools aim to a) create a positive school climate, b) establish and teach behavioral expectations school-wide, and c) demonstrate and teach mastery of behavioral skills (e.g., compliance to school rules, safe and respectful peer to peer interactions, academic effort/engagement) that will alter the trajectory of at risk children toward destructive outcomes, and prevent the onset of risk behaviors in typically developing children. There is evidence that effective and sustained implementation of SWPBS will create a more responsive school climate that supports the twin goals of schooling for all children: academic achievement and social development (Walker et al., 1997).

SWPBS also creates the context for school-based efforts to support effective parenting practices. When school personnel have a shared vision of the kind of social behavior they want to promote among students and a shared understanding of the type of social environment that is needed to achieve such behavior, they are in a position to inform and support families in creating the same kind of supportive environment at home. When educators are clear about how to consistently use rules, positive reinforcement, and mild

negative consequences to support behavioral development, they are better able to coordinate their efforts with those of parents. As a result, parents know more about their children's behavior in school and are able to provide the same supports and consequences at home.

Positive Behavior Supports (PBS) Intervention Components

PBS is primarily a behavior analytic approach, and the application of each intervention element is based on a school system- and student-level needs assessment. The table below provides a typology of the school wide intervention components encompassed by positive behavior supports (PBS) practices (Hagan-Burke et al., 2001; Gottfredson, 2001). These include strategies aimed at all adults in the school, and those aimed at students and their families.

Typology of School Wide PBS Strategies

Adult Interventions	Student Interventions
♦ Sustained workshop and staff development opportunities ♦ Follow up consultation and assistance ♦ Altering school policies ♦ Administrative leadership and participation ♦ Informing and involving families ♦ Data-based decision making and feedback to implementers ♦ Published or standardized curriculum materials ♦ Active supervision in classrooms, common areas ♦ Altering ecological arrangements ♦ Positive reinforcement for displaying expected behavior (e.g., staff meeting recognition, other non-monetary rewards) ♦ Time for planning and communication among implementers (collegial relations among adults)	♦ Teaching positive behavioral expectations ♦ Activities to promote rule clarity and acceptance ♦ Positive reinforcement for displaying expected behavior (e.g., token economies, verbal praise) ♦ Correcting inappropriate behavior and prompting expected behavior ♦ "Booster" reminders of expected behavior (posted signs, assemblies, school announcements, t-shirts) ♦ 4:1 positive to negative interactions between adults and children ♦ Collegial relations among adults and students ♦ Active and positive supervision in common areas (adult proximity and presence to prevent problem behavior and interfere with deviant peer affiliation)

Best Behavior: The First Curriculum Expression of School-wide PBS practices

In response to a growing demand for a school wide positive behavior supports professional development curriculum, Jeffrey Sprague, Ph.D. and Annemieke Golly, Ph.D. have ~~erated~~created the staff development program called *Best Behavior*. This evidence-based and research validated program is specifically designed to assist school personnel to achieve a foundation of prevention practices and address each of the School wide PBS strategies listed above. The program focuses on six key concepts:

1. Administrative Leadership;
2. Clarifying and Teaching Behavioral Expectations;
3. Providing Positive Reinforcement for Prosocial Behavior; Providing Performance-Based Feedback to School Personnel;
4. Effective Classroom Management; and,
5. Individual Student Supports.

The research supporting these key concepts and description of how each is addressed in *Best Behavior* is provided below.

The Research Base

Administrative Leadership
Every school needs a principal committed to leadership and participation in the school discipline process. In the absence of administrative leadership and district support (e.g. policy, fiscal) it is difficult to effect broad-based changes. Research has demonstrated that principals exercise a measurable effect on schooling effectiveness and student achievement (Hallinger & Heck, 1998), innovative program implementation success (Kam, Greenberg, & Walls, 2003), and staff turnover (Gottfredson et al., 2000; Ingersoll, 2001).

> **Alignment with *Best Behavior***
> Best Behavior requires the establishment of a building-level PBS team and substantive and ongoing administrator participation and leadership. It has been documented that effective implementation of Best Behavior occurs in *every* school that maintains administrative leadership (reference). In schools that do not maintain administrative leadership, a general failure to implement *Best Behavior* or maintain effective practices is observed (Sprague, Walker et al., 2001).

Clarifying and Teaching Behavioral Expectations
Clarifying and regularly teaching behavioral expectations is a critical element of any prevention intervention (Mayer, 1991; Metzler, Biglan et al., 2001; Sprague, Walker et al., 2001; Sugai & Horner, 1992). This practice creates a predictable school and classroom environment and sets up teacher-student interactions that focus on teaching alternative behaviors, rather than focusing on sanctions. Expectations and procedures for specific classroom routines might vary from teacher to teacher, but effective teachers consistently present very clear instructions regarding expected academic and social behavior (Emmer, Evertson, & Worsham, 2001; Walker—antisocial child book).

Clarifying and teaching behavioral expectations is most effectively accomplished through the combined use of Direct Instruction (DI) and modeling and role playing derived from Social Cognitive Theory (Bandura, 1986; Patterson, 1982). The DI model, originally described by Engelmann (1969) provides a simple and effective guide for constructing social behavioral skills programs because it integrates teacher practices with systematic curricular analyses, breaks down complex skills into simpler steps (Rosenshine & Stevens, 1986), and allows for learners to apply a strategy across a range of examples because skills are not built through memorizing a series of stipulated steps (Carnine,

Kame'enui, & Woolfson, 1982; Darch, Carnine, & Gersten, 1984; Fielding, Kameenui, & Gersten, 1983). Also critical to effectively clarifying and teaching expectations is the selection of teaching instruction for diverse stimulus conditions (Albin & Horner, 1988; Dunlap, 1993; Engelmann & Carnine, 1982; Horner, Sprague, Wilcox, 1982; Horner, 1986), rapid instructional pacing (Carnine, 1976; Darch & Gersten, 1985; Koegel, Dunlap, & Dyer, 1980), the use of positive and negative examples and cumulative content review (Engelmann & Carnine, 1982) and the use of modeling and role playing which is derived from Social Cognitive Theory (Bandura, 1986).

Alignment with *Best Behavior*.
Best Behavior trains school personnel how to clarify and teach expectations in all school settings. The instructional design for clarifying and teaching behavioral expectations is guided by principles from Direct Instruction and Social Cognitive Theory. Best Behavior trains school personnel to adopt the general behavioral expectation rubric of "be safe, be respectful, be responsible" in order to directly teach and monitor performance related to safe behavior, maintaining positive teacher and peer relationships, and academic effort. The school team sets and defines the behavioral expectations, and then develops a set of lesson plans that incorporate the research-based principals described above.

Providing Positive Reinforcement for Prosocial Behavior
Critical to repetition of behavior is either vicarious or direct reinforcement for actions. Providing consistent positive reinforcement for prosocial behavior is critical to creating lasting change in behavior (Patterson, 1982). In combination with setting and clarifying expectations, teaching appropriate social behavior, monitoring compliance with expectations and consistently using mild negative consequences when expectations are violated, providing a rich schedule of positive reinforcement for appropriate behavior leads to a decrease in aggressive and disruptive behavior and an increase in cooperative behavior in school settings. (Acker & O'Leary 1987; Becker, 1986; Colvin, Sugai, et al. 1993; Embry, Flannery, et al. 1996; Gottfredson, Gottfredson, & Hybil, 1993; Hawkins, von Cleve, et al. 1991; Hops, 1978; Lewis, Sugai, et al. 1998; Mayer, Butterworth, et al. 1983; Mayer, 1995; Nafpaktitis, Mayer, et al. 1985; Olweus, 1992; Pfiffner & O'Leary 1987; Pfiffner, Rosen, et al. 1985; Walker et al., 1995. For example, Kellam, Ling, et al. (1998) showed that the Good Behavior Game, which rewards inhibition of negative behavior of first grade teams of students, can significantly reduce the development of antisocial behavior and smoking in sixth grade (Kellam & Anthony 1998). Further, Embry et al., (1996) and Flannery et al., (2003) have demonstrated that simple school wide peer-to-peer and adult-to-student reinforcement of social and emotional competence can prevent the development of multiple problems in adolescence.

Alignment with *Best Behavior*
Best Behavior includes instruction on designing and implementing school-wide and individual student reinforcement and recognition systems. Consistent with the research cited above. School teams are guided through a process of selecting and developing a mosaic of recognition strategies to achieve a rich, but intermittent Schedule of reinforcement for all students in the school.

Providing Performance-Based Feedback to School Personnel

High rates of office referrals, suspensions, or expulsions have been shown to predict numerous adjustment problems and antisocial behavior including delinquency, substance abuse, depression, and academic failure (Irvin, Tobin, Sugai, Sprague & Vincent, 2003; Shinn, Walker, Stieber, & O'Neill, 1987). For this reason knowledge of individual student histories of behavioral/disciplinary problems can be useful in planning behavioral support in schools and aggregated data can provide information on the extent to which systems supporting socially valued student behavior are in place in the school to address behavioral and disciplinary events and trends.

ODRs also can be useful for targeting teacher consultation and support. Wright and Dusek (1998) point out those behavior specialists may arrive at a better understanding of teachers' behaviors by studying discipline referral records and initiating "consultation with the teachers of individual students who display high rates of referrals to assist the teacher in developing a behavior plan. They may also consult with teachers who frequently refer large numbers of students, to help those instructors use proactive classroom management strategies" (p. 146).

Providing performance-based feedback to educators about use of office discipline referrals can positively impact their effectiveness by supporting more accurate decision-making regarding PBS practices (Gilbert, 1981). In some schools, a team of teachers, administrators, and other interested school staff works together to use ODR measures to make data based decisions. For example, Nakasato, (2000) reported that, "An elementary school reviewed its ODR data for the previous 2 years and discovered little, if any, improvement in student behavior despite having [classroom] incentive programs.   48% of the total behavioral problems were related to harassment incidents, of which 58% occurred on the playground, with peaks occurring before and after lunch recess. The leadership team decided to focus social skills training efforts specifically on the playground and on training lunch recess playground supervisors to provide acknowledgements and incentives for good behavior (p. 248)."

In a coordinated set of evaluation studies, Sprague et al., (1999) and Sugai, Sprague, Horner, & Walker (2000) reported the frequency of ODRs for each of four years of a school wide positive behavior support program in 14 elementary and 8 middle schools (1996-2000). As anticipated, most of the middle and elementary schools reported reductions in ODRs across the intervention years 1996-2000. The decreases in ODRs illustrate the sensitivity of school wide ODR measures to the effects of school wide behavioral interventions.

> **Alignment with *Best Behavior*.** Best Behavior includes training and sample data collection forms based on the School Wide Information System (www.swis.org) developed by personnel from the National Center on Positive Behavior Supports (www.pbis.org). School teams are trained to systematically collect and record patterns of office discipline referrals at the individual student, classroom, common area, and whole school level. Best Behavior also includes information on how to use data collected to improve decision making at all levels. This exciting and

innovative practice can also enhance the sustainability of intervention procedures (Tobin, Irvin, et al., 2004)

Effective Classroom Management

Teachers need strategies for teaching appropriate behavior and managing problem behaviors in the classroom. It is important that this work begins before the start of the school year. Teachers must establish a structured classroom environment that encourages appropriate behavior and fosters learning. Effective classroom managers know what they want to see in their classroom throughout the day (entering, leaving, transitions, and independent work), and what they want to hear from their students (noise level, being respectful, asking for help). Effective teachers do not assume that students instinctively know what is expected. Instead, hey explicitly teach, provide positive and constructive feedback until the behavior becomes an automatic part of the daily classroom routine.

In recent studies, teachers have used an active supervision package (i.e., high rates of movement, scanning, and interaction with students) and pre-correction strategies to reduce problem behavior associated with classroom transition settings (Colvin et al., in press; Depry & Sugai, in preparation), cafeteria settings (Lewis, Sugai, & Colvin, in press), and playgrounds/recess settings (Smith, Sugai, & Sprague, in preparation) across a wide range of student populations. In all cases, active supervision procedures were effective in reducing problem behavior. Efficient procedures and automatic classroom routines impact the amount of time that can be devoted to instruction (Carnine, Silbert & Kameenui, 1997; Hofmeister & Lubke, 1990; Latham, 1992).

Alignment with *Best Behavior*.
Best Behavior includes instruction on research-validated classroom organization and management techniques that include the use of active supervision, pre-corrective strategies and setting clear and consistent expectations for classroom routines.

Individual Student Supports

Traditional behavior management strategies, such as punishment or simple reinforcement, are not effective in changing chronic and intractable behavior problems if they are not logically linked to the causes and functions of the behavior(s). For example, if Jose' is using noncompliance to get out of completing a seatwork task, sending him to a time out will not change the behavior because he is achieving his desired outcome of getting out of seatwork through the consequence of his action. A better method for Jose' might be to ignore the minor noncompliance and indicate to him that lunch time will be taken until the seatwork is finished. We also would make sure the seatwork task is of appropriate difficulty, interesting, and perhaps a positive consequence is available for acceptable work.

A process called functional behavioral assessment (FBA) can be helpful in developing effective and positive behavior support plans (O'Neill et al., 1997; Crone & Horner,

2003). Effective positive behavior support plans include adapting the curriculum, instruction, and environment to individual student needs.

> **Alignment with *Best Behavior***. Best Behavior includes a series of chapters to train school teams to move from functional assessment to logically consistent, and contextually appropriate individual positive behavior support plans. In addition, teams are taught highly effective procedures for defusing angry and aggressive behavior in the classroom (Walker, Colvin and Ramsey, 1995)

Findings on the Effectiveness of *Best Behavior* and PBS

Research on Positive Behavior Support

Over the past ten years, Dr. Sprague and his colleagues at the Institute on Violence and Destructive Behavior at the University of Oregon (Hill Walker, Rob Horner, and George Sugai) have played a seminal role in the development and evaluation of Positive Behavior Support. The initial work involved a research project in five elementary schools and five middle schools. We worked with these schools at least once per week for one year to learn more about the process and challenges of discipline in schools, to field-test and pare down our training content, and to design a program of research that integrated our earlier work on individual student intervention, with universal school and classroom management interventions.

In 1998, we were funded to conduct a quasi-experimental analysis of PBS in middle schools (Sprague et al., 2001) which is described below. This was the first opportunity to experimentally test our staff and organizational development process (now contained in the published materials called Best Behavior: Building Positive Behavior Supports in Schools (Sprague & Golly, 2004, Appendix B) refine our intervention approach, and build and initially test our measures of implementation described later in this section.

In 1999 the National Center on PBS was established by the United States Department of Education, Office of Special Education within the IVDB (Horner and Sugai are Project Directors, Sprague is a collaborator and conducts single subject studies focused on individual student interventions). The National Center is conducting a randomized control trial of PBS in approximately 90 elementary schools in Oregon, Hawaii and Illinois. In addition to the ongoing research of the Center, we have collaborated with others to establish the Journal of Positive Behavioral Interventions (JPBI, Pro-Ed Incorporated), an international professional association called the Association for PBS (www.apbs.org) and a National PBS research Conference has been held for the past two years with several hundred members attending.

The Efficacy of Positive Behavior Support

A series of studies has documented some of the effects of school wide PBS interventions in elementary and middle schools (Metzler et al., 2001; Sprague, Walker et al., 2002). We have used office discipline referrals as an outcome measure, along with direct observation data, student and staff surveys, and implementation fidelity checklists. Studies have shown dramatic reductions in office discipline referrals (up to 50%), with continued improvement over multi-year periods in schools that sustain the PBS intervention (Irvin, Tobin & Sprague, 2004). Comparison schools consistently show increases or no change in office discipline referrals, along with general frustration with the existing school discipline program(s). In addition, school staff reports greater satisfaction with work and increased time for teaching (Scott & Barrett, 2004). Administrators report more time to provide support to the most at-risk students. Student ratings of school climate and interpersonal interactions improve and students report lower levels of aggression and engagement in risk behavior (Metzler et al., 2001). We outlined multiple studies in the significance section indicating the promise of different single-

component interventions (e.g., the good behavior game) as well as multi-component interventions (e.g., Peacebuilders, Embry & Flannery, 1994). At this point, however, our understanding of the effects of multi-component approaches such as PBS, especially in middle schools is limited. This section outlines what we do know, and points to the need for the proposed study. Our preliminary research specific to this project is outlined below and includes investigation of school-wide effectiveness and interventions for individual students.

Taylor-Greene et al., (1997) analyzed two years of office referral data in evaluation of a *school wide* positive behavioral support program designed to define, teach, and reward appropriate student behavior in a rural middle school (grades 6, 7, and 8). During 1994-95, the school had 530 students and recorded 2,628 office referrals. The 1995-96 school year began with a full day in which students learned five school expectations. Throughout the year, students also received rewards for appropriate behavior and office referrals for infractions. Results during 1995-96 document a 42% reduction in office referrals from the previous year.

In a quasi-experimental evaluation of PBS, Sprague et al. (2001) compared nine treatment and six comparison (no-intervention) elementary and middle schools in three communities. The treatment schools implemented a school wide positive behavior support intervention (Sprague & Golly, 2004; Sprague, Sugai & Walker, 2001; Sugai & Horner, 1994) model in addition to the Second Step violence prevention curriculum (Grossman et al., 1997) for one year. Comparison schools were not restricted in their use of interventions but received neither research-based training and consultation nor data-based feedback on their performance. Regarding changes in office discipline referrals, treatment schools generally showed dramatically greater reductions. Discipline referrals in comparison elementary schools reduced by only 5%, and comparison middle schools showed an average 65% *increase* in office referrals, while in intervention schools discipline referrals were reduced by up to 50% in participating elementary schools, and 35% in middle schools. Treatment school students showed improved social skill knowledge.

Sugai, Sprague, Horner, and Walker (2000) reported changes in discipline referral data associated with the implementation of PBS in elementary schools and middle schools. In two of the middle schools for which they had discipline referral data from before and after PBS implementation, they reported that the percent of students who got referrals dropped from 57% to 37% after three years in one school and from 50% to 37% another school after one year.

Metzler et al., (2001) evaluated the effects of PBS in one Oregon middle school. Another Oregon middle school served as comparison school. (At the time the intervention was referred to as "Effective Behavior Support," but it had all of the components of PBS.) Intervention effects were evaluated on time-series data from records of the implementation of PBS systems and discipline referrals, and repeated brief surveys of all students.

Time series analyses indicated that after PBS implementation, *average daily discipline referrals were significantly reduced for 7th graders and marginally reduced for 8th graders. Referrals for harassment dropped significantly; gender by offense breakdowns showed that this effect was primarily due to a decrease in harassment referrals for boys. Effect sizes for these changes are measured in standard deviation differences between baseline and intervention phases; the effect size was 2.01 for the change in 7th grade referrals, 1.28 for the change in harassment referrals, and .82 for the change in harassment among males.* PBS also reduced the proportion of students who received one or more referrals by 10% after one year and 19% after two years. It reduced the number of students who had 10-20 referrals from 38 to 23, a 39% reduction and the number who had 20-30 referrals from 15 to 1, a 93% reduction. Further, analyses of the longitudinal student data showed that the number of students' discipline referrals per school year was significantly related to self-reported antisocial behavior and substance use that same school year and predicted self-reported antisocial behavior in the

subsequent year. These analyses suggest that a high level of discipline referrals is a risk factor for other problems and indicates the importance of measuring and reducing discipline referrals in the school setting.

Students also filled out short, anonymous surveys on school climate. The School Climate Survey asked students to rate how safe they felt in the hallways, classroom, and cafeteria. The proportion of students who reported feeling quite or very safe rose from 59.3% to 75.6% among 6th graders and from 56.4% to 69% among 7th graders. The proportion of students who reported being the victim of verbal or physical harassment dropped from 50.5% to 27.8% for 7th graders over the two years of PBS implementation. They dropped from 46.3% to 31.3% for 6th graders.

Sprague and Nishioka (2004) implemented school wide PBS in two suburban middle schools in a suburban school district. Both middle schools had high rates of student mobility, a high percentage of students on free/reduced lunch, and high levels of academic failure. The schools also implemented Second Step Violence Prevention Curriculum as universal prevention interventions. Both schools showed a reduction in the relative percentage of total overt aggression and covert behavior from Year 1 to Year 2 of the study--35% and 26%.

Research on Components of PBS

In addition to work on the overall efficacy of PBS, we have conducted numerous studies pinpointing the effects of specific components of PBS. This section will describe illustrative studies in this area of inquiry. PBS components targeted to individual students includes teaching self-management, providing additional training on expected behavior, positive family contacts, systematic supervision in school, and behavior management techniques based on a functional analysis of the consequences maintaining problem behavior.

In the Sprague and Nishioka (2004) study described above, we also analyzed outcomes for those students receiving who received individualized programs in one of the schools. Individualized program elements included a daily mentoring "check-in," behavior management plans based on functional behavioral assessment (O'Neill et al.,1997), additional social skills training, positive family contacts and extra academic support. In a quasi experimental design, at-risk students in the treatment school were compared to a matched group at the control school. We compared the juvenile arrest rate for treatment and control students to determine differences in both frequency of arrests and severity of crimes committed for the two year study period. Prior to treatment, the students selected for additional supports had over twice as many juvenile arrests and committed more crime than the comparison group. However, post placement arrest data indicated that students receiving individualized support had only 2 additional arrests, while comparison students had a total of 29 new arrests. Treatment youth also reported little increase in aggressive perpetration and victimization during the intervention while the comparison group showed a steady increasing trajectory of aggressive behavior and victimization. This study is important because it illustrates the possibility of slowing or stopping the onset or acceleration of multiple problem behaviors with a combined package of universal and selective intervention supports.

Hawken & Horner (in press) investigated the functional relations between implementation of a daily "check in and check out" system and problem behavior in the classroom of five sixth grade students who were among the top 10% of students in the school for receiving office discipline referrals for disruptive and aggressive behavior. Students met a school adult each morning and afternoon to review behavioral goals and progress from the previous day. The study used a single-subject multiple baseline design across students and measured problem behavior and academic engaged time (AET) in the most problematic classrooms for these students. All five students showed sizable reductions in problem behavior and mild increases in AET, even though their AET levels were not far below class norms in the baseline phase.

Reed, Thomas, Sprague, & Horner (1997) used the Student-Directed Functional Assessment Interview (O'Neil et al., 1997) to examine the effects of student participation

in the functional behavioral assessment process. Agreement between student, teacher, and direct observation information was compared across components of a behavioral hypothesis statement (antecedent, behavior, consequence) and behavior support plan recommendations. Results revealed high agreement across data sources regarding the antecedents and consequences of problem behaviors and support plan recommendations. This finding is important relative to the possible efficacy of involving the students themselves in the individual behavior support plan process.

Measures of the Effects of School Wide Positive Behavior Support

Office Discipline Referrals (ODRs) as an Outcome Measure. Individual student histories of behavioral/disciplinary problems can be useful in planning behavioral support for individual students and discipline referral data can also help in identifying teachers who could use additional assistance (Wright & Dusek, 1998). Such data are also valuable for pinpointing settings where additional efforts are needed (Nakasato, 2000). Sprague et al., (1999) and Sugai, Sprague, Horner, & Walker (2000) reported the frequency of ODRs for each of four years of a school wide positive behavior support in 14 elementary and 8 middle schools (1996-2000). As anticipated, most of the middle and elementary schools reported reductions in ODRs across the intervention years 1996-2000. The decreases in ODRs illustrate the sensitivity of school wide ODR measures to the effects of school wide behavioral interventions.

School Wide Information System. We have developed a comprehensive, web-based system of entering and tracking office discipline referrals called the School Wide Information System (SWIS; Horner, et al., 2003). SWIS is a web-based information system designed to help school personnel use office referral data to design school wide and individual student interventions. The three primary elements of SWIS are a) an efficient system for gathering information, b) a web-based computer application for data entry and report generation, and c) a practical process for using information for decision-making

These three elements give school personnel the capability to evaluate individual student behavior, the behavior of groups of students, behaviors occurring in specific settings, and behaviors occurring during specific time periods of the school day. SWIS reports indicate times and/or locations prone to elicit problem behaviors and allow teachers and administrators to shape school wide environments to maximize students' academic and social achievements. Schools are asked to summarize and report the data to school faculty at least monthly. Currently, SWIS is in use by over 900 schools in the United States and 10 schools in Norway.

One of the exciting opportunities in the Center on Early Adolescence will be to do further research on the validity of SWIS and school discipline referral records generally. We will implement SWIS in the 18 middle schools receiving the PBS intervention. We will have extensive data on student behavior in those schools and will be able to relate it to SWIS data. Moreover, we will have survey data on the behavior of students in at least 36 middle schools that we will be able to compare to school records data.

Development and Validation of Measures of PBS Implementation

There are few empirical tests of the influence of intervention fidelity on intervention outcome (Gottfredson, 2001; Mihalic & Irwin, 2004), and yet the few investigations conducted indicate a meaningful correlation. In the work proposed here, we will use a staff self-report measure (Assessing Behavior Support in Schools/EBS-SAS), and a direct observation and interview protocol called The School wide Evaluation Tool.

Effective Behavior Support Self-Assessment Survey. This survey (Sugai, Horner, & Todd, 2000) was developed to measure school personnel ratings of implementation, and priority for improvement across four systems of school wide positive behavior support (school wide, classroom, individual student, and common area). The assessment is administered to school staff prior to implementation of PBS, and annually thereafter. A scoring scheme covers Current Status, where 1=In Place, 2=Partial, 3=Not, and an Improvement Priority Scale, where 3=Hi, 2=Med, 1=Low. The instrument shows acceptable internal consistency and correlation with selected measures of the School-

wide Evaluation Tool. Stieber and Sprague (in preparation) analyzed 2302 completed surveys collected from 104 schools in Oregon and California. A four-factor principal components analysis shows excellent internal consistency across the four scales of school wide, classroom, individual student, and common area ratings.

   The School wide Evaluation Tool (SET) The SET was developed to measure the implementation of PBS (Horner, Todd, Lewis-Palmer, Irvin, Sugai, Boland, 2004; Sugai, Lewis-Palmer, Todd, & Horner, 2001). Data to complete the 28 items of the SET are collected by on-site observers who review school documents, examine physical spaces, interview staff and the administrator, and interview students over a 60-90 min period. Each SET item is scored as "in place," "partially in place," or "not in place." The SET produces a summary score (0-100%) and seven subscale scores. These are a) school wide behavioral expectations are defined, b) expectations are taught, c) rewards are provided for following the behavioral expectations, d) a continuum of consequences for problem behavior is in place, e) data on problem behavior are collected and used for decision-making, f) an administrator actively supports School wide PBS, and g) the school district supports School wide PBS. A school meets criterion as "implementing School wide PBS" when the SET results indicate a summary score $\geq$ 80% and an "expectations taught" subscale score $\geq$ 80%.

   Horner et al. (in press) report internal consistency reliability of the SET at an overall alpha level of .96, with a test-retest level of 97.3%. The validity of the SET was evaluated within Messick's (1988) unified construct validity framework. Summary SET scores from 31 schools were compared with scores from the school wide section of the Effective Behavior Support Self-assessment Survey (Sugai, Horner, & Todd, 2000) and produced a Pearson r = .75 (p $\leq$ .01). Subscale scores of the SET also were demonstrated to correlate acceptably with the SET Summary score (median r = .65; range .44 to .81).

References

Crone, D, A., & Horner, R. H. (2003). Building positive behavior support systems in schools: Functional behavioral assessment. New York: Guilford Press.

Emmer, E.T., Evertson, C.M., Sanford, J.P., Clements, B.S., & Worsham, M.E. (1984). <u>Classroom management for secondary teachers</u>. Englewood Cliffs, NJ: Prentice Hall.

Evertson, C.M., Emmer, E.T., Clements, B.S., Sanford, J.P. & Worsham, M.E. (1984). <u>Classroom management for elementary teachers</u>. Englewood Cliffs, NJ: Prentice Hall.

Grossman, D. C., Neckerman, H. J., Joepsell, T. D., Liu, P., Asher, K. N., Beland, K., Frey, K., & Rivara, F. P. (1997). Effectiveness of a violence prevention curriculum among children in elementary school. *Journal of the American Medical Association, 277*(20), 1605-1611.

Irvin, L.K., Tobin, T.J., Sprague, J.R., & Vincent, C.G. (in press). Validity of office discipline referrals measures as indices of school-wide behavioral status and effects of school-wide behavioral interventions. University of Oregon OSEP Center on Positive Behavioral Interventions and Supports.

Kellam, S. G., Mayer, L. S., Rebok, G. W., & Hawkins, W. E. (1998). Effects of improving achievement on aggressive behavior and of improving aggressive behavior on achievement through two preventive interventions: An investigation of causal paths. Dohrenwend, Bruce P. (Ed.), et al. *Adversity, stress, and psychopathology*. (pp. 486-505). New York, NY, USA: Oxford University Press. xv, 567 pp.

Lewis, T. J, Sugai, G., & Colvin, G. (1998). Reducing problem behavior through a school-side system of effective behavioral support: Investigation of a school-wide social skills training program and contextual interventions. *School Psychology Review, 27*, 446-459.

Mayer, G. R. (1995). Preventing antisocial behavior in the schools. *Journal of Applied Behavior Analysis, 28*(4), 467-478.

Metzler, C.W., Biglan, A., Rusby, J.C., &Sprague, J.R. (2001). Evaluation of a comprehensive behavior management program to improve school-wide positive behavior support. *Education and Treatment of Children, 24(4),* 448-479.

O'Donnell, J., Hawkins, J., Catalano, R., Abbott, R., Day, L. (1995). Preventing school failure, drug use, and delinquency among low-income children: long-term intervention in elementary schools. *American Journal of Orthopsychiatry*. 65:87-100.

O'Neill, R.E., Horner, R.H., Albin, R.W., Sprague, J.R., Newton, S., & Storey, K. (1997). Functional assessment and program development for problem behavior: A practical handbook. Second Edition. Pacific Grove, CA: Brookes/Cole Publishing.

Sprague, J., Walker, H., Golly, A., White, K., Myers, D. R., & Shannon, T. (2002). Translating research into effective practice: The effects of a universal staff and student intervention on key indicators of school safety and discipline. *Education and Treatment of Children, 23*.

Sprague, J. R., Sugai, G., Horner, R. H., & Walker, H. M. (1999). Using office discipline

referral data to evaluate school-wide discipline and violence prevention interventions. *Oregon School Study Council Bulletin, 42*(2). Eugene, OR: University of Oregon, College of Education.

Sprague, J. R., Sugai, G., & Walker, H. (1998). Antisocial behavior in schools. In T. S. Watson & F. M. Gresham (Eds.), *Handbook of child behavior therapy* (pp. 451-474). New York: Plenum.

Sugai, G., & Horner, R. (1994). "Including students with severe behavior problems in general education settings: Assumptions, challenges, and solutions." *Oregon Conference Monograph, 6*, 102-120.

Taylor-Greene, S., Brown, D., Nelson, L., Longton, J., Gassman, T., Cohen, J., Swartz, J., Horner, R. H., Sugai, G., & Hall, S. (1997). School-wide behavioral support: Starting the year off right. *Journal of Behavioral Education, 7*, 99-112.

Tobin, T., Sugai, G., & Martin, E. (2000). *Final report for Project CREDENTIALS: Current research on educational endeavors to increase at-risk learners' success* (Report submitted to the Office of Professional Technical Education, Oregon Department of Education). Eugene: University of Oregon, College of Education, Behavioral Research and Teaching.

Todd, A. W., Horner, R. H., Sugai, G., & Sprague, J. R. (1999). Effective behavior support: Strengthening school-wide systems through a team-based approach. Effective School Practices, 17(4), 23-37. ADI.

Walker, H. M., Colvin, G., & Ramsey, E. (1995). Antisocial behavior in school: strategies and best practices. Pacific Grove, CA: Brooks/Cole.

Walker, H. M., Horner, R. H., Sugai, G., Bullis, M., Sprague, J. R. Bricker, D., & Kaufman, M. J. (1996). Integrated Approaches to Preventing Antisocial Behavior Patterns Among School Age Children and Youth. Journal of Emotional and Behavioral Disorders, Volume 4, No. 4. 194-209.