

## **Competitive Preference Priorities**

### Competitive Preference Priority #5, “Innovations in Improving Early Learning Outcomes”

The “Improving Educational Outcomes for American Indian Children” will address CCP #5 by providing services to high-needs American Indian children ages prenatal to 5 years and their families. The project, named BabyFACE, will improve educational outcomes for children from birth through 3<sup>rd</sup> grade and is supported by evidence from prior evaluations.

(a) The project is an adaptation of a unique intervention that has been proven to be successful with American Indian families and has been implemented for over 20 years. BabyFACE is innovative in that it breaks the intergenerational issue of illiteracy that is a problem among many American Indian tribes, utilizes a home-visiting strategy to address the barrier to early childhood education of geographic isolation, and integrates tribal language and culture.

The partners propose to implement this evidence-based home visitation program at 24 BIE schools that do not currently offer home-based parent education and early education services. In addition to home-visiting services, the project will increase literacy resources in the home to increase literacy activities between parents and their infants, toddlers and preschoolers.

(b) Through regular health and developmental screenings, the BabyFACE project will assess each child’s progress in meeting developmental milestones. When a concern is indicated, referral and follow-up will occur with appropriate health and/or early intervention services. (See Appendix H for Table 2 that outlines the screening and evaluation tools used to assess the desired outcomes.)

(c) While BabyFACE is a home-based strategy to address the isolation that many American Indians families face, it includes a monthly group meeting component that is held at the local

elementary school. These meetings help the families transition from home-based services to center-based services and facilitate transition to preschool and kindergarten.

The BabyFACE parent educators will be employees of the local schools and will serve as a link between the families and the schools to facilitate successful transitions into kindergarten.

Competitive Preference Priority #8, “Innovation that Serve Schools in Rural LEAs”

American Indian families living on tribal lands are often geographically isolated. Poverty and distance make travel a barrier. Therefore, this project removes those barriers to early childhood health and education by sending the parent educators into the homes of the families.

Another barrier that contributes to the achievement gap in low performing schools is that a high percentage of American Indian families speak the Native language at home as the primary language. To address this issue, parent educators who speak the Native language are hired from within the community.

All of the 24 BIE schools participating in this project are persistently low performing schools as defined by the Department, and all of the schools are “rural” schools. It should be noted that BIE schools are not eligible for either the Small Rural School Achievement (SRSA) program or the Rural and Low-Income School (RLIS) program. However, they meet the following criteria outlined in the SRSA and RLIS programs:

- 20% or more of the children ages 5 through 17 served by the LEA are from families with incomes below the poverty line;
- Each county in which a school served by the LEA is located has a total population density of fewer than 10 person per square mile;
- The total number of students in average daily attendance at all of the schools served by the LEA is fewer than 600.

The Parents as Teachers model upon which BabyFACE is based has been proven to close the achievement gap and to improve student achievement through third grade for children from impoverished families. The evidence is stated in the Narrative.

## **Narrative**

### **Title: Improving Educational Outcomes for American Indian Children**

This Validation Grant application addresses Absolute Priority 4, “Innovations that Turn Around Persistently Low-Performing Schools.” This project addresses high-needs students by closing the achievement gap at kindergarten entry and by improving student achievement through a targeted approach replicating a proven home-based intervention for American Indian families living on tribal reservations.

The applicant is Parents as Teachers National Center (National Center), the official partner is a consortium of 24 Bureau of Indian Education (BIE) schools, and another partner is the Bureau of Indian Education’s Albuquerque Service Center.

#### **A. Need for the Project and Quality of the Project Design**

(1) The applicant and 24 official partners propose to increase student performance at 24 BIE schools. The need is clear since these schools are among the most chronically low-performing schools in the country. Related, is the need for early education and child development services, which is a largely unmet need in the American Indian population:

- Of the 24 BIE schools in this project, currently only 7 offer any pre-school services.
- 60% of the homes of American Indian kindergartners have 25 or fewer books, compared to 25% of home nationally that have as few.<sup>1</sup> The homes of American Indian children rank with

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<sup>1</sup> U.S. Census Bureau, Statistical Abstract of the United States 2004-2005, 124<sup>th</sup> Edition. The national data book, p. Education 147. Table No. 223. Children’s School Readiness Skills: 1993

third world countries in international studies of access to books and literacy materials in the home.<sup>2</sup>

- 39% of American Indian/Alaska Natives children age 5 years and younger live in poverty, more than double the rate for Caucasian children (16%). Census Bureau 2006.
- Only 33% of American Indian children attend preschool, compared to 60% of Caucasian children. Child Trends 2003

The lack of early education resources is reflected in lower achievement in later schooling.

<b>Indicator</b>	<b>National</b>	<b>BIE Schools 2008-2009</b>
High School Graduation Rate	73%	52.46%
High School Dropout Rate	8.7%	8.08%
Reading Achievement Proficient + Advanced	33%	37.51%
Math Achievement Proficient + Advanced	45%	33.26%

Sources: OIEP 2008-2009 Annual Report Card & National Center for Education Statistics

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and 2001. Washington, D.C.: Author. [www/census.gov/statab/www/statistical-abstract-04.html](http://www/census.gov/statab/www/statistical-abstract-04.html).

<sup>2</sup> Mullis, I.V.S., Martin, M.O., Gonzales, E.J., & Kennedy, A.M. (2003). PIRLS 2001 international report: IEA's study of reading literacy achievement in primary schools. Chestnut Hill, MA: Boston College.

(2)(a) In order to meet the need to increase student performance at 24 BIE schools, the partners propose to implement an evidence-based home visitation program for high-needs families with children ages prenatal to kindergarten entry

The goals are to narrow the achievement gap of American Indian children at kindergarten entry and to improve student achievement in reading and math through the third grade. The objectives are a) early identification of health and developmental issues and referral for intervention of any delays, b) increasing parental knowledge of child development, c) increasing access to literacy resources in the home, d) increasing literacy activities, e) increasing parent involvement in their child's education, and f) increasing school readiness. The outcomes are a) fewer special education services needed at kindergarten entry, b) parents utilize effective child management techniques and have age-appropriate expectations for their children, c) more books and pre-literacy materials in the home, d) parents spend more time on literacy activities with the child(ren), e) parents attend or initiate meetings with teachers, and f) children score better on assessments.

The BabyFACE intervention is designed to meet the need by accomplishing the objectives through its four components: personal home visits, usually weekly or bi-weekly, delivered by trained and certified parent educators; monthly group meetings; routine vision, hearing, health and developmental screenings to detect any delays and make referrals for further evaluation and treatment as needed; and resource referrals as needed. (See Appendix H for the PAT Logic Model.)

The objectives of increasing parental knowledge child development and of increasing school readiness will be reached for children in BabyFACE through regular weekly or bi-weekly home visits provided by parent educators who are certified to use the research-based, age-

specific personal visit plans from the *Born to Learn*® curriculum. Each personal visit plan provides child development and parenting information which the parent educator discusses with the parents and then helps them practice through the related parent-child activity.

Closely related to school readiness are the objectives of increasing literacy resources in the home and increasing literacy activities in the home. Research clearly shows that more books in the home, and more time spent reading to a child increases vocabulary and early literacy skills. BabyFACE parent educators will provide an age-appropriate book to the family in each personal visit, teach the parent techniques for engaging the child in the book, and encourage the parent to use those techniques frequently between personal visits. The grant will also fund the enrolment of each BabyFACE child in the highly acclaimed Imagination Library so they will receive a high-quality, age-appropriate book in the mail each month. The goal is to infuse 100 children's books into each BabyFACE child's home by the time they reach kindergarten. Research equates this quantity with increased school readiness.

The objective of identifying health and developmental issues before kindergarten entry will be met through regular screening during personal visits. Developmental screening will be through the use of the *Ages and Stages Questionnaire* and the *Ages and Stages: Social Emotional Questionnaire* twice during each program year. (This tool is used by many early intervention programs, but is especially effective when used in the home, by a parent educator who has a relationship with the parent and child. The parent educator also uses the ASQ and ASQ:SE as a parent education tool.) Annual health screening will be through the Parents as Teachers *Health Record*, and functional hearing and vision screening will also occur annually. For the hearing screening a tool will be used that measures otoacoustical emissions, which is an evidence-based tool for hearing screenings for infants and toddlers. As needed, the objective of connecting

families with intervention services will be met by using the Referral Process developed by Parents as Teachers specifically for use in FACE programs in Native communities.

The objective of increased parental involvement in the child's schooling will be reached in a couple of ways. Because BabyFACE parent educators will be from the community, and therefore American Indian and usually Native speakers, they will be better able to establish trusting relationships with families. Because of this relationship of trust and because they will be operating out of the BIE school, the parent educators will be able to encourage the families' connections to the school. Also, through attendance at the monthly BabyFACE parent group meetings, which will be held in the school, the parents will become comfortable being in the school and comfortable talking with the principal and other staff in a positive way about their child. (Many, if not most, American Indian parents have very negative associations with school, some of which stem from the days of boarding school atrocities.)

This intervention strategy follows the theories of by Dr. James Heckman, Nobel Laureate in Economics, University of Chicago. Dr. Heckman's research argues that "life cycle skill formation is dynamic in nature. Skill begets skill; motivation begets motivation. If a child is not motivated and stimulated to learn and engage early on in life ... the more costly it is to remediate disadvantage." Thus, emphasis on early intervention is more effective than later remediation.

The project is an adaptation of a unique intervention that has been proven to be successful with American Indian families and has been implemented for over 20 years. In 1990 the BIE funded six schools to implement a new educational intervention to address the poor educational achievement of American Indian children. The intergenerational program, Family And Child Education (FACE), is a family literacy program involving families with children ages prenatal to third grade. It includes both a school-based component and a home-based strategy.

The home-based component of the FACE program is an adaptation of the Parents as Teachers (PAT) early childhood education and parent support model with special emphasis on tribal cultures and languages. It is this home-based component that is to be separated and named BabyFACE.

The FACE program addresses common characteristics of low-achieving children, namely poverty, low parental education, high levels of teen pregnancy, single-parent status, the fact that the language of the larger culture may not be spoken at home, the presence of speech and learning disabilities, low frequency of reading to children, few books in the home, and lower participation in and quality of preschools and schools.<sup>3</sup> Cultural factors that may affect early development, educational expectations, and learning in ways that affect school achievement also are addressed by the FACE program.

The BIE intended to implement the FACE program at all BIE schools over time to reduce and ultimately eliminate the large achievement gap that exists for American Indian children at school entry and persists throughout early elementary years. Despite 20 years of growth, resource limitations have prevented the program from being brought to scale in the BIE's primarily rural schools. Therefore there is the need to implement the proposed BabyFACE project at 24 BIE schools that do **not** offer the FACE program.

The evidence base for BabyFACE comes from evaluations for the home-based component of FACE and for the original PAT model. BabyFACE is innovative in that it breaks the intergenerational issue of illiteracy that is a problem among many American Indian tribes, utilizes a home-visiting strategy to address the barrier of geographic isolation, and integrates

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<sup>3</sup> Demmert, W.G. and Grissmer, D. Improving the Education of Native American Children.

NIH work in progress, January 2005.

tribal language and culture. The Parents as Teachers model, which is the basis of the BabyFACE model, is a recognized effective strategy for improving educational outcomes for high-needs children. Among the citations for Parents as Teachers are the following:

- Listed as “What Works” in Child Trends Guide to Effective Programs for Children and Youth under “Parenting or Family Component” and “Home Visiting.”

[http://www.childtrends.org/Lifecourse/programs/ParentsAsTeachers\(PAT\).htm](http://www.childtrends.org/Lifecourse/programs/ParentsAsTeachers(PAT).htm)

- Listed on the Proven and Promising Practices Web site.

<http://www.promisingpractices.net>

- Listed as a promising program by the Office of Juvenile Justice and Delinquency Prevention (OJJDP) Model Program Guide.

[http://www.dsgonline.com/mpg2.5/parent\\_training\\_prevention.htm](http://www.dsgonline.com/mpg2.5/parent_training_prevention.htm)

- Listed as an “Educational Program that Works” by the National Diffusion Network, 1995.

<http://www.ed.gov/pubs/EPTW/index.html>

(2) (b) The FACE quality assurance guidelines will be used to help ensure that the model is implemented in a consistent manner and with fidelity in order to achieve the goals, objectives and outcomes found in the home-based portion of the FACE program.

(3) The BabyFACE project will be implemented to be completely consistent with the research of the FACE and PAT models. Because the replication is based on the home-based evaluations of FACE, the project already takes into account the culture context and diversity of each Tribe.

## **B. Strength of Research, Significance of Effect, and Magnitude of Effect**

(1) Four independently conducted randomized controlled trials (RCTs) of the PAT program and seven peer-reviewed published outcome studies constitute the moderate evidence

for the internal and external validity of the effects of the program. Studies of the Parents as Teachers (PAT) model as it is implemented in a wide variety of educational and community settings nationwide and worldwide provide moderate evidence for improving student achievement and growth, closing achievement gaps for high needs students, improving transitions at critical points of development, and reducing non-academic barriers to student achievement, such as home literacy activity and the parent's engagement in their child's learning and education. The PAT model is an evidence-based home visiting program that has been the subject of research conducted or supported by state governments, independent school districts, private foundations, and universities and research organizations.

The BabyFACE program proposed for the Validation grant will employ the same practices, strategies and program that constitutes the PAT model, as well as its culturally-relevant adaptation in the BIE's FACE home-based early childhood component, both of which have been the subject of prior research.

The first evaluation of the then-named "Parents as First Teachers" pilot program was conducted by Research & Training Associates, Inc. (RTA), the proposed outside evaluator for this grant, and funded by the Ford Foundation. The study results of this quasi-experimentally designed study were published in 1989 and provided the first evidence that participation in this program increases the child's intellectual development at age three.<sup>4</sup> A longitudinal follow-up to this study found that PAT children scored significantly higher on standardized measures of reading and math at the end of first grade than did comparison children. In addition, teachers rated PAT children's achievement progress higher than control group children's progress in all

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<sup>4</sup> Pfannenstiel, J. and Seltzer, D. (1989). New Parents as Teachers: Evaluation of an Early Parent Education Program. *Early Childhood Research Quarterly*, 4, 1-18.

areas.<sup>5</sup> Another study similarly found that PAT children continued to perform better than non-PAT children on standardized tests of reading and math achievement in second grade. Compared to non-PAT children, PAT children required half the rate of remedial and special education placements in third grade.<sup>6</sup>

In the most recent RCT study, the program's effectiveness in improving the early achievement of children at risk of failure was demonstrated. PAT children scored significantly higher on mastery motivation<sup>7</sup> at 36 months. At 24 months, greater effects were found for low-income PAT families, whose children scored significantly higher on cognitive development and mastery motivation than comparison group families.<sup>8</sup> A multi-site RCT study demonstrated that for families of very low income, those who participated in PAT were more likely to read aloud to their child, tell stories, say nursery rhymes, and sing with their child<sup>9</sup>—home literacy strategies

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<sup>5</sup> Pfanenstiel, J. (1989). *New Parents as Teachers project: A follow-up investigation*. Overland Park, KS: Research & Training Associates.

<sup>6</sup> Drazen, S., & Haust, M. (1995). *The effects of the Parents and Children Together (PACT) program on school achievement*. Binghamton, NY.

<sup>7</sup> The attempt to independently, in a focused and persistent manner, solve a problem or master a skill or task which is at least moderately challenging.

<sup>8</sup> Drotar, D., Robinson, J., Jeavons, I., and Kirchner, H.L. (2009). A randomized, controlled evaluation of early intervention: The Born to Learn curriculum. *Child: Care, health and development*, 35, 643-649.

<sup>9</sup> Wagner, M. & Spiker, D. (2001). *Multisite Parents as Teachers Evaluation: Experience and outcomes for children and families*. Menlo Park, CA: SRI, Int'l

[www.sri.com/policy/cehs/early/pat.html](http://www.sri.com/policy/cehs/early/pat.html)

that are important predictors of school readiness and early elementary success. The results of an RCT study that focused on adolescent mothers demonstrated that mothers who received case management and PAT were significantly less likely to be subjected to child abuse investigations than mothers in the control group.<sup>10</sup> In another previously cited randomized trial, adolescent mothers in an urban community who participated in Parents as Teachers scored lower on a child maltreatment precursor scale than mothers in the control group.<sup>11</sup> These adolescent mothers showed greater improvement in knowledge of discipline, showed more positive involvement with children, and organized their home environment in a way more conducive to child development.

Other large sample studies of the PAT program have focused on the empirical assessment of the internal validity of the theoretical and hypothesized ways in which the model demonstrates its causal effects on important early indicators of school readiness and sustained achievement in the early elementary years. More than 7,700 public school children from a stratified random sample of Missouri districts and schools were examined at kindergarten entry and at the end of third grade. Using structural equation modeling of time-sequenced causal pre-kindergarten events, the PAT program demonstrated its direct effects on significantly more frequent home

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<sup>10</sup> Wagner, M.M. & Clayton, S.L. (1999). The Parents as Teachers Program: Results from Two Demonstrations. *The Future of Children: Home Visiting: Recent Program Evaluations*, 9(1), 91-115.

<sup>6</sup>Wagner, M., Iida, E. & Spiker, D. (2001). *The multisite evaluation of the Parents as Teachers home visiting program: Three-year findings from one community*. Menlo Park, CA: SRI International.

literacy activity, such as parents reading to their child, and on significantly more frequent preschool attendance, both of which increased the child's school readiness.<sup>12</sup> Not only did participation in PAT, together with preschool and the frequency that the child is read to, positively impact children's school readiness and school achievement scores, but participation also narrowed the achievement gap between children in poverty and those from non-poverty households. With at least two years of PAT combined with a year of preschool, 82% of poor children were ready for school at kindergarten entry—a level identical to non-poverty children with no PAT or preschool participation.<sup>13</sup> A subsequent study demonstrated that PAT parents were more involved in children's school activities and engaged their children more frequently in home learning activities, especially literacy related activities.<sup>14</sup>

In an investigation of the sustained and longer-term effects of PAT participation on children's achievement, PAT children showed better school readiness at the start of kindergarten, higher reading and math readiness at the end of kindergarten, higher kindergarten grades, and

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<sup>12</sup> Pfannenstiel, J.C., Seitz, V., & Zigler, E. (2002). *Promoting school readiness: The role of the Parents as Teachers program. NHSA Dialog: A Research-to-Practice Journal for the Early Intervention Field*, 6, 71-86.

<sup>13</sup> Pfannenstiel, J.C. & Zigler, E. (2007). *Prekindergarten experiences, school readiness and early elementary achievement*. Unpublished report prepared for Parents as Teachers National Center.

<sup>14</sup> Albritton, S., Klotz, J., & Roberson, T. (2004) The effects of participating in a Parents as Teachers program on parental involvement in the learning process at school and in the home. *E-Journal of Teaching and Learning in Diverse Settings*, 1(2), 108-208.

<http://www.subr.edu/coeducation/ejournal/Albritton%20et%20al.Article.htm>.

fewer remedial education placements in first grade.<sup>15</sup> In a replication and extension of an earlier study by Pfannenstiel, Zigler and Seitz, greater intensity of PAT participation significantly predicted children's third grade achievement on the statewide reading assessment. The study further demonstrated the importance of **school readiness as an important outcome for early learning programs: in this structural equation model, school readiness was the largest predictor of third grade achievement, three times the magnitude of child poverty and race/ethnicity. Thus, bringing children to a level playing field at school entry is a critically important element for improved achievement and narrowing the achievement gap.**<sup>16</sup>

Additional quasi-experimental and correlational studies of the model as it has been adapted to integrate the culture and languages of the American Indian communities served by BIE schools and incorporated into the BIE's Family and Child Education (FACE) Program have been conducted under the aegis of the Office of Management and Budget and the BIA's Bureau of Indian Education. In a quasi-experimental study commissioned by the Office of Management and Budget,<sup>17</sup> FACE children were found to enter kindergarten on a level playing field with their

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<sup>15</sup> Drazen, S., & Haust, M. (1995). *The effects of the Parents and Children Together (PACT) program on school achievement*. Binghamton, NY.; Drazen, S. & Haust, M. (1996). *Lasting academic gains from an early home visitation program*. Paper presented at the annual meeting of the American Psychological Association, August 1996.

<sup>16</sup> Zigler, E., Pfannenstiel, J.C., & Seitz, V. (2008). The Parents as Teachers Program and School Success: A Replication and Extension. *Journal of Primary Prevention*, 29, 103-120.

<sup>17</sup> Pfannenstiel, J., Yarnell, V. and Seltzer, D. (2006). Family and Child Education (FACE) Program: Impact Study Findings. Overland Park, KS: Research & Training Associates, Inc.

comparison school peers, despite the fact that FACE children had significantly more characteristics that place them at risk for educational failure (e.g., mothers with less than a high school education, single-parent households, and primary language in the home is not English), than did comparison children. FACE children entered kindergarten scoring similarly to their American Indian peers on a standardized test of reading and mathematics achievement, but both groups scored significantly below the national norm. A structural equation model was successfully fitted to the data and supported the FACE program's logic model for how participation predicts school readiness. The frequency of home literacy activity was a significant, direct, and meaningful predictor of school readiness—whether it was measured by the direct assessment method of a nationally standardized test or by teacher observations and ratings of kindergartners' readiness on multiple "whole child" domains.

(2) Especially for children in rural reservation settings, the effects of early identification of language delays, the focus on vocabulary acquisition, the availability of books in the home, and the frequency that parents conduct home literacy activity provide significant, direct and meaningful effects on kindergarten readiness. While path coefficients<sup>18</sup> that predict the direct effects of the frequency that adults read to a child and kindergarten readiness are approximately .13 in magnitude (Zigler et al., 2008), the magnitude for children in BIE schools was almost twice the size found for public school students in non-reservation settings (Pfannenstiel et al., 2006). Thus, providing a pre-kindergarten literacy and parent support program to children in households near BIE schools is expected to alter the typical trajectory for American Indian

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<sup>18</sup>The magnitude of path coefficients are interpreted similarly to regression coefficients, ranging from 0-99.

children that results in a large achievement gap at school entry and extends throughout their schooling.

### **C. Experience of the Eligible Applicant**

The non-profit National Center has directed the replication of the Parents as Teachers service model in all 50 states and seven other countries (Australia, Canada, China, Germany, Mexico, New Zealand and the United Kingdom). Today there are 3,100 local Parents as Teachers programs serving more than 250,000 families representing more than 335,000 children. The non-profit Parents as Teachers National Center is the applicant for this Validation Grant. The official partners are 24 BIE schools. The Bureau of Indian Education is an other partner. Research & Training Associates is the evaluator and a contractor. The BIE schools that are official partners are listed in Appendix H.

(1) In addition to program replication, the National Center has provided technical assistance and administrative support for the FACE program for American Indian families for 20 years. Through a contract with the Bureau of Indian Education, the National Center serves FACE programs at 45 BIE schools in 11 states.

The Parents as Teachers *Heroes at Home* initiative for military families is a project of the National Center. Through a contract with the Department of the Army, Parents as Teachers *Heroes at Home* has been expanded from 9 bases to 36 installations over the past three years.

(2)(b) Through its work in public schools, Parents as Teachers has narrowed the achievement gap between low-income children and their more affluent peers, and has improved school readiness and school success for low-income children. In a recent evaluation (Zigler et. al. 2008) 7,710 public school children from a stratified random sample of Missouri districts and schools were examined at kindergarten entry and at the end of third grade. Results showed that

participation in Parents as Teachers, together with preschool, not only positively impacts children's school readiness and school achievement scores, but also narrows the achievement gap between children in poverty and those from non-poverty households. A re-analysis using a subset of the above data strongly confirmed these findings. Similar effects were verified in evaluations of Parents as Teachers programs in New York, California and North Carolina.

Evaluations of the home-based component of the FACE model also demonstrate closing the achievement gap for children who participate in the program with their families.

#### **D. Quality of the Project Evaluation**

(1) RTA proposes to conduct a quasi-experimental evaluation of the proposed BabyFACE program and will conduct a comprehensive research study that will compare and analyze the impact of BabyFACE involvement as it relates to the early identification and prevention of developmental delays, parent knowledge and parenting education, home literacy, preschool attendance, and attainment of readiness skills necessary for success at kindergarten entry and in early elementary years. As outlined by the No Child Left Behind Act (NCLB) definition of scientifically-based research, the “next best” practice for the conduct of scientifically-based research when lacking the ability to randomly assign participants to treatment conditions is to select a comparison group that is as similar as possible to the group receiving the BabyFACE services.

A comparison group of BIE schools who do not participate in the FACE program or the proposed BabyFACE program will be randomly selected from a sampling frame stratified by agency<sup>19</sup> and tribal affiliation to match the geographic and tribal representation of participating

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<sup>19</sup> BIE schools are organized within 23 agencies that are comprised of geographically proximate schools.

BIE schools (see Table 1 in Appendix H). The comparison group will be comprised of families with similarly-aged children as are represented in the participating sample, identified from birth lists maintained by the Indian Health Service. Similar sample sizes for participating and comparison groups will be selected, which is estimated at approximately 1,000 children.

### Research Design

The goals of the BabyFACE program—to narrow and ultimately eliminate the achievement gap of American Indian children at kindergarten entry and to sustain student achievement in the early elementary grades—will be evaluated in terms of the aligned program objectives that reflect the logic model (see Appendix H) for how the PAT model demonstrates its effects on school readiness. The extent to which the BabyFACE program ultimately impacts school readiness and 3<sup>rd</sup> grade achievement will be addressed through comprehensive data collection efforts designed to measure progress from birth to school age and—with the assistance of the BIE's newly developed longitudinal data reporting system (NASIS)—to assess sustained early elementary reading achievement through the third grade. A series of research questions guide the evaluation design:

1. To what extent does BabyFACE identify and remediate developmental and language delays prior to school entry?
2. Does participation in BabyFACE reduce the likelihood that children require and acquire Individualized Education Plans (IEPs) for special education services when they enter school?
3. What are the pre-kindergarten experiences of BabyFACE and comparison children entering kindergarten in terms of types of preschool attendance and how do those experiences relate to kindergarten readiness?

4. Does BabyFACE participation increase parents' knowledge of child development and increase their role as the first and most important teachers of their children?
5. Does BabyFACE participation increase access to books in the home?
6. Does BabyFACE participation increase the frequency of home-literacy activity?
7. Does BabyFACE participation directly increase children's school readiness, level the playing field for American Indian children, and reduce their achievement gap? Does participation directly/indirectly impact school readiness through greater frequency of preschool attendance and increased home literacy activity as hypothesized by the PAT logic model?
8. Does BabyFACE participation and school readiness predict school achievement in the early elementary years?

(2) Table 2 (See Appendix H) provides a matrix of program objectives and the measures/indicators that will be collected to assess progress towards achieving these objectives. These measures and indicators have been selected, developed and/or refined over the 20 years of FACE implementation at BIE schools to improve the validity and reliability of data collection efforts. The Ages and Stages Questionnaire (ASQ) is a commercially available instrument that has been used with American Indian children in the FACE program for more than a decade. The Protective Factors Survey is a product of the FRIENDS National Resource Center for Community-Based Child Abuse Prevention and the University of Kansas Institute for Educational Research and Public Service for the federally-funded network of Community Based Child Abuse Prevention programs. Both National Center staff and RTA staff have a long history of using the proposed instruments for program implementation data needs as well as process and outcome evaluation information.

(3) RTA has a long 30-year history of providing technical assistance and evaluation services to BIE schools. RTA is aware of the issues and needs that are presented by working with many tribes and schools and the special needs posed by the geographic distances to many of these schools. Because of the many well-documented needs required in the valid and reliable assessment of young children—and the special needs required to reduce the impact of different languages and cultures—RTA proposes to use parent educators at existing FACE sites that are geographically proximate to the comparison sites to assess the young children. Since at least 90% of parent educators at FACE sites are American Indian, they bring both the expertise required for valid assessment of children and their language and culture to this important data collection task.

#### Data Analysis

In addition to the selection of a comparison group, the definition of scientifically-based research “involves rigorous data analyses that are adequate to test the stated hypotheses and justify the general conclusions drawn.”<sup>20</sup> There are several strategies for establishing evidence for causality in non-experimental research based on data from a single research study. “The strongest non-experimental quantitative studies usually result from well-controlled prospective studies and from confirmatory structural equation (theoretical) models.” (Johnson and Christensen, 2000).<sup>21</sup>

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<sup>20</sup> No Child Left Behind Act. (2001). *Title IX, Part A, Section 9101 (37)*.

<sup>21</sup> Johnson, R.B. & Christensen, L.B. (2000). *Educational research: Quantitative and qualitative approaches*. Boston: Allyn and Bacon, p. 8.

The evaluation of the BabyFACE program will employ the following strategies for establishing evidence of causality and thereby contribute to the body of scientifically based research on the efficacy of the BabyFACE model:

1. Data will be collected that has an established temporal order (e.g., BabyFACE participation, preschool attendance, and home literacy precede kindergarten readiness).
2. The intervening mechanisms by which the BabyFACE program demonstrates its effects on kindergarten readiness and student achievement will be made explicit through a structural model.
3. Evidence of dose/response relationships will be measured and analyzed.
4. The use of one or more control techniques will be made explicit (e.g., controls for gender, mother's educational level). See Johnson, 2001.<sup>22</sup>

Analytical strategies will be employed that statistically adjust for initial differences between participating and non-participating children and families. The initial equivalence of participating and non-participating families will be assessed on a number of indicators that are important to outcomes at BIE schools, including:

- The educational level and age of the mother at the child's birth,
- The primary language spoken in the home,
- Single or dual parent households,
- Household receipt of public assistance or employment level, and
- Age(s) of pre-kindergarten child(ren).

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<sup>22</sup> Johnson, B. (2001). Toward a new classification of nonexperimental quantitative research.

*Educational Researcher*, 30 (2), 3-13.

Multiple models will be formulated from this comprehensive model and subjected to empirical tests, within the constraints of the appropriate numbers of variables and paths that can be specified in light of sample size. This level of comprehensiveness and rigor in design enables the evaluation to examine the extent to which type and intensity of participation in BabyFACE is related to kindergarten readiness and sustained effects on third grade achievement.

Finally, statistically significant predictors of school readiness will be utilized to construct a structural model of the direct and indirect effects of BabyFACE. This structural model represents the best approach to the intents of scientifically-based research to reveal causal or explanatory models of how a program such as BabyFACE produces impacts on important outcomes such as kindergarten readiness and sustained achievement in early elementary grades.

**(4) Implementation/Process Evaluation.** Through the two decades of FACE implementation at BIE schools, RTA—together with the National Center and BIE—have developed quality indicators of program implementation that provide standards for the assessment of FACE implementation quality. Data is obtained on an annual basis and an annual report of findings provides information for all sites and at the site level that describes implementation quality, implementation challenges, and implementation successes. RTA proposes to use the same procedures for the BabyFACE implementation evaluation.

RTA has conducted independent outside evaluations of the BIE's FACE program, which incorporates the PAT program as its home-based component, since its beginnings in 1990. This extensive experience demonstrates that RTA has the capacity and sufficient resources to effectively carry out the evaluation for the BabyFACE project at 24 BIE schools.

(5) RTA is an independent evaluator. Neither the program developers (the National Center and the Bureau) nor the project implementer (the 24 BIE schools) will evaluate the impact of the project.

### **E. Strategy and Capacity to Bring to Scale**

(1) The partners propose to serve 30 – 40 families with 36 – 48 children at each of the 24 BIE schools, for an annual minimum of 720 to a maximum of 960 families. Each family will have at least one age-eligible child. We hypothesize that 20% of the families will have more than 1 age-eligible child. So the number of children to be served annually is between 864 – 1,152. Over the course of the project the number of children served will be no fewer than 2,500. Since families can participate for several years depending on the age of their child when they enroll, the number served annually will be a duplicated count.

Experience with home-based FACE shows that 30-40 families per year is an appropriate and manageable number for two full time parent educators to reach and serve . Families will be recruited through a variety of methods that have shown to be effective for the FACE program. These include recruitment at school events, through the WIC office, at community centers, through the community health representatives, on the local Tribal radio stations and through Tribal government offices. Experience shows that after the first round of recruitment, word-of-mouth is the most effective recruitment tool. For evaluation purposes, recruitment efforts will be prioritized to families with children prenatal to 2 years initially.

The ongoing operation of the FACE program at BIE schools as noted above is the evidence that the partners can reach the proposed number of students. Last year the 45 FACE programs served 3,190 children and parents.

(2) The number of FACE sites was static at 22 locations from 1996 through 2001. An additional 10 sites were added in 2002 (32 sites), and another 7 sites were added in 2004 (39 sites). The number of FACE schools now stands at 45. This demonstrates the partners' ability to scale-up and replicate a project.

It should be noted that all the BIE schools participating in this BabyFACE project have submitted Letters of Intent to Join the Consortium stating that the school will participate and that the LOIs are signed by the school principal, an authorized school board member, and a BIE Education Line Officer. These letters are included in Appendix D.

There are 56 FTEs employed at the St. Louis-based National Center. Among the staff there are six employees with Master's degrees in education or social work and four employees with Doctorate degrees in child psychology or public policy. These include the key staff members involved with the management of this project, including the FACE Director (MSW), FACE Project Manager (M.Ed.), and the Senior Manager for Special Projects (PhD). See Appendix C for resumes for Kate McGilly, Marsha Gebhardt and Diane Givens.

The National Center houses a department of 4.0 FTEs to service the FACE project only. There are another 2 FTEs in other departments that have provided technical assistance to FACE programs in prior years. The FACE Director and Manager at the National Center have a combined 25 years experience with the FACE program and provide 39 on-site technical assistance visits each year.

The capacity of the National Center to effectively replicate programs can be demonstrated by the number of new PAT programs that are begun each year. For the fiscal year ended June 30, 2009, the National Center trained and certified 242 new PAT programs across the

country and in other countries. This was an increase over the previous two years (164 new programs in 2007 and 222 new programs in 2008).

Replication of BabyFACE will occur during the grant period.

The National Center, as the applicant, also has the capacity to raise the required match and has registered the project at the foundationregistry3 website.

(3) The National Center has developed Quality Assurance Guidelines that reflect best practices in ensuring model fidelity and program outcomes. New programs - which these BabyFACE programs will be - are expected to use these guidelines and the Parents as Teachers quality standards to provide a blueprint that will guide the program's implementation. Model fidelity and program quality provide the foundation for demonstrating outcomes for children and families. The requirements and guidelines described in this Quality Assurance Guidelines and the Quality Standards documents represent the programmatic elements that will guide the development of the BabyFACE programs.

Technical assistance will be provided at the onset of the programs and will continue to be provided throughout the project to ensure model fidelity and continuous quality improvement. This is consistent with the technical assistance provided to FACE programs which has helped them be successful for 20 years.

The fact that FACE has been successfully replicated with 21 different tribes speaks to the ability to successfully replicate within different cultures. Also, Parents as Teachers is currently being used with a wide variety of populations, including the indigenous people of New Zealand, in China, and with immigrant families in Germany. In the U. S. 12% of families in PAT programs speak Spanish as their primary language and 7% of families have at least one parent who is foreign-born. (2008-2009 PAT Annual Program Report)

Last year there were 242 new PAT programs certified by the National Center, indicating the capacity to replicate the service model. By contrast, historically less than 1% of programs are de-certified each year, also an indication of model fidelity and user satisfaction. Another indicator of end-user satisfaction is the family attrition rate. The attrition rate nationally is 17% which is very low for a program with voluntary participation.

(4) Estimate of the 5 year cost of the proposed project: including Federal Funds, private matching funds and partner in kind contributions: \$20,532,852.

Start up costs: To estimate the start up costs per student, we divided the total Year 1 costs, \$3,557,877, by the number of children being reached, a number between 864 and 1152 children. So the estimate of start up costs per student ranges from \$3,076 to \$4,101 per student.

Operating costs per student per year (including indirect costs): to estimate the operating costs per student per year, we again divide the annual costs by the number of children being reached per year, which is estimated to be between 36 and 48 children per site per year or 864-1,152 total per year.

Operating costs per student per year are therefore approximately (reflecting a 3% increase each year):

- Year 1 (services only for part of the year). Between \$3,076 and \$4,101 per student
- Year 2 (services all year): between \$3,533 and \$4,710 per student
- Year 3 (services all year): \$3,620 and \$4,827 per student
- Year 4 (services all year): between \$3,660 and \$4,879 per student
- Year 5 (service all year): between \$3,859 and \$5,145 per student

Estimates of costs to reach 100,000, 250,000 and 500,000 students:

Since the BabyFACE model is intended to be a multi-year intervention, with children and their families participating anywhere up to five years, it is difficult to accurately estimate this kind of cost.

The annual local site implementation cost to serve a child with bi-weekly to weekly contacts for an entire program year is approximately \$3,419 per child. This figure varies depending on frequency of visits (weekly vs. bi-weekly) and the number of families with more than one child being served simultaneously. This estimate is based on the Year 5 local program site operating costs, including indirect and in kind, assuming the question relates to what it would cost to continue to operate this program beyond the project period.

- To reach 100,000 children therefore would cost on average approximately \$341,900,000 per year
- To reach 250,000 children would cost \$854,750,000
- To reach 500,000 children would cost \$1,709,500,000.

(5) Project results, like the ones from this project, are disseminated to other early childhood partner organizations and through presentations at professional conferences. The result to be disseminated from this BabyFACE project is the effectiveness of parent education for resource impoverished, isolated, and rural populations.

The National Center communicates with its network of programs through the PATNews publication (circulation 18,200) and highlights significant projects at workshops during the annual conference. Information about initiatives and replication is through the network of PAT State Offices. There are PAT State Offices in 32 states and in four countries

The FACE project publishes the FACE to FACE newsletter four times each year. The circulation for the newsletter is 750 including BIE schools and tribal schools. The publication

highlights special projects, such as BabyFACE. In addition, there is an annual conference for FACE programs that includes other school personnel and ELO staff. Through conference workshops, outcomes from the BabyFACE project will be shared.

#### **F. Sustainability**

(1) Each of the participating BIE schools has submitted a “Letter of Intent to Join the Consortium” that is signed by the school principal, school board member, and BIE Education Line Office indicating their intent to participate in the BabyFACE project. In addition, the Bureau has organized two conference calls with the ELOs and schools to discuss the project and to explain the roles of the schools and the roles of the Bureau and the National Center.

The enthusiastic role of the Bureau in developing this application and project is the key to the future of BabyFACE after the end of the grant. It is believed that the outcomes for children and families will warrant continuing funding, either through the Bureau or other federal funding streams. Furthermore, the positive outcomes should encourage other BIE schools to allocate portions of their Title funds to continuing or implementing BabyFACE programs at their schools.

(2) As a part of the project, each school will be asked to develop a sustainability plan that will be submitted to the ELO and Bureau. FACE programs already submit such documents as part of their annual application. BabyFACE programs will follow the same model. The FACE documents include assurances and letters of commitment from the school principal, school board president, and ELO. Schools will also have the opportunity to allocate a portion of their Title I funds to support BabyFACE.

#### **G. Quality of the Management Plan and Personnel**

(1) See Appendix H for timeline with benchmarks and responsibilities.

The following is the narrative of the major pieces of the management plan.

## **Initial Implementation**

- Develop Start-up Packet to include: program description, guidelines, job descriptions, materials and equipment lists
- Mail Start-up Packet to principals/supervisors
- Conduct conference call with principals/supervisors of the awarded schools to discuss: hiring, job description/qualifications, space requirements, equipment, training dates
- Provide support to principals as they work to hire parent educators by January 2011 and begin to develop the office space and arrange for vehicles.

## **Training**

Provide training/professional development, schedule and content designed according to the successful plan used for the FACE programs over the past 20 years.

- Implementation Training (4 ½ days) – Parent educators attend all 5 days and supervisors attend 2 days. This is the Parents as Teachers Born to Learn® Training required for each parent educator, plus supervisor training.
- Follow-up Training (3 days) – 2 months after Implementation Training; parent educators only. This includes health, hearing, vision and developmental screening training as well as in-depth training on encouraging early literacy.

## **Service Delivery**

Beginning in the 2<sup>nd</sup> quarter of the first year, parent educators will start providing direct services to families, and will do so every quarter throughout the length of the grant. They will operate on the same schedule as the BIE school.

Services will include:

- Personal visits: weekly or bi-weekly visits lasting one hour, using a visit plan from the *Born to Learn*® curriculum. These will usually be conducted in the home and include any extended family members present. They will cover child development and parenting topics.
- Screening: Annual health, hearing and vision screenings will occur within the personal visit. Developmental screening will be done at least twice each program year, using the *Ages and Stages Questionnaire* tool.
- Referral and Resource Network: Referrals will be made as needed, using the Referral Process created by Parents as Teachers for use in FACE programs. Families will be connected with other resources as needed, resulting from the parent educators' knowledge of the community and their relationship with the family.
- Parent group meetings (Family Circles): Each month families will attend a Family Circle in the school. They will learn additional information about parenting and child development and will benefit from networking with other families.

### **Technical Assistance**

Provide technical assistance. This will be scheduled and the content designed according to the successful plan in use for FACE programs for the past 20 years.

- Each on-site technical assistance visit will be 2 days.
- Year one, each site will get one on-site visit before May, 2011.
- Year 2 and 3, each site will get two on-site visits between September and May.
- Year 4 and 5, each site will get one on-site visit. Sites needing extra help will get a second visit.

- Each on-site visit will address enhancing the quality of: personal visits, enrollment and participation by families, screening and referrals, parent group meetings, resource networking, recordkeeping, data collection and submission for evaluation and accountability.
- Each on-site visit will include an exit meeting and be followed by a thorough report, sent to the principal, parent educators and BIE.
- Monthly phone and email technical assistance will be provided to all sites every year.

### **Program Development/Quality Assurance**

- Provide Annual Professional Development
  - Parent educators attend professional development training in the fall of years 2 through 5. Necessary additional professional development and professional networking. Year 2 will include the 2-day *Born to Learn*® for Ages 3 to Kindergarten Entry. Year 3 will include the 2-day *Working with Families of Children With Special Needs*.
  - Webinar in-services will be conducted regionally in the 2<sup>nd</sup> quarter of years 2 through 5. These will address topics as indicated based on surveys of program needs, technical assistance, and data collection.
- Provide training for new parent educators as replacements are needed. There are many Parents as Teachers *Born to Learn*® trainings available throughout each year. If a parent educator begins after the initial Baby FACE trainings have been conducted, they will be expected to attend another Parents as Teachers training in order to become a certified parent educator.

- Assure coordination and accountability through close communication and collaboration between the Baby FACE Manager at the National Center and the Baby FACE oversight at BIE. This will occur regularly and as needed throughout the length of the grant.

The National Center has designed an appropriate and realistic budget and is confident that all project tasks can be completed on time and within budget. The National Center has 20 years' experience successfully managing programs of similar and larger scope.

(2) **Marsha Gebhardt**, who will serve as the project director, is the current FACE Project Director at the National Center. She has held this position since 1999. She plans, supervises and conducts annual trainings, technical assistance and program development for the home-based component of the FACE program at 45 Bureau schools. Ms. Gebhardt holds a Master's degree in Social Work from the University of Missouri.

**Diane Givens** will assist Ms. Gebhardt. She has been the FACE Technical Assistance Manager at the National Center since 2003. She is a family literacy expert and serves as a member of the Working Partners Literacy Group for the National Institute on Literacy. Along with a Master's degree in Education, Ms. Givens is also a certified parent educator.

**Kate McGilly, PhD**, Senior Manager for Special Projects at the National Center, will manage the financial and reporting aspects of the project. Dr. McGilly has held numerous positions with the National Center since 1996. She is responsible for monitoring and reporting on federal grants and contracts. These federal grants include two grants from the Department of Education, Fund for the Improvement of Education totaling \$419,768, a 5-year Responsible Fatherhood grant from the Department of Health and Human Services totaling \$1.25 million, and a contract with the Department of the Army for the *Heroes at Home* initiative totaling \$10

million. Dr. McGilly holds a doctorate in developmental psychology from Carnegie Mellon University. (All resumes are found in Appendix C.)

(3) Research & Training Associates, Inc. (RTA) is engaged in research, evaluation, and technical assistance, primarily in the areas of education, planning and needs assessment, policy analysis and development, criminal justice, and community partnerships. Areas of professional education and experience include early childhood, elementary, secondary, pre-service, and adult curriculum and instruction; literacy, family involvement, technology applications, school wide reform, welfare reform, research design, testing and measurement, and evaluation. RTA conducts evaluations for federal, state and local agencies, and philanthropic foundations.

RTA has extensive experience in the evaluation of early childhood programs and has conducted quasi-experimental studies of both the Parents as Teachers program and the BIE's Family and Child Education (FACE) programs.

RTA also provides a lengthy history of work with the BIA/BIE. Beginning in 1982 under a U.S. Department of Education subcontract to provide Title I technical assistance to six Midwestern states and BIA schools within that region, RTA worked primarily in areas of testing and evaluation with Bureau-funded schools. In 1986, RTA was selected by the BIA/OIEP and the U.S. Department of Education to provide services to all Bureau-funded schools nationwide for purposes of improving Title I programs. From 1989-1995, RTA staff provided assistance in areas of early childhood education, teaching and learning strategies, literacy and mathematics instruction, parental involvement, testing and assessment, and implementing school-wide programs to BIA schools nationwide. From 1995–2001, RTA conducted the evaluation of a U.S. Department of Education funded Technology Innovation Challenge Grant—Four Directions: An Indigenous Model. The Four Directions Technology Challenge Grant was part of the national

effort to bring the information superhighway to every classroom nationwide and to offer creative visions for using technology to help all students learn to challenging standards.

**Personnel:**

**Judy Pfannenstiel**, President and Senior Research Associate for RTA, will serve as the principal investigator for the proposed BabyFACE evaluation. Ms. Pfannenstiel brings more than 30 years of research and evaluation experience to this study. Areas of expertise for her doctoral work were educational research and multivariate statistics. She has been involved in the evaluation of the FACE program since its inception and conducted the first evaluation of the Parents as Teachers (PAT) program for the Ford Foundation. She has conducted numerous subsequent evaluations of PAT over the past 20 years. Research and evaluation design, multivariate statistical analysis and causal modeling, and report writing are her major responsibilities.

**Vicki Yarnell**, Senior Research Associate for RTA, will serve as the data manager. Ms. Yarnell has more than 30 years of experience in developing instruments, managing data, and writing reports for various research projects. She has been involved in the FACE program since its inception and manages the numerous longitudinal databases that have been developed over the 20 years of FACE implementation. She supervises staff who enter the data and insures that data integrity is maintained.