

---

# Sound Field Funding Proposal

---

**EXAMPLE**

This proposal example is being provided as an aid for writing your own funding proposal. It is offered with the generous help of Gail Gegg Rosenberg, M.S., CCC-A, FAAA, School Board of Sarasota County, Florida.



# PROGRAM DESCRIPTION

Title of Program Attend, Focus, and Listening (AFL) Program

Grant Amount Requested (Should agree with itemized budget on page 5) \$ 10,000

In 75 words or less, please provide a basic description of your proposed program.

The **Attend, Focus, and Listen (AFL) Program** will enable students and teachers to benefit from an enhanced listening environment. Sound field amplification will be provided for individual classrooms to help students attend and focus on instructional activities. An FM sound field system is a miniature public address system that slightly amplifies the teacher's voice while influencing a decrease in overall classroom noise levels. This project will increase opportunities for students to attend, focus, and listen more efficiently.

Grade Level  
(please circle applicable level)

Preschool                      Elementary                      Middle                      High

Type of Program  
(please choose no more than two)

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Reading and language development | <input checked="" type="checkbox"/> At-risk (All children at risk for listening difficulty |
| <input checked="" type="checkbox"/> Math                             | <input checked="" type="checkbox"/> in the classroom.)                                     |
| <input checked="" type="checkbox"/> Science                          | <input checked="" type="checkbox"/> Learning Disabled                                      |
| <input checked="" type="checkbox"/> Geography                        | <input checked="" type="checkbox"/> Development of Student Leadership & Self-esteem        |
| <input checked="" type="checkbox"/> History                          | <input checked="" type="checkbox"/> Parent Involvement                                     |
| <input checked="" type="checkbox"/> Business                         | <input checked="" type="checkbox"/> Teacher Effectiveness                                  |
| <input checked="" type="checkbox"/> Computers                        | <input checked="" type="checkbox"/> Other _____  |

## GRANT DESCRIPTION

Briefly respond to the following as it applies to this grant: a) how this grant will support school improvement efforts; b) cost centers served by the grant; c) number and types of staff; d) number of students impacted by grant; e) purpose of grant; f) program activities; g) other information you feel the Board should consider in approving this grant.

- a) The **Attend, Focus, and Listen (AFL) Project** grant will:
- support the enhancement of communication with parents (School Improvement Plan)
  - increase students' time on task (Campaign for Excellence)
- b) The cost center served by this grant would be Ashton Elementary School (0301).
- c) No staff needs are impacted by this grant. District level staff will provide support to the AFL project which will involve a minimum of 12 classroom teachers.
- d) The number of students impacted by the grant is 264 in grades 1 through 3. However, it is important to note that potentially more than 1300 students would benefit from the listening enhancement equipment over a conservative five year lifespan of the system. (FM sound field systems typically should last 7-10 years with routine annual maintenance.)
- e) The purpose of the **Attend, Focus, and Listen (AFL) Program** grant is to enable students and teachers to benefit from an enhanced listening environment. FM sound field amplification will be provided for individual classrooms to help students attend and focus on instructional activities. An FM sound field system is a miniature public address system that slightly amplifies the teacher's voice while influencing a decrease in overall classroom noise levels. This project will increase opportunities for students to attend, focus, and listen more efficiently. An FM sound field system helps all of the students some of the time and some of the students all of the time (Ross, 1995)
- f) Program activities will include the following.
- FM sound field amplification systems will be provided in 12 open pod classrooms to enhance the listening environment.
  - Improvement in attending, focusing and listening behaviors will be documented for a minimum of five students per classroom.
  - Teachers will be offered the opportunity to avoid vocal fatigue, a common problem among teachers, by using the wireless amplification system.
  - Provide inservice training for teachers on listening strategies, use of the FM system, and classroom modifications to enhance the listening environment.
  - Show the effect of the FM system in improving speech intelligibility in classrooms.
  - Communicate to teachers, parents, and administrators the opportunity to evaluate the benefits of FM sound field amplification used in the AFL program.
  - Other teachers, parents, administrators, and interested school community members will be encouraged to observe the use of the sound field system and the obvious effects it has on students' attending, focusing, and listening skills.
  - This model program could serve as an impetus for financial support from community business partners and foundations to support expansion of the AFL project.
  - Students, teachers, parents, and administrators will collaborate to produce a video to show the benefits of sound field amplification used in the AFL program. This video may then be shared with interested community members.
- g) Board members may recall the highly successful *IMPROVING CLASSROOM ACOUSTICS (ICA)* project for which this district served as the fiscal and managing agent (1993-1995). The **Attend, Focus, and Listen (AFL) Program** is an expansion of the ICA design and will use materials developed through the ICA project. In addition, the ICA project manager would serve as program director for the AFL Program.

1) Provide an expanded description of the proposed program and how it will work.

The **Attend, Focus, and Listen (AFL) Program** will enable students and teachers to benefit from an enhanced listening environment. Classrooms in the 1990s are typically noisier than the recommended noise level standard for classrooms, and this interferes with students' ability to effectively listen in the learning environment. In open pod classrooms, in particular, listening opportunities can become compromised due to various noise barriers which interfere with attending, focusing and listening.

FM sound field amplification will be provided in classrooms to improve the classroom listening environment. An FM sound field system is a miniature public address system that allows the teacher's voice to be amplified to a level slightly above the classroom noise level. This system brings the teacher's voice to all students at approximately the same intensity level and provides them with an enhanced opportunity to attend, focus, and listen. Sound field amplification is also a method of controlling one very important variable in the classroom environment — the intensity of the teacher's voice.

The AFL program would provide FM sound field amplification for a minimum of 12 classrooms. Priority of placement would be given to teachers with a history of vocal problems such as allergy-induced laryngitis and those interested in using the equipment. A speaker system would be installed in the classrooms and teachers would use a wireless microphone. The sound field system brings the teacher's voice closer to the students and provides a crisper and clearer voice quality. Thus, students are able to attend, focus, and listen with greater ease and efficiency. This is extremely important because students spend 45% to 60% of their school day involved in the listening process (Butler, 1975). An FM sound field system helps all of the students some of the time and some of the students all of the time (Ross, 1995). This would also include students at risk for listening and learning, such as students with attention deficit hyperactivity disorder (AD/HD), learning problems, temporary or permanent hearing loss, and non-native English language. The AFL program should increase students' time on task as their opportunities to attend, focus, and listen are improved.

2) Outline the objectives of your program, and describe why you think the program will benefit students.

AFL Program objectives include the following:

- a. to provide FM sound field amplification systems in open pod classrooms to enhance the listening environment.
- b. to document improvement in attending, focusing and listening behaviors in a minimum of five students per classroom
- c. to provide teachers the opportunity to avoid vocal fatigue which is a common problem with teachers
- d. to provide inservice training for teachers on listening strategies, use of the FM system, and classroom modifications to enhance the listening environment.
- e. to show the effect of the FM system in decreasing the noise level in classrooms relative to the teacher's voice.

The benefits of FM sound field amplification have been well documented. Refer to attached information on the *IMPROVING CLASSROOM ACOUSTICS* project for collaborative data on the benefits of this listening enhancement technology. (See pgs. 6-8.) Students have commented that the sound field system helps them to pay attention and hear their teachers more clearly, even when the teacher is not facing the students. Teachers have remarked that the system has helped "save" their voices. Parents and administrators have likewise identified remarkable benefits as a result of using the sound field system.

3. Provide a general time line of program events, including beginning and ending dates.

May 1997	Solicit and select interested teachers.
June-July	Conduct equipment bidding process and purchase equipment.
July-mid August	Prepare teacher inservice materials and project evaluation forms.
Late August	Conduct noise measurements. Install FM sound field systems.
September	Provide inservice for participating teachers by program director. Meet with parents and share information on the AFL project. Begin using sound field system.
September-May	Ongoing inservice and support provided to teachers by program director.
January	Mid-year observations of targeted students. Mid-year project evaluation.
March-April	AFL Program video production.
May	Evaluation of AFL Program by students, parents, teachers, administrators. Year-end observations of targeted students.
June 1998	Year-end project evaluation.

4. How will the program build collaboration among teacher, parents, administrators, and/or the community?

Collaboration activities will include the following.

- Communicate with teachers, parents, and administrators about the benefits of FM sound field amplification.
- Provide student, parents, teachers, and administrators the opportunity to evaluate the benefits of FM sound field amplification used in the AFL program.
- Other teachers, parents, administrators, and interested school community members will be encouraged to observe the use of the sound field system and the obvious effects it has on students' attending, focusing, and listening skills.
- This model program could serve as an impetus for financial support from community business partners and foundations to support expansion of the AFL project.
- Students, teachers, parents, and administrators will collaborate to produce a video to show the benefits of sound field amplification used in the AFL program. This video may then be shared with interested community members.

5. How many students and what grade levels will participate in this program?

Students in grades 1 through 3 (in selected classes) will participate in the AFL project. These grade levels were selected due to the critical need to develop attending, focusing, and listening skills at the primary level. This population was also selected due to the high incidence of fluctuant hearing loss caused by middle ear infections and allergies. With an average 22 students per class, a minimum of 264 students (12 classes) would participate in the AFL program during the funding period. However, it is important to note that potentially more than 1300 students would benefit from the listening enhancement equipment over a conservative five-year lifespan of the systems. (FM sound field systems typically should last 7-10 years with routine annual maintenance.)

6. Provide an itemized budget for the program. (Grant requests that do not include an itemized, detailed budget will not be considered. Programs will be evaluated based on pertinent budget requirements and will be carefully analyzed.)

EQUIPMENT

12 FM Sound field Amplification Systems @ \$800.00 each* (Narrowband systems will be specified in order to be compatible with FM systems used by students with hearing loss attending this school)	\$9,600.00
Accessory equipment (e.g., auxiliary input cords, adapters, etc.) and installation materials (e.g., cable clips)	80.00

SUPPORT

Teacher support (books, materials)	170.00
Conference fees (for teacher/program director to present on the AFL program at a conference/convention)	150.00

TOTAL	\$10,000.00
-------	-------------

**IN-KIND CONTRIBUTION FROM SCHOOL DISTRICT** (approximate costs)

• Coordinator/Audiologist (5% of salary) serving as AFL Program Director	3,100.00
• Production of inservice training materials and AFL project forms	200.00
• In addition, sound level meters, <i>IMPROVING CLASSROOM ACOUSTICS</i> project inservice training materials and support materials, monitoring equipment, etc. are available to support the AFL program.	3,000.00
• ESE Liaison (speech-language pathologist) on staff at the school site for support	undetermined
• District ITV staff available to assist with production of AFL Program video	undetermined

\* approximate cost per system

7. Every program director will be required to provide an evaluation of the program at midterm in January and at the end of the school year. Please describe your plan to evaluate the program to determine its effectiveness.

The evaluation plan will include summaries of activities and finding of observations and other elements which support the objectives and activities of the AFL Project. Evaluation reports will include this type of documentation.

#### Midterm Evaluation Plan – January 1998

The midterm evaluation will include the following types of information.

- A summary of inservice activities provided for teachers, interested support staff, interested parents, and administrators. Information from the inservice evaluation will also be included to support the effectiveness of these activities.
- A summary of various noise level measurements, such as:
  - classroom noise levels with and without use of the FM systems to show the effect of the system on improving classroom speech intelligibility;
  - teacher’s vocal intensity in unamplified and amplified conditions to demonstrate how the system allows the teacher to achieve an optimum amplified loudness level and at the same time reduce his/her actual intensity level and vocal effort.
- A summary of information from the *Listening Environment Profile* completed for each classroom participating in the AFL project.
- A summary of midterm vs pre-amplification data for targeted students to show improvements in attending, focusing, and listening behaviors when using FM sound field amplification.
- A summary of comments from teachers, students, parents, and school community members regarding the benefits of sound field amplification with regard to improvement in attending, focusing, and listening skills.

#### Year-End Evaluation Plan – June 1998

The year-end evaluation will include the following types of information.

- A summary of additional inservice activities provided for teachers, interested support staff, interested parents, and administrators. Information from the inservice evaluation will also be included to support the effectiveness of these activities.
- A summary of an additional noise level measurements.
- A summary of pre-amplification vs midterm vs year-end data for targeted students to show improvement in attending, focusing, and listening behaviors when using FM sound field amplification.
- A summary of evaluations completed by students, teachers, parents, and administrators regarding attending, focusing, and listening skills and use of the FM sound field amplification system. (Evaluation forms developed for the *IMPROVING CLASSROOM ACOUSTICS* project will be used for this portion of the evaluation plan.)
- A summary of additional comments from teachers, students, parents, administrators, and school community members regarding the benefits of sound field amplification with regard to improvement in attending, focusing, and listening skills by students at risk for listening and learning (e.g., students with AD/HD, diagnosed learning problems, ESOL, temporary or permanent hearing loss, etc.).
- A summary of information from participating teachers regarding benefits the sound field system provided with regard to vocal fatigue
- Information obtained from the project, in particular evaluation data, will be used in developing the script for an AFL Program video production. Teachers, students, parents, administrators, and interested community members will be invited to participate in the making of the video.

# SUPPORT MATERIAL

## IMPROVING CLASSROOM ACOUSTICS

### Enhancing Listening and Learning Environments with FM Sound field Amplification

#### INTRODUCTION

The better children can hear, the more they are able to learn (Ross, 1995). Listening and learning opportunities for young children are often compromised when they are subjected to less than optimum acoustics in their educational environment. This is particularly disturbing because young children spend 45% to 60% of their school day involved in the listening process (Butler, 1975). Among the most devastating acoustical barriers are internal and external classroom noise, reverberation, speaker-listener distance, and poor acoustical treatments in the classroom.

For maximum learning to occur in the educational environment, the teacher's voice must be highly intelligible to all children (Crandell & Smaldino, 1995). This is vitally important for young learners with less sophisticated language systems. For pediatric listeners to achieve adult-like speech recognition, the acoustic signal must be approximately 10 dB louder than the background noise level (Berg, 1993). Speech recognition in noise and reverberation reaches adult-like performance at 13 to 15 years of age (Fior, 1972; Elliott, 1979, 1982; Neuman & Hochberg, 1983; Crandell & Bess, 1987). Over the past 15 years research has shown that FM sound field amplification is an effective way to produce significant change in students' listening behaviors and academic achievement (Sarff, 1981; Ray, Sarff & Glassford, 1984; Crandell & Bess, 1987; Berg, Bateman & Viehweg, 1989; Gillman & Danzer, 1989; Blair, Myrup & Viehweg, 1989; Jones, Berg & Viehweg, 1989; Flexer, 1989, 1992; Osborn, VonderEmbse & Graves, 1989; Allen & Patton, 1990; Benafield, 1990; Flexer, Millin & Brown, 1990; Neuss, Blair & Viehweg, 1991; Schermer, 1991; Ray, 1992; Crandell, 1993; Flexer, Richards & Buie, 1993; Zabel & Tabor, 1993).

An FM sound field system is a miniature public address system that allows the teacher's voice to be amplified approximately 5 to 10 dB above the classroom noise level. This brings the teacher's voice to all students at approximately the same intensity level. In addition, FM sound field classroom amplification is a low cost means to improve the listening and learning environment for students and teachers. It is a method of controlling one very important variable in the classroom environment the intensity of the teacher's voice.

The FM sound field system helps all of the students some of the time and some of the students all of the time (Ross, 1995). The benefits of FM sound field amplification are numerous. However, the most notable positive effects for students are: improvement in academic achievement; improvement in speech recognition skills; improvement in attending and learning behaviors; increased seating options for students with hearing loss; improvement in listening and learning environments for "at risk" learners (e.g., severely language impaired, developmentally delayed, ESOL, minimally hearing impaired, etc.); and increased self esteem. Benefits have also been identified for teachers and they include: reduced vocal strain and voice fatigue; increased ease of teaching; increased versatility of instructional techniques; and increased teacher mobility.

The IMPROVING CLASSROOM ACOUSTICS (ICA) project has been an exciting undertaking that has distinguished the State of Florida as a leader in the implementation of a successful FM sound field amplification project in general education classrooms. The 1993-1995 ICA project was funded by the Florida Department of Education, Division of Public Schools, Bureau of Student Services and Exceptional Education, through federal assistance under the Individuals with Disabilities Education Act (IDEA), Part B, as a special project. The ICA project was comprised of a pilot project and two continuation projects.

#### PURPOSE

The IMPROVING CLASSROOM ACOUSTICS (ICA) special project (1993-1995) was designed to determine if students' listening and learning behaviors and skills improved as a result of an enhanced acoustical environment when using FM sound field classroom amplification.

#### PROJECT SUMMARY

Participants. The project involved 2054 students in 94 kindergarten, first, and second grade general education classrooms in 33 elementary schools in 23 Florida school districts. FM sound field amplification was provided in 64 experimental (amplified) classrooms and the remaining 30 classrooms served as control (unamplified) classes. Observation data on 1850 students was analyzed to determine if the FM sound field classroom amplification produced significant changes in students' listening and learning behaviors and skills. Hearing screenings were performed on 1252 students involved in the 1994 ICA continuation project. Otologic history information was provided by parents of 1450 students using an adaptation of the Ear and Hearing History from (Anderson, 1991).

FM Sound field Classroom Amplification. The Easy Listener Free Field System™ by Phonic Ear, a narrowband FM sound field system with a four-speaker arrangement, was purchased for 64 general education classrooms in the 23 districts that participated in the project. An additional 27 systems were purchased for use in the six districts involved in the 1994 project.

Teacher Inservice Training. More than 100 general education classroom teachers and project support persons participated in inservice training provided by audiologists at 10 district sites. Materials developed for inservice training included the ICA Inservice Training Manual and accompanying ICA Inservice Training Transparency Master Manual. These manuals have been published by the Florida Department of Education and are available through the Clearinghouse/Information Center.

Sound Level Measurements. Sound level measurements were taken during the 1993-94 ICA pilot project and the 1994 ICA continuation project. Classroom sound level measurements (dBA and dBC scales) were taken using the Quest 2400 sound level meter according to protocol identified in the ICA Classroom Description Worksheet. Unoccupied measurements were taken before and after normal school hours with the HVAC systems in operation because this is a component of typical classroom noise in Florida's schools. Occupied measurements were taken during regular classroom activities. Teachers' vocal intensity was measured on the dBA scale at a distance of six inches from the mouth. Unamplified measurements were taken for all teachers (N = 60) and amplified measurements for all experimental teachers (N = 30). These measurements were used to determine the amount of amplified difference and unamplified measurements were used to set the intensity level of the amplifier.

Student Observations. The Listening and Learning Observation (LLO) was developed for use in the project and the Evaluation of Classroom Listening Behaviors (ECLB) (VanDyke, 1985) was adapted for use as an additional student observation instrument. The LLO includes four sections: Student Data, Listening Behaviors, Academic/Pre-Academic Behaviors, and Academic/Pre-Academic Skills. The ECLB is a 10-item observation focused on discrete listening tasks.

Project Evaluation. FM sound field amplification was evaluated by students, teachers, parents, and school administrators. Information from the evaluations is reflected in the following Summary of Results. Evaluations were completed by 1221 students, 55 general education classroom teachers, 630 parents, and 27 school administrators.

#### SUMMARY OF RESULTS

- Students in early grade general education amplified classrooms demonstrated significantly greater change in listening and learning behaviors and skills and at a faster rate than their grade-alike peers in unamplified classrooms.
- Younger students showed the greatest improvement in listening and learning behaviors and skills.
- Unoccupied classroom noise levels (M = 47.48 dBA) exceeded the recommended acoustical standard of 35 dBA for 96.67% of classrooms in the 1994 ICA continuation project (N = 60).
- Unoccupied classroom noise levels and acoustical treatments in elementary classrooms have not changed over the past decade.
- FM sound field amplification provided teachers with an average increase of +6.05 dBA to +8.67 dBA in vocal intensity (M = +6.94 dBA).
- Students gave a positive evaluation for the use of FM sound field amplification (N = 1221). More than 95% of the students agreed that the FM sound field system made it easier for them to hear their teacher, helped them listen better, and helped them to hear when their teacher was writing on the board. At least 94% of students agreed that their teacher's voice was loud and clear when using the FM system and at least 92% agreed that they wanted to use the FM system in their class again the following year.
- Classroom teachers unanimously identified a decrease in vocal strain as the foremost benefit from using FM sound field amplification (N = 55).
- Classroom teachers used the FM sound field system an average of 4.18 hours per day (N = 55).
- Teachers were in 100% agreement that the FM system enabled their voice to reach all students no matter where they were seated (N = 55). Teachers also were in 100% agreement that they enjoyed using the FM sound field system in their classrooms.
- Teachers were in at least 92% agreement that they experienced less emotional strain and fatigue during teaching and the need to repeat directions and information decreased when using the FM sound field system. They were also in at least 92% agreement that the FM system was easy to use, they felt comfortable using it, and would like to use it in their classroom again the following year (N = 55).
- Teachers were in at least 96% agreement that students' behaviors related to attentiveness, listening, and comprehension seemed to improve when using the FM system (N = 55).
- At least 85% of parents agreed that their child would like to continue using the FM sound field system in their classroom the following year and at least 83% agreed that their child enjoyed using the system (N = 630).
- Parents were in at least 46% agreement that their child's grades improved when using the FM system and at least 44% agreed that their child's behavior improved at school when the FM system was in use (N = 630).
- School administrators were in 100% agreement that teachers enjoyed using the FM sound field systems (N = 27).
- There was at least 92% agreement by school administrators that the FM sound field system enhanced class instruction and management (N = 27).

- School administrators were in at least 53% agreement that there was a decrease in the number of behavior referrals from amplified classes (N = 27).
- Correlations are strong (.788 to .837) for the Listening and Learning Observation (LLO) and the Evaluation of Classroom Listening Behaviors (ECLB) observation instruments developed for the project, suggesting that they are sensitive tools for observing students' listening and learning behaviors.
- FM sound field amplification is a cost effective instructional delivery equipment based on a \$0.14 daily cost per person for a typical class (1 teacher and 25 students). The cost would decrease to a \$0.03 per person daily rate by adding a conservative five year longevity factor.

#### COMMENTS ABOUT FM SOUND FIELD CLASSROOM AMPLIFICATION

##### Student comments.

- The microphone helps me hear better because my teacher has a soft voice and you can't always hear her.
- When my teacher turns off the speakers we cannot hear that good.
- It helps a lot of people who sit in the back and can't hardly hear without the microphone.
- Our teacher lets us read with it and that's good for shy people.
- When other kids tell stories to the class we can all hear real good.
- The speakers make us all pay attention better than we used to last year.
- I hope we get to have it in our classroom next year to hear better somemore.

##### Teacher comments.

- Students could hear and understand better.
- The system encourages shy children to speak and share information in front of the class; it builds confidence in all students when they use the microphone.
- It helps students follow directions and enhances listening skills, especially low ability students.
- More seating options are available to students with hearing loss.
- It decreases teacher's voice problems, reduces vocal strain, produces a more relaxed feeling when teaching, and teachers feel less tired at the end of the day.
- It improves student attention; the system assists in getting and holding student's attention.
- It improves rate of learning phonics because students listen and understand better.
- It is an effective tool for chalkboard writing, giving tests, and playing tapes in class.
- Everyone benefits by using the FM system in the classroom. Every class should have one.

##### Parent comments.

- It improves the student's ability to hear the teacher more easily and clearly.
- It improves the student's ability to understand the teacher more easily.
- It makes learning easier.
- It increases self-confidence when students use the microphone in front of the class.
- It improves the attention and focus of students.
- It improves the student's ability to hear the teacher from any location in the room, when writing on the chalkboard, when speaking softly, and above classroom noise.
- It improves student's ability to concentrate and ignore classroom noise.
- It improves student's behavior.
- It is easier on the teacher when using the FM system.
- Students enjoy using the FM sound field classroom amplification system.
- Every classroom should have one.

##### Administrator comments.

- It saves the teacher's voice and they are less fatigued at the end of the day.
- Students could hear the teacher equally as well from any point in the classroom and able to hear the teacher clearly at all times.
- Students seemed to listen better.
- Students seemed to focus more quickly and consistently.
- Students were more in tune with the teacher.
- Students like using the amplification and felt important.
- Class time was saved because instructions did not have to be repeated.



# frontrow™

for active learning

a division of **Phonic Ear Inc.**

Website: [www.gofrontrow.com](http://www.gofrontrow.com)

U.S.A./International  
Sales and Service

Phonic Ear, Inc.  
3880 Cypress Drive  
Petaluma, CA 94954-7600  
U.S.A.

800-227-0735  
707-769-1110  
707-769-9624 FAX

Canada  
Sales and Service

Phonic Ear, Ltd.  
10-7475 Kimbel Street  
Mississauga, Ontario  
L5S 1E7 Canada

800-263-8700  
905-677-3231  
905-677-7760 FAX