

SCIENCE FOR PERSONS WITH DISABILITIES
GOOD NEWSLETTER

NUMBER 47 SPRING 1992

PRESIDENT'S MESSAGE

As in the past few years, the primary forum for communication this year will be at our meeting on Thursday, during the NSTA's Boston National Convention. Although there is not much on the surface we have been active in preparing a more involved agenda for 1992-93.

A proposal for a pre-convention symposium on Science for Persons with Disabilities has been submitted to NSF. Hopefully, we will be able to engage in some definite planning for the symposium during our meeting in Boston. The proposed dates are March 30-31, 1993 in Kansas City, MO. This precedes the annual NSTA Conference which is scheduled for April 1-4, 1993. Details of the proposal will be shared in Boston.

We are in the process of preparing our first issue of the Journal of the Science Association for Persons with Disabilities. I have received a manuscript from Janet Davies and have been in conversation with Pat DeWalt who has a manuscript in progress. We would like to have 6-8 articles before publishing the journal. Right now I'm hopeful of a target date for publication in October. This will be a discussion item during our association meeting.

In preparing for the meeting in Boston it may be helpful to review the minutes of our meeting in Houston and the minutes of the AETS Task Force on Science for Persons with Disabilities, which also met in Houston.

Our active membership is relatively small and the meeting in Boston will provide our members with an opportunity to become actively involved in service to the association. Our agenda is an important one. With the new initiatives precipitated by America 2000, Project 2061, and the numerous other task forces, it is important that attention be directed to equity for persons with disabilities. I look forward to seeing you in Boston. If you are unable to attend, please drop a note or call if you have a specific interest or concern.

Sincerely,

Greg Stefanich, President

MEETINGS OF INTEREST:

A Thank You goes to Diana Wiess and Rae Ann Wuestman for scheduling meetings and activities for our association during the 1992 NSTA National Convention in Boston. Meetings of special interest include:

- The NSTA Special Education Advisory Board Meeting on Thursday, March 26, from 8:30 - 11:30 AM in the Orleans Room of the Marriot Hotel

- The Meeting of the Science Association for Persons with Disabilities on Thursday, March 26, from 1:00 - 3:00 PM in the Jefferson Room of the Sheraton Boston Hotel

- The AETS Science for the Handicapped Committee Meeting on Thursday, March 26, from 3:00 - 4:00 PM in the Jefferson Room of the Sheraton Boston Hotel

- The NSTA / Science For Persons with Disabilities Luncheon on Friday, March 27, from 12 Noon to 2:00 PM in the Kent Room of the Sheraton Boston Hotel

MAKING A DIFFERENCE

by Greg Stefanich
University of Northern Iowa

The population of practicing scientists today reflects a serious underrepresentation of individuals who have had physical disabilities before or during adolescence. Studies indicate that frequently this situation is not due to a lack of ability or interest on the part of the students, but rather to inadequate science preparation in both elementary and secondary schools.

The person with disabilities has an additional compounding problem -- that of his/her limiting condition. In the past, services for disabled students have been primarily in the area of remediation resulting from their limiting conditions, not in the development of their talents and gifts. According to Eisenberg (1981), special educators believed that a disabled, gifted child would be in the regular classroom. It appears that many students with disabilities are recognized only by their limitations, rather than by any gifts they may possess.

Redden (1978) investigated nation wide science opportunities for physically disabled youth. Results indicated that disabled students receive little science instruction, and what they do receive is not academically adequate to allow them to pursue science education or instruction in science-related fields as possible careers. The absence of appropriate science education for the disabled is further evidenced by the dearth of disabled persons within scientific fields.

Active involvement through leadership and commitment by organizations such as the Science for Persons with Disabilities is needed throughout the educational program. Hutto, et al. (1991) emphasizes positive steps are needed to overcome stereotypes due to disability, gender and ethnicity particularly in science, given the much lower participation rates of persons with disabilities, women, Hispanics, African Americans and Native Americans in advanced science courses and scientific careers. Stereotypes are conveyed in both subtle and overt ways - through the ways a teacher calls on a student or responds to an answer, due to unconscious assumptions about what interests a student or what the student is capable of doing or not capable of doing, through illustrations in textbooks, through the discussion

of individuals who have made unique contributions to the field of science, and the types and extent of interactions students have beyond academics, both within and outside of class time.

Weld (1990) states that lab designers give a great deal of thought to the rich rewards to be gleaned from hands-on science at the high school level. Unfortunately, consideration is seldom accorded the physically disabled, and consequently, society loses all potential benefits it might have gained from their participation in lab work. For this reason, many students with physical disabilities often shy away from science.

The enactment of the Americans With Disabilities Act in the summer of 1990 opened many doors for career-minded disabled persons. We must take full advantage of this legislation by making sure that disabled students are given the best education possible.

The active collaboration of a team of educators, each lending his or her special expertise, is critical if we are to effectively serve the student with disabilities in the science classroom. When one looks at today's secondary schools with their departmentalization, administrative hierarchies, and large physical plants, it is easy to assume that someone else is responsible. Many of the special adaptations are subject-specific, requiring cooperation of the classroom teacher and other specialists. Teachers serving students with disabilities must assume an active role in bringing all of the parties together.

All students, including disabled ones, need to learn (from their teachers) that, in the sciences, they can earn professional recognition, be paid good salaries, and provide service to others. They also need to understand the intrinsic reward, such as enjoying problems that have baffled others. There are two ways teachers can help promote these ideas: (a) by mentioning relevant scientific developments and current scientists when teaching science topics, and (b) by being an exemplar mentor themselves (Weisgerger, 1990).

A failure to respond is a severe loss to both society and the individual. Many disabled individuals find themselves trapped in occupations which are totally inappropriate for their talents and abilities. We have a human and constitutional responsibility to all of our citizens.

As a result of attention that P.L. 94-142 and Senate Bill 504 gave to the needs of the disabled, NSTA held a conference on science education for the disabled in 1978 in conjunction with its annual meeting. That conference served as a substantive stimulus toward increased concern and awareness of science educators for the needs of persons with disabilities in the science classroom and resulted in the establishment of our organization, Science Association for Persons with Disabilities (SAPD). SAPD has operated as an affiliated group of the NSTA since 1978. Fourteen years later there is a need for a new national effort to update science educators to insure that the rights and needs of persons with disabilities are effectively being responded to in our science classrooms.

REFERENCES

- Eisenberg, S. (1981). Handicapped children can be gifted too, say educators. Education of the Handicapped.
- Hutto, N., Hadfield, O. D., Ries, B. R., Votaw, T., Boethel, M., & Hoover, W. A. (1990). Using partnerships to strengthen elementary science education: A guide for rural administrators. Las Cruces, NM: New Mexico State University Center for Rural Education.
- Redden, M. R. (1978). What is the state of the art? In H. Hoffman (Ed.). Science education for handicapped students. Washington, DC: National Science Teachers Association.
- Weisgerber, R. A. (1990). Encouraging scientific talent. The Science Teacher, 57(8), 38-39.
- Weld, J. D. (1990). Making science accessible. The Science Teacher, 57(8), 34-38.
- Whitmore, J. (1981). Gifted children with handicapping conditions: A new frontier. Exceptional Children, 48, 106-114.

PROPOSED PROJECT GOALS AND OBJECTIVES

for an

Symposium on Science for Persons with Disabilities

by

Greg Stefanich and George Davis

The purpose of this conference is to educate science teacher educators as well as members of the special education community about effective resources and strategies in science education for persons with disabilities. Specific goals are:

1. To provide an assessment of the current state of conditions concerning science for persons with disabilities.
2. To make recommendations for federal, state, and local agencies, institutions and organizations for science education in careers in science and related fields for disabled students.
3. To provide resources to science teacher educators to enable them to prepare future K-12 science teachers who would provide effective science education for mainstreamed, disabled students.
4. To accentuate the need to provide support services and assistance to all students within the regular classroom.
5. To insure the curricula are adapted, modified and expanded to meet the needs of all students by varying instructional practices and objectives within any given lesson.
6. To increase awareness of technological advances and contributions which can enhance and contribute to the learning and participation of disabled students.
7. To ultimately affect the quality of science education by identifying a pool of science educators who can provide ongoing national leadership in science education for persons with disabilities.

TENTATIVE AGENDA

Science Association for Persons with Disabilities

**Thursday, March 26, 1992 1 -3 PM
Jefferson Room, Sheraton Boston Hotel**

1. Approval of the Minutes of the March 28, 1991 meeting in Houston, Texas
2. Report of the Executive Secretary
3. Report on Newsletters; SAPD Bibliography
4. Discussion of Resolution Statement (see draft in this newsletter)
5. Report on NSF Proposal for a Symposium in Kansas city on March 30-31, 1993. (See proposal goals and objectives in this newsletter)
6. Committees and Activities in anticipation of receiving approval for the 1993 Symposium
7. Discussion of the Journal of the Science Association for Persons with Disabilities
8. Proposed future activities of the Association
9. Other business

RESOLUTION STATEMENT

(Draft)

WHEREAS students with ^{disabling conditions} handicapping conditions benefit from "education in the least restrictive school environment" and WHEREAS as much as possible, these students need inclusion and involvement in all facets of school life, and WHEREAS there is a growing push to segregate special needs students in ways that do not uphold the intent of Public Law 94-142,

**THEREFORE, BE IN RESOLVED THAT
THE ASSOCIATION OF SCIENCE FOR PERSONS
WITH DISABILITIES URGE ALL EDUCATORS TO
HIGHLIGHT INTEGRATION AND INCLUSION
WITH REGARDS TO SPECIAL NEEDS STUDENTS**

RATIONALE

The present state of practice of "least restrictive environment," especially for the mildly disabled, has become synonymous with partially segregated instruction through the use of resource room programs. This is often compounded when non-disabled teachers, administrators, and counselors make general assumptions about what disabled students can and cannot do. Immediate attention must be channeled towards the integration and inclusion of disabled children within the school setting, particularly within the regular classroom. Noteworthy goals for science educators are:

1. to insure that instructional adaptations are made to allow for students with physical disabilities to participate ~~fully in~~ laboratory and outdoor learning opportunities. ^{as much as possible in classroom}
2. to insure that new technology is utilized to aid students with ~~physical~~ disabilities to participate in all facets of the instructional program by serving as resource personnel and advocates for these students.
3. to serve as advocates for students with special needs to insure they are not advised to take classes which minimize the need for adaptation or special modification of the instructional setting.
4. to provide opportunities for all students to socialize informally in and out of the classroom.
5. to create a caring, supporting atmosphere that tolerates and welcomes a wide range of student diversity.
6. to foster cooperative learning activities rather than competitive or individual tasks.
7. to provide opportunities for peer interaction, multi-age grouping, and group cohesiveness.