



(photo by Steve Savage)

Karl Schaffer and Erik Stern

Contact: Karl Schaffer (831) 335-1861; Erik Stern (801) 626-6615

E-mail: schafferkarl@fhda.edu or estern@weber.edu

Web site: mathdance.org

PHYSICAL PROBLEM SOLVING: MATH DANCE

Workshop Leaders: Karl Schaffer and Erik Stern

For Teachers of Grades 3-8

3 hours of instruction time

**Maximum number of workshop participants with both workshop leaders present: 50
with only one workshop leader present: 25**

In this workshop, teachers learn how to engage students in physical problem solving using creative movement that develops their understanding of mathematical concepts. Participants explore ways to help students learn about the mathematical concepts of patterns, combinations, symmetry, and polyhedral (3-D) geometry and learn ways to guide students' work and help them notate their movement phrases.

Note: A copy of their book, *MathDance with Dr. Schaffer and Mr. Stern*, must be provided for each participant at an additional cost.

MATH + DANCE: EXPLORING SEQUENCE AND COMBINATIONS

Workshop Leaders: Karl Schaffer and Erik Stern

For Teachers of Grades 5-8

3 hours of instruction time

**Maximum number of workshop participants with both workshop leaders present: 50
with only one workshop leader present: 25**

In this workshop, teachers actively discover how sequences, permutations, and combinations are fundamental principles in both mathematics and dance. Participants explore accessible ways to help students develop greater understanding of the mathematical concepts of pattern, probability, and combinations by using sequencing to create choreographic studies based on everyday movements.

KARL SCHAFFER AND ERIK STERN ALSO OFFER THE FOLLOWING SERVICES* FOR:

Students

- Performances/Lecture-Demonstrations
- Workshops in Preparation for Performance/Exhibit Attendance
- Other Workshops
- Residencies
- Written Guides to Performances/Exhibits
- Development of Online Resources

Teachers

- In-Depth Courses
- Demonstration Teaching
- Workshops in Preparation for Performance/Exhibit Attendance
- Written Guides to Performances/Exhibits

School Administrators

- Speeches

*Not all services have been designed or presented by the Kennedy Center.

The Dr. Schaffer and Mr. Stern Dance Ensemble, co-founded by KARL SCHAFFER AND ERIK STERN, began in Santa Cruz in 1987 and has been touring nationally since 1992. Their dances have explored ideas ranging from Shakespeare to the extinction of the dinosaurs, from basketball to science. Their first show exploring mathematics and dance, "Dr. Schaffer and Mr. Stern: Two Guys Dancing About Math," has been performed five hundred times throughout North America in concert halls, schools, and at dance and mathematics conferences. In 2001, they self-published, along with Scott Kim, *MathDance with Dr. Schaffer and Mr. Stern*, a guidebook for teachers on how to combine mathematics and dance in the classroom. The ensemble has enjoyed the support of the National Endowment for the Arts, The California Arts Council, and The Cultural Council of Santa Cruz County.

KARL SCHAFFER has a Ph.D. in mathematics from the University of California at Santa Cruz, and began dancing more than twenty years ago with Southern Danceworks in Birmingham, Alabama. He currently teaches mathematics at De Anza College in Cupertino, California, and teaches dance on tour and as an independent artist. He was an Artist in Residence at The Henry J. Mello Center for the Performing Arts in 2004-2005.

ERIK STERN has a BA in biology from UC Santa Cruz and an MFA in dance from Cal Arts. He performed with Tandy Beal and Company for ten years and teaches at Weber State University in Ogden, Utah. His duet, "Table of Content," appeared at The John F. Kennedy Center for the Performing Arts as part of the American College Dance Festival National Meeting in May 2002.