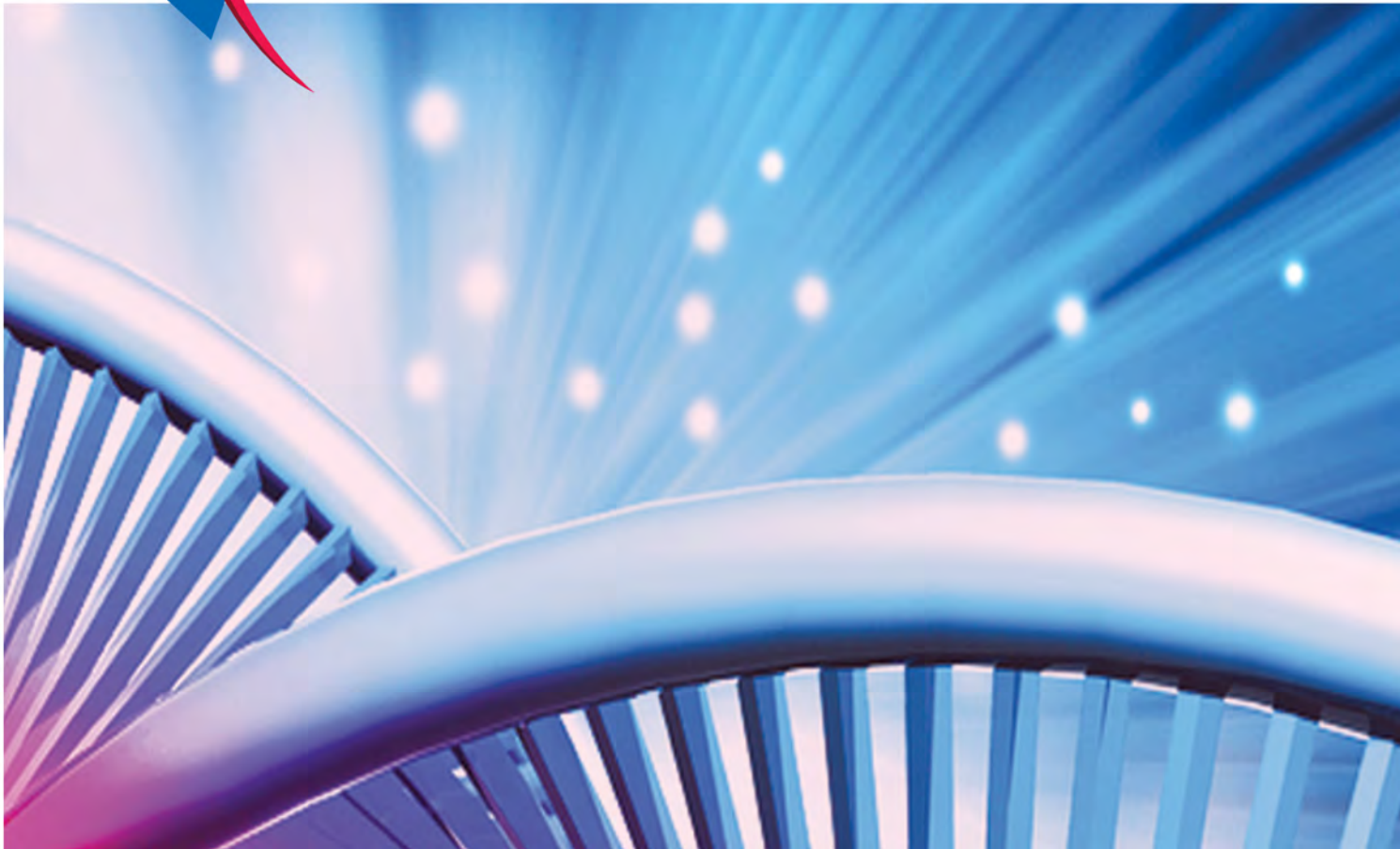
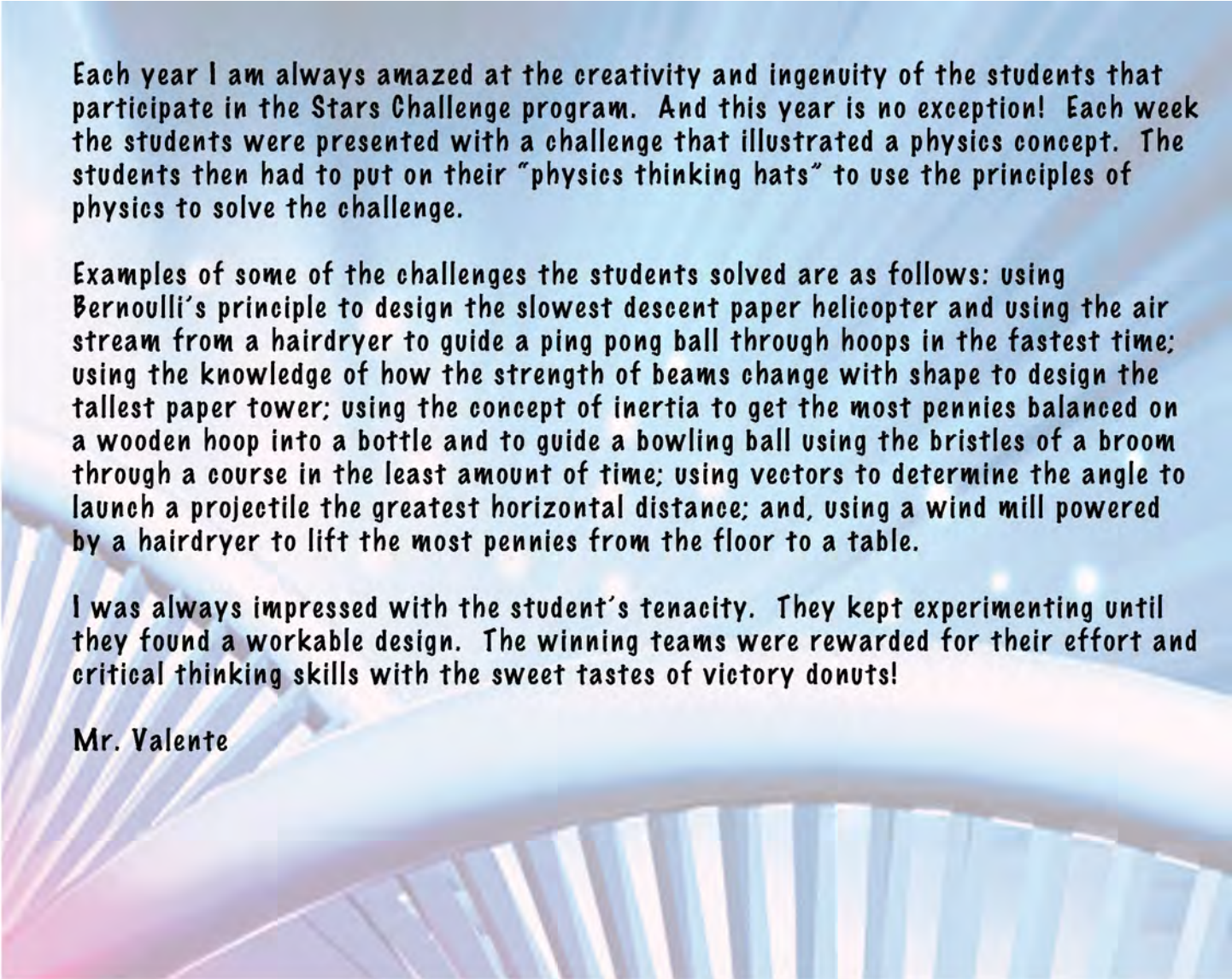




the stars  
challenge

Olympics of the Mind  
Fall 2011





Each year I am always amazed at the creativity and ingenuity of the students that participate in the Stars Challenge program. And this year is no exception! Each week the students were presented with a challenge that illustrated a physics concept. The students then had to put on their “physics thinking hats” to use the principles of physics to solve the challenge.

Examples of some of the challenges the students solved are as follows: using Bernoulli’s principle to design the slowest descent paper helicopter and using the air stream from a hairdryer to guide a ping pong ball through hoops in the fastest time; using the knowledge of how the strength of beams change with shape to design the tallest paper tower; using the concept of inertia to get the most pennies balanced on a wooden hoop into a bottle and to guide a bowling ball using the bristles of a broom through a course in the least amount of time; using vectors to determine the angle to launch a projectile the greatest horizontal distance; and, using a wind mill powered by a hairdryer to lift the most pennies from the floor to a table.

I was always impressed with the student’s tenacity. They kept experimenting until they found a workable design. The winning teams were rewarded for their effort and critical thinking skills with the sweet tastes of victory donuts!

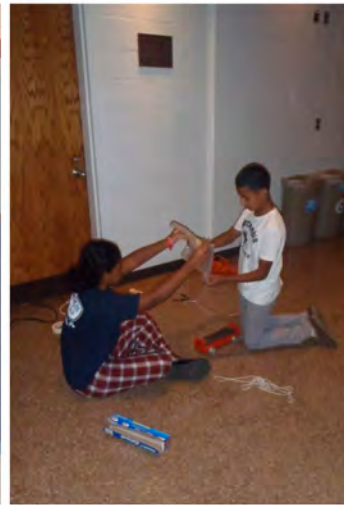
Mr. Valente



The students use Bernoulli's principle to design the slowest descent paper helicopter. Kyle is testing two different designs while Ryan thinks he has a winner!



The class stops for a group picture after using Bernoulli's principal to guide a ping-pong ball through hoops using a hair dryer.



Christian and Orli discuss their winning strategy while Mr. Valente helps George with his design.



Connor and Brandon confer with Mr. Valente to trouble shoot their design. While Wil and Ryan are very pleased with their design. Do they taste victory donuts?



The class uses different strategies to guide a ping-pong ball through hoops using a hairdryer.





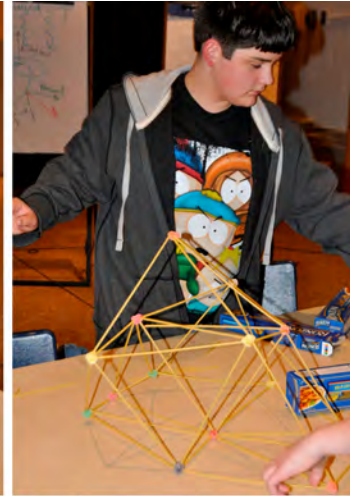


Sandra tests the strength of beams made from solid material and made from hollow material. Which one is stronger? Ask Sandra: she knows the physics!





Orli and Andrew have designed the winning paper tower. Wait! Is that King Kong climbing it?? Not to worry; it's really Christian.



Jeevan is deep in thought planning his strategy to design the tallest spaghetti gumdrop tower, while Andrew and Kyle discuss their design with Mr. Valente.



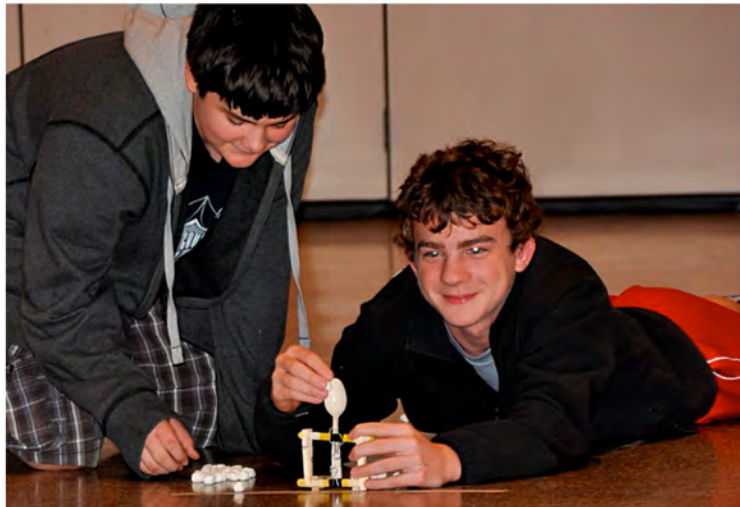
Andrew gives Wil a big burst of Kinetic energy for a thrilling ride on the “student air puck” while Connor enjoys his ride on the “student air puck”.



Kyle concentrates before trying to get the pennies to fall into the bottle. George gets ready to knock the hoop from underneath the pennies. While Andrew and Sandra plan their method.



Kyle pulls the dollar from between the bottles without toppling them. Great job! Wil's getting ready for his turn. Jeevan has his rotational-inertia balancing act under control.



Brandon and Kyle and Connor and George load their marshmallow catapult. Ryan looks to see if he has the winning shot. While Dan Zucker, the class teaching assistance, makes the target for the marshmallow catapult shoot.











Olympics of the Mind

The Stars Challenge at Monmouth University