

Congratulations to L.I. Westinghouse Finalists, But . . .

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Congratulations to Long Island's eleven Westinghouse Science Talent Search finalists. Congratulations should also be extended to their high school classmates who participated in the special Westinghouse research classes, shared ideas, and helped in the design of projects; the teachers who showed students how to do research, understand statistics, work in an organized and disciplined fashion, and write up and present their findings; science professionals at Brookhaven, Cold Spring Harbor, SUNY Stony Brook and other laboratories and universities who provided time, equipment, supplies and direction; and parents, school boards, businesses and communities who financed research classes, summer institutes, and the research projects, even when it meant that other school priorities and educational programs in other school districts were neglected. These eleven students did not become Westinghouse finalists on their own.

There is no question that the forty Westinghouse finalists and the hundreds of semi-finalists on Long Island and around the country demonstrated a high level of scientific accomplishment for high school students. But I have many questions about the educational validity of school districts investing tens of thousands of dollars in a competitive science program that involves a small fraction of their student bodies in a contest for a limited number of college scholarships (ten). Isolating these students in Westinghouse classes, or West Prep as they call it in the Three Village School District, increases tracking within schools, contributes to the manic race by families to get their children accepted at a few elite universities, and reinforces the educational inequalities and racial and class divisions between Long Island school districts. At the same time it distorts basic ideas about the advancement of scientific knowledge.

Despite Westinghouse rules requiring that projects be submitted by individual students, major modern scientific achievements like space flight, the development of computers, and battles against disease, are not the work of lone geniuses. They are the product of collective and collaborative activity that cannot be done in isolation. They require team work, huge laboratories, and considerable financial investment.

An award winning project by a student at Ward Melville High School to use recycled ash as an ingredient in road construction is a good example of the team work required by modern science. While one student was cited for the project and honored as a Westinghouse finalist, the research was actually done by a team of three students working with a staff member from SUNY Stony Brook. It involved the repaving of the school yard by the Brookhaven Town Highway Department at a cost of \$125,000 and was supported by a local business group, Action Long Island, which helped raise the money.

Because of its cost, scientific research requires decisions on community and school priorities. At Ward Melville High School there is competition just to get into the Westinghouse program. Applications from over one hundred students who would like to do scientific research are rejected annually. The Westinghouse program is so expensive that last year the district considered canceling it.

In addition, because the Westinghouse program is designed as a competition for college scholarships, it does not necessarily promote the best in science education. It encourages intensive research on narrow technical topics and the selection of projects that are potential winners, rather than helping students broaden their understanding of the world so they can draw connections between different scientific and academic disciplines.

The seven school districts that produced the eleven finalists this year are part of Long Island's academic and financial elite. They serve the children of professionals and the wealthy. Their average spending per student per annum is more than twenty percent higher than the Long Island average. The property wealth per student in these districts is one-third higher than the average in Nassau and more than double the average for Suffolk. Their Westinghouse results are not a general statement about science education on Long Island. They only prove that affluent communities can marshal resources to support children from professional families to achieve well on competitive specialized tests.

Long Island needs to find ways to insure that all students in all of our school districts develop scientific literacy and the ability to make reasoned scientific decisions. The Westinghouse competition is not the best way to teach science or to organize an educational system in a democratic and technologically sophisticated society like ours.

To: Marty Hollander, Newsday From: Alan Singer, Hofstra (**changes in bold**)

Congratulations to Long Island's eleven Westinghouse Science Talent Search finalists. **Congratulations should also be extended to their teachers and classmates who participated in the special Westinghouse research classes;** science professionals at Brookhaven, Cold Spring Harbor, SUNY Stony Brook and other laboratories and universities who provided time, equipment, supplies and direction; and parents, school boards, businesses and communities who financed research classes, summer institutes, and the research projects, even when it meant that other school priorities and educational programs in other school districts were neglected. These eleven students did not become Westinghouse finalists on their own.

There is no question that the forty Westinghouse finalists and the hundreds of semi-finalists on Long Island and around the country demonstrated a high level of scientific accomplishment for high school students. But I have many questions about the educational validity of school districts investing tens of thousands of dollars in a competitive science program that involves a small fraction of their student bodies in a contest for a limited number of college scholarships (ten). Isolating these students in Westinghouse classes, or West Prep as they call it in the Three Village School District, increases tracking within schools, contributes to the manic race by families to get their children accepted at a few elite universities, and reinforces the educational inequalities and racial and class divisions between Long Island school districts. At the same time it distorts basic ideas about the advancement of scientific knowledge.

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An award winning project at Ward Melville High School to use recycled ash as an ingredient in road construction is a good example of the contradiction between the Westinghouse rules and the team work required by modern science. While one student was cited for the project and honored as a Westinghouse finalist, the research was actually done by a team of three students working with a staff member from SUNY Stony Brook. It involved the repaving of the school yard by the Brookhaven Town Highway Department at a cost of \$125,000 and was supported by a local business group, Action Long Island, which helped raise the money.

Because of its cost, scientific research requires decisions on community and school priorities. At Ward Melville High School a teacher is assigned to work exclusively with the Westinghouse program and students compete to be admitted. Applications from over one hundred students who would like to do scientific research are rejected annually. The Westinghouse program is so expensive that last year the district considered canceling it. **Other school districts have established different priorities. At a recent community meeting, Baldwin school officials explained that the focus in their science education program is on increasing the participation of underrepresented students, especially young women.**

In addition, because the Westinghouse program is designed as a competition for college scholarships, it does not necessarily promote the best in science education. It encourages intensive research on narrow technical topics and the selection of projects that are potential winners, rather than helping students broaden their understanding of the world so they can draw connections between different scientific and academic disciplines.

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The Westinghouse competition is not the best way to teach science or to organize an educational system in a democratic and technologically sophisticated society like ours. Long Island must ensure that all students in all of our school districts develop scientific literacy and the ability to make reasoned scientific decisions. We should democratize and detrack science education within schools, experiment with regional high school science magnet programs that can help desegregate education, and focus on group science projects like those sponsored by the Long Island Science and Engineering Fair.