Investigation: Is the Westinghouse Science Competition Fair?

David Zimmerman's newsletter on science, media, policy and health

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Exclusive:

Surreptitious Mental Screen Faces Teenage Science Stars

High school seniors who become finalists in the current Westinghouse Science Talent Search (STS) — the most prestigious American science contest for teenagers — can anticipate an unannounced screening by a mental health professional.

Last year’s Westinghouse winners were subjected to the secretive screening. Several of them told PROBE that they did not consent to such an exam in advance, and did not give their permission, verbally or in writing, for the findings to be shared among the 10 finalist judges last March.

The contest operators deny that contestants are screened in this way. This is “absurd,” a Westinghouse spokesman told PROBE. “We simply don’t do that!” (See box, p. 2).

Each year, the 40 Westinghouse semi-finalists are brought to Washington, D.C. for five days, for interviews with the judges — one of whom is a mental health professional — and for a round of other, highly publicized events that culminate in the announcement of the 10 winners; they receive college scholarships worth from $40,000 for first place, down to $10,000 for tenth.

“The rumor was that there was somebody who was going to evaluate our mental health,” last winter’s 10th place winner, Whitney Paige Bowe, of Lawrence, N.Y., said recently by phone from Yale, where she is a freshman. But she said she did not know who was to make these judgments.

“I heard we were being analyzed,” she said.

Judge Is a Psychiatrist

The one mental health professional on the judges’ panel was Harvard psychiatrist and psychologist Stuart T. Hauser, M.D., Ph.D. His “professional field” is given in the Westinghouse Washington program as psychologist, albeit his primary degree is the medical one (M.D.), which he received from Yale. He later earned a Ph.D. in psychology from Harvard.

Westinghouse identifies him elsewhere, in a historical account of the award, as an associate professor of psychiatry whose “area of expertise” is psychiatry. He is now a full professor of psychiatry, and chief of psychiatry at the Judge Baker Children’s Center, a Boston clinical facility for kids and adolescents that is affiliated with Harvard.

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‘Westinghouse’ Is More Than Science

The deadline is 6:00 p.m., Monday, November 24.

This is when high school seniors’ entries in this year’s Westinghouse Science Talent Search (STS) — “the Westinghouse” as it is familiarly known — must be in the hands of a little-known nonprofit company called Science Service, in Washington, D.C. Science Service has run the much-publicized contest for Westinghouse since the award’s inception in 1941.

The contest is funded by the Westinghouse Foundation, a beneficiary of the conglomerate Westinghouse Electrical Corporation, in Pittsburgh. Westinghouse is a major media company: It recently bought CBS-TV. The annual student scientist contest is a publicity vehicle for Westinghouse; a company P.R. man, G. Edward Pendray, was its co-founder.

The Westinghouse has been occasionally subjected to criticism. Recently, for example, high school officials in Virginia complained to the Washington Post (Aug. 20), that its focus — on individual kids’ achievements — is inappropriate now that most scientific advances are cooperative, multi-person projects. Nevertheless, the Westinghouse, with $205,000 in prizes, continues to attract 1,500 to 2,000 entries each year. Last year there were 1,652.

Student applicants have worked over the summer, with help from their science teachers, parents, and other advisors, to meet the Nov. 24 deadline. Besides their written reports on the experiments they contrived, they also must fill out a nine-page entry form, with supplements, that is continued on page 4
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Contestant Bowe and her colleagues say, however, that they were led to believe that Hauser’s role on the judges’ panel was to evaluate student projects in psychology and the social sciences—subjects that might be alien to chemists, physicists and other hard-science judges.

“We just thought that was his field, that he was there to cover social science,” Bowe declared. She added that she “didn’t think” Hauser was evaluating her psyche during their brief interview in a judging room. She noted, however, that his was the only judging room that was provided with the finalists’ long application forms, which includes information on family members.

Introduction Recalled

Bowe’s recollection was seconded by the young woman who finished just ahead of her last March, Rose J. Payyapilli, of Brooklyn, N.Y., who now attends New York University.

“They don’t tell you that you’re being interviewed by a mental health professional, not at all!” Payyapilli said. Psychiatrist-psychologist Hauser, she said, “introduced himself as a psychologist.”

“It’s very mysterious,” Payyapilli added. “They don’t want to reveal what they do.”

The teenage contestants’ parents or legal guardians may not be aware of the mental screening.

A Miami physician, Elliot Levy, M.D., the father of last spring’s fifth-place winner, responded to a PROBE question on the screening by saying, “It’s the first that I’ve heard about it.”

His daughter, Emily, now at Brown University, also said she had been unaware of the psychological screening. She said her interview with Hauser went very well.

Dr. Levy declined to answer the specific question of whether he had been asked for permission to examine his daughter in this way. Levy explained that he did not want to say anything “contrary” to Westinghouse, because of the excellent help it provides to aspiring scientists.

The psychological screening has, however, been a part of the judging process from its inception in 1941, according to Tom K. Phares, a retired Westinghouse publicist, in a recent phone interview from his home in Pittsburgh. Phares spent his entire 42-year career as a Westinghouse P.R. man, and worked with the STS for nearly 20 years, he said. He wrote the official history of the contest, Seeking and Finding: A 50-Year History of the Westinghouse Science Talent Search (Pittsburgh: Westinghouse, 1990). He told PROBE that the contestants have been screened psychologically “since the beginning, I believe.”

The first chairman of the board of judges was an Ohio State University psychologist, Harold A. Edgerton, Ph.D., according to Phares’ book. Psychiatrist-psychologist Hauser has been a judge for almost two decades.

The Westinghouse Awards have been run since their inception by a Washington, D.C., non-profit organization called Science Service. Why the two sponsors probe their contestants’ psyches is, however, unclear. Science Service’s longtime president, Edward G. Sherburne, Jr., now retired, who ran the contest for 25 years, told PROBE in a brief phone interview from Washington:

“They don’t want to give the scholarship to somebody who couldn’t use it.”

He declined to go further into detail. “Science Service,” he said, “normally doesn’t talk about the judging very much.”

The long-time chief judge, Princeton astrophysicist J. Richard Gott, III, Ph.D., was little more forthcoming. Asked what role the psychological assessment plays in the judges’ final decision, he replied, “Oh, it’s sort of minimal.”

“I would say,” he continued, that it’s “sort of unimportant to me.”

He then went on to say:

“It’s a misconception to think there is some kind of psychological screening. It doesn’t matter to me what kind of psychological profile there is—I’m interested in finding someone who’s going to be a good scientist.”

Science Service denies the statements by Phares, Sherburne and Gott. “There is no psychological program here,” its publicity director, Ann Korando said earlier this month by phone. PROBE had phoned the service’s president, chemist Thomas Bennett, Ph.D., for comment.

Judge Gott referred further questions on the psychological screening on the contestants that might be alien to chemists, physicists and other hard-science judges.

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Psychiatrist’s Contest Role Raises Questions

Using a concealed mental health screening in choosing a contest winner — as Westinghouse and Science Service appear to do — could pose ethical problems, experts say.

Issues include whether professional skills should be used without informed consent of the interviewees — contestants — and whether information gained in this way can be used for non-professional purposes or passed on to others for non-therapeutic purposes without the individual’s informed and written consent.

The spirit, if not the letter, of this concern appears in the American Psychiatric Association’s Guidelines in Confidentiality, which says:

“Psychiatrists are often requested to evaluate individuals on behalf of third parties . . . . Care must be taken before proceeding . . . to inform the individual of the need to make a report to a third party and of the limitations this places on confidentiality . . . .”

The American Psychological Association says, similarly, and more strongly:

Psychologists do not disclose in their writings, lectures, or other public media, confidential, personally identifiable information concerning their patients, individual or organizational clients, students, research participants, or other recipients of their services that they obtained during the course of their work, unless the person or organization has consented in writing or unless there is other ethical or legal authorization for doing so.

This standard is “potentially applicable to all psychologists,” the psychologists add.

Harvard’s Hauser is not a member of either of the two national mental health organizations, their spokesmen say. Whether his work for Westinghouse is ethical under the psychologists’ standards is unclear. The head of their ethics committee, Norma Simon, Ph.D., of Pelham Manor, N.Y., told PROBE that if there is an ethical problem, it relates more to the issue of informed consent than to that of confidentiality.

“In a general sense,” she said in a telephone interview, “if the contestants have not been informed properly about what is taking place there,” it would be a matter of concern. “It would be unfortunate if some member of the profession colluded in giving misinformation” about the purpose of an interview that was “a deliberate lie,” she added.

The immediate past president of the American Psychiatric Association, Harold Eist, M.D., of Bethesda, Md., described any use of such information, minus informed consent, as a breach of ethics and confidentiality. He said by phone:

If the facts as is alleged, that the professional individual is obtaining information from people that might be used in ways that they judge are not in their best interest, without so advising them in advance, he [or she] is breaching both ethics and confidentiality (which is also a breach of ethics). In the event that he is in effect using his professional expertise and knowledge without fully informing the individual under examination, they are breaching professional ethics. If he is using the information in ways the individual being examined do not know, which could be harmful to those individuals in their lives, without so informing them, he is breaching professional ethics.

Psychiatrist Eist is an ardent advocate of confidentiality as the bedrock of trust between patient and doctor. He said that he helped draft a Washington, D.C. civil statute, The Mental Health Information Law, that forbids mental health professionals from releasing “mental health information” obtained professionally from a “client” to anyone else, unless specifically authorized to do so. A similar statute is being encoded in Massachusetts, he noted.

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program to Hauser, at Harvard, whom he repeatedly referred to as “Mr. Hauser,” rather than “Dr. Hauser,” which is the standard honorific for a medical doctor (M.D.).

Hauser, who had discussed some other facets of the Westinghouse judging in a phone conversation last June, did not return phone calls last month, seeking his further comment on the mental health screening.

‘Significance’ Queried

Some clues, however, were provided by engineering student Ana Maria Navarro, then 17, of Minnetonka, Minn., a finalist last year. She said that Hauser and a mathematician conducted joint judging interviews with the students. One question was:

“What is the significance of significance?”

Conundrums of this kind are used in psychiatric interviews to elicit irrational, even semi-mystical responses that might be indicative of schizophrenia — a severe mental illness that often is manifested in the late teen years, when people leave home and must adjust to the real world.

“A schizophrenic person would have trouble answering that question,” New York University psychiatrist Lawrence Tancredi, M.D., said in a telephone interview. The question “could fluster them considerably,” he said, and might prompt “outrageous responses.”

This would be in line with ex-Science Service head Sherburne’s comment that Science Service and Westinghouse don’t want to give the $40,000 scholarship to someone who can’t use it.

Disclosure

Psychiatrist Stuart Hauser, M.D., is a friend of members of our extended family. We have met him socially on several occasions in Boston.

— D.R.Z
Westinghouse Is Poor Predictor of Nobel Glory

The buzz about the Westinghouse Science Talent Search, or "the Westinghouse" as it is commonly called, is prizes, particularly its own $40,000 top prize in college scholarships, and the Nobel Prize, which figures high in Westinghouse's promotional lore. This focus is depicted on the cover drawing of the Westinghouse entry form: a silver medal hanging — tantalizingly — from a blue ribbon (inset, below.)

"They're looking for somebody who can grow up and win a Nobel Prize — someone with analytic ability," explains Whitney Bowe, of Lawrence, New York. She was 18 when she travelled to Washington last spring as one of this year's 40 finalists; Bowe won a $10,000 scholarship.

The Westinghouse judging process, however, has turned out to be extremely poor in picking future Nobelists.

No first-place winner of the annual student award has ever won a Nobel Prize, Science Service P.R. woman, Ann Korando acknowledges. Worse, the contest has fallen off badly, through its 56 year history, in the judges' ability to pick future Nobel laureates among its top ten winners.

Results Given

The Westinghouse judging process, continued on page 8

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almost as complex as IRS Form 1040.

The winners will be announced, with much hype, at the National Academy of Science, on Sunday, March 8, next year.

What the public, and indeed the contestants themselves may not fully understand is that it takes a lot more than an excellent science project to win. Some of the criteria, PROBE has learned, have more to do with the students' personal and social traits, subjectively judged, than they do with a kid's skill at bench science.

Elite Are Sought

One reason for this is that the Westinghouse is more than a contest of skills. It is also a normative process, designed to identify, establish, and encourage an elite group of young scientists/science spokespersons. As the college dean at New York University recently wrote to alumni, in a fund-raising letter: "[W]e have admitted another magnificent freshman class . . . . [It] includes five of the nation's 40 Westinghouse finalists . . . ."

One traditional part of the STS annual Washington awards ritual is to pose the 40 finalists for a photo with the President of the United States. They also pose for an official picture on the steps of the U.S. Capitol. The Westinghouse thus is a model for young American science aspirants, indicating what they can aspire to, and how they should behave to attain their goals.

Purpose Declared

"The [Westinghouse] was designed to encourage talented high school students looking toward a career in science or engineering. [It] provides an incentive and an arena to complete a research project and have it recognized by a national jury of highly-regarded professional scientists. [It] seeks to make the American public aware of the impact that quality science, mathematics, and engineering education has on our future and the future of our nation."

Subjective Impressions Sway Judges

The public's perception of Westinghouse Science Talent Search winners is that their science projects earn them their awards.

"'Electrochemical Paintbrush' Wins Westinghouse Science Competition," the N.Y. Times headlined its story last March when Adam Ezra Cohen, of Manhattan, won top honors. "For Child's Play, a $40,000 Prize," chirped the Boston Globe.

Students' science project write-ups and assorted supplemental paperwork in fact serve primarily to identify the 400 quarter-finalists from among the 1600 to 1700 entrants each year, according to contest sources. They serve, too, to help judges and administrators narrow the field to the 40 semi-finalists who are brought to Washington each year for the final judging. But reducing 40 to 10, and then ranking the top 10 may have at least as much to do with the judges' intellectual and character analyses of the candidates as it does with the kids' science projects.

Science Projects Disregarded

"Once you get to Washington, they essentially disregard the [science] paper," last year's tenth place winner, Whitney Bowe, now at Yale, explained recently by phone. Ana Maria Navarro, woman submitted an experiment in which she blinded newly hatched sparrows for study purposes. Blinding is a standard study method for migration and orientation experiments, and probably for neuroanatomical and developmental studies, too.

The no-vertebrates restriction obviously disqualifies a large sector of biologic science. The ban is well-known to science students and their teachers, but not to the public. Press releases for the STS do not reveal it. But one former Westinghouse finalist, biologist Joshua Wallman, Ph.D., of the City University of New York, brought it to public attention last March in a letter to the New York Times.

Criteria Not Fixed

"There is no fixed set of criteria. Each thing is looked at on a case by case basis — each person."

He added:

"The science project counts a lot, but you can't put a number on it. How well the person does in the interview is also important...The individual weight put on these things depends on the person."

Gott compared the Westinghouse winners to Olympic athletes: They are role models. They show the public what kind of young people should be aided and encouraged — and what they will achieve, for society, if they succeed.

Live Animal Studies Are Strictly Banned

"No projects involving live vertebrate experimentation will be eligible." — Westinghouse STS Rules

The Animal Rights Movement — which is profoundly anti-scientific — has seen a key piece of its agenda adopted by the country's premier scientific competition for young adults: No experiments on live vertebrate animals.

This restriction was put into place in 1982, according to the Washington Post (Aug. 20). Protests by biologists and their organizations failed to get it rescinded, even though it cut entries to 824 the following year (down from a high of 4,477 in 1960.)

Westinghouse introduced the ban because of pressure from antivivisectionists and animal rights organizations, Science Service spokeswoman Ann Korando told PROBE earlier this month. Westinghouse public relations man D. John Armstrong added that the sponsors are weighing a change in this rule, but no final decision has been made.

The ban was placed, Westinghouse old-timers say, after a young a semi-finalist last spring who now is at Boston University, recalled in a phone interview that contestants were told by letter that when they arrived in Washington, "You probably will not be asked about your paper."

The chief judge, astrophysicist J. Richard Gott, of Princeton, confirmed in a long phone interview that the judges look carefully at the science papers, but also rely heavily on interview information and impressions to determine whether candidates possess the persistence, analytic ability, and creativity to become good scientists. Some of these judgments are intellectual, he said, and some are characterologic.

Offer to Students

High school students can get a copy of this issue by sending a stamped self-addressed envelope and $1 to PROBE, P.O.B. 1321, NYC 10112-1321. Others, send $5.

November 1997
Hedges Tarnish ‘Westinghouse’

The way to tell if a kid can play baseball is to watch him (or her) play ball — not watch the kid run the 100-yard dash. By the same token, Westinghouse chief judge Richard Gott told PROBE, the way to assess a kid’s scientific ability — and encourage it — is to watch the kid do science, not have him read about it in a textbook.

This, Gott said, is the Westinghouse’s virtue and value: It encourages high schoolers to do science — real science.

We agree.

But, we also wonder if aspiring to World Series play is the way to learn to play baseball. Should the Nobel Prize’s notorious allure be dangled in front of adolescents? We wonder, too, about the hedges — apparent or concealed — in the Westinghouse process. No live vertebrate studies? That’s a blow to biology students and the biological sciences, in favor of the narrow and unpopular Animal Rights agenda. And what of the subjectively judged mix of appearances and social skills that Westinghouse lays on the judges’ table?

Would, say, Stephen Hawking — to cite an extreme example — have been able to win the Westinghouse? What about Californian Kary Mullis, a self-described Space Cadet, who is a Nobelist, for his invention of the polymerase chain reaction (PCR). Could Mullis have met any of Westinghouse’s non-scientific qualifications?

Psychological Judgments Questioned

More insidious is the discovery, revealed for the first time here, that Westinghouse judges make unacknowledged psychological judgments about the kids. Being emotionally sound is not part of any real life definition of being a scientist — and it is extraordinarily discriminatory against youngsters who may be mentally ill. Many great scientists, we’re sure, would flunk the “all-American” tests Westinghouse and Science Service are trying to impose.

Many people, in fact, choose science because it looks beneath or beyond the uncomfortable world of experience, for the deeper truths these realms may provide. To discriminate against them, based on a sponsor’s notion of what a P.C. scientist should be — and how he or she should behave — blocks what could be these youngsters’ only path to self-realization and social value.

We think it’s wrong.

Do Tests Predict Talent?

We wonder, what is more, whether “shrinks” — psychiatrists, psychologists or others — are good predictors of scientific talent and achievement. We know of no predictive test that establishes their qualifications in this realm. And we wonder whether this surreptitious assessment — to whatever extent it occurs — may be responsible for the Westinghouse’s poor, and declining, ability to pre-select Nobel prizewinning scientists, its acknowledged goal.

We don’t think psychological instruments or hunches are germane to the search for science talent. We think they, and the clearly very personal evaluations to which these bright kids are subjected, should be discarded, in favor perhaps of more objective — scientific — measurements of talent. Does the coach or owner really need to know why a player hits a long ball?

“...We’re uneasy with it. I certainly am uneasy with it . . . . There’s lots of discussion about it every time, and there’s lots of disqualifications every time” because of it.

However, one long-time judge, Harvard psychiatrist Stuart T. Hauser, M.D., takes a longer view of the matter. He said by phone last June:

“This has not posed a problem, since most of the research is in molecular biology — single cells or preparations from cells. It doesn’t pose a problem because this is the way that kids will be directing their work!”

Corrections

In last month’s article on experts’ appraisals of a new test for Leishmaniasis tropica, a key word was deleted from one sentence; it is italicized here: “Infectious disease specialist Sherwood L. Gorbach, M.D., of Tufts, in Boston, noted that Spencer and his colleagues have not reported how many, if any, of the 100 vets have clinical manifestations of Gulf War Syndrome, but did not show up positive on the test.” In the same article, the following sentence was incomplete: “The Corixa test substrate is a 45-base pair strand of DNA.”
What Went Wrong?
A Science Writer Tells His Story

We were puzzled a while back when we read Pulitzer prize-winning articles by a science writer whom we regard very highly, Jon Franklin, of the now-defunct Baltimore Evening Sun. Franklin, we recall, filled many column inches with accounts of late-night, tense, tearful scenes in intensive care units and the bleak waiting areas outside their doors.

Surgery for a lethal brain tumor was the main theme. But the story was very "humanized," according to Franklin, so it would not come across as a technical account. Rather, it was about human beings living with technology.

Reasons Explained
Franklin focused on the family's travails — not on the clinical researchers' successful efforts.

Now, in a disturbing essay in the professional newsletter ScienceWriters (Summer, '97), Franklin explains his strategy, and the forces that led him to adopt it. He presently directs the creative writing program at the University of Oregon, in Eugene.

"I'll tell you why I was a science writer," Franklin writes. "I like science. I like the game. I like the idea that knowledge is a frontier, that inquisitiveness is a force."

It's not been said any better. Why, then, hide the science?

By the '70s ... [C.P.] Snow's cultural gap had become a chasm. Earlier science writers had found ignorance a problem; now there was hostility as well. You had to be an oyster not to notice it. Many journalists turned against science, [and] were articulate about it. Animal rights activists called you at 3 a.m. and told you what dress your daughter had worn to school that day.

In those days, Franklin writes, he put the word "science" in his lead, thinking it would attract readers. It didn't. The word confused them, made them feel inadequate.

There was something more sinister afoot ... . As attitudes changed, editors started wanting a certain negative spin on science stories. If you didn't comply, you got played inside [the paper], or your existence was otherwise made uncomfortable. Some science writers, especially those who identified with the ecology movement, saw hostility to science as a path to success.

Franklin says he was ostracized by newsroom colleagues — they shunned produce from his vegetable garden. He was a scientist, they said. (He wasn't.) But they "were afraid" of him.

So: Franklin took the word "science" out of his stories — as we had noticed. Instead, he wrote about science "as though it were a normal human activity." That pleased his editors and readers. He won two Pulitzers ... .

But the demonization of science demonized science writing as well. This left newspapers and mags filled with soft science and trivia — a science lite that seasoned journalists like Franklin shun.

Program Killed
So, he went west. To Oregon State University (OSU), in Corvallis, to head a science journalism undergraduate teaching program — the only one of its kind in the U.S. But the job soon vanished, as tax-cutting hit educational programs.

Franklin then went to the OSU dean of science for funding.

"I went to him hat in hand," he recounts in ScienceWriters. "I'll never forget his response."

"That's your problem," he said. 'We don't need you."

(We get a similar message: From time to time, we distribute a few hundred PROBEs at a scientific or medical meeting, along with a discounted introductory subscription offer. We get very few responses.)

Franklin paused to reassess his career. His writing "about people, not science, was going well. So I pushed the science into the background. Pretty soon ... it almost wasn't there."

Today, Franklin says, he sees himself simply as "a writer."

In retrospect, he says, he and his colleagues erred by allowing themselves to be "dazzled" by science's power, while they ignored the power of art, as they wrote very narrowly about science.

This is a fitting epitaph for a generation of skillful, but sharply focused science writers — our colleagues — who are now mostly gone, retired or dead.

The big story now, Franklin says, is not specific developments in science. Rather, it is "the wearing and unresolved conflict between science and culture, between ourselves and ourselves as it were." And that, Franklin says, is work for writers, not science writers.

If science was ever a thing apart ... that time is past. Today, science is the vital principle of our civilization. To do science is critical, to defend it the kernel of political realism. To define it in words is to be, quite simply, a writer working the historical mainstream of literature [emphasis added].

We couldn't agree more. But:

However driven we may be by necessity to hide science as a normal human interaction, as in Franklin's Pulitzer piece, this is an error. We think science, and a global civilization that depends on it, will be safe and secure only when the public understands — acknowledges — and accepts science, culturally, as a powerful human force, rather than, as now, as a dispensable source of awesome toys and awful terror.

—D.R.Z.
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Promotional material supplied by the Westinghouse Foundation, in Pittsburgh, which funds the program, and Science Service, a non-profit organization in Washington, D.C., which runs it, list only five Nobel Prizes, all in physics or chemistry, among the 560 winners since the first Westinghouse awards in 1942. Four of these five Westinghouse-to-Nobelist winners were finalists in the contest’s first eight years, up to 1950; the last, chemistry Nobelist Roald Hoffmann, Ph.D. of Cornell, was a Westinghouse winner in 1955. Since then, the Westinghouse’s score for the Nobel has been zilch.

Delay Is Three Decades
Some time must elapse, of course, between the year a high school senior wins a Westinghouse, and the time he or she can hope to win a Nobel prize. Specifically, the gap between Westinghouse and Nobel prize for the five double winners — who include physicists Leon Cooper, Ben. R. Mottelson, and Sheldon Glashow, and chemist Wallace Gilbert — is 28 years, average. This means that 270 Westinghouse winners through 1969 have practiced science long enough to win Nobel prizes. But other than the five noted above, who won their Westinghouses before 1956, no one else has.

As a former judge, and chief of the Science Service’s trustees, Glenn T. Seaborg, Ph.D. — who is himself a Nobel Laureate, in chemistry — pointed out in 1990, in a Westinghouse publication: “We do not have [a] … good … record on predicting the future Nobelists. That’s a degree of fine-tuning we have not yet achieved.”

The better part of a decade later, they still haven’t.

Biofactoids Float in from Cyberspace

A duck’s quack doesn’t reverberate — and no one knows why.

A group of geese on the ground is a gaggle. A group on the wing is a skein.

The underside of a horse’s hoof is called a frog. It peels off several time a year and is replaced by new growth.

Emus and kangaroos can’t walk backwards — which is why they are depicted on the Australian coat of arms: No retreat.

The names of the three wise monkeys are: Mizaru, See no evil! Mikazaru, Hear no evil! and Mazaru, Speak no evil!

Camel’s milk doesn’t curdle.

Porcupines float on water.

Murphy’s Oil Soap is the chemical most often used to clean elephants.

Elephants all walk on tip-toe, because the backs of their feet are all fat, and have no bone.

The shape of plant collenchyma cells and the shape of bubbles in beer foam are the same; they are orthotetra-chedecahedrons.

The word for dog in the Australian aboriginal language Mbabaran happens to be dog.

Cat’s urine glows under a black light.