

# STS Alumni Speak

By Dr. MARINA P. MEYERS

STS's First Girl Grand Scholarship Winner, 1942

► TWENTY-FIVE Science Talent Searches ago I was at a banquet very much like this one only minutes away from learning that I was to be one of the two top winners of that year. As I have talked to the winners over the past few days I have been asked many times what it was like then and what changes have taken place in the Science Talent Institute since.

The people involved are very much the same. There are many members of SCIENCE SERVICE and Westinghouse who were with us then and are here again tonight and the winners themselves are a group very much like our own. But everything else is quite different. The first Science Talent Search was planned on the spur of the moment and announced only a few months before the end of our senior year, and the Washington trip was held in the middle of the summer when our college plans were already complete. I had already started as a freshman in the summer term at N.Y.U., and I had to take time off from college to be here.

When we arrived in Washington we were met at the station by a bewildered delegation from SCIENCE SERVICE who looked as though they had no idea as to what to expect but were prepared for almost anything. The tests and judging were similar, but although most of us had done scientific work of one sort or another there were no formal projects as such. There would have been no time to get ready, and in any case, no place to put them. It was problem enough to find where to put us. Space was hard to come by in war-time Washington on short notice. We ended up staying at a very small and old hotel called the Martinique which we just about took over, but even so there was no room to spread out. Even beds were short and I had to share one with another winner. The entire Institute was supposed to take only 3 days which as you can well imagine was not nearly enough.

After the awards had been announced there was still so much to do that the two top winners were asked to stay over for another couple of days. So SCIENCE SERVICE wired my parents about the change in plans. Now at that time the Western Union station at home was in a back corner of a small store in the middle of the village and when the message was received it was read with great interest, judged to be in the public domain, and the news was quickly passed around to all present.

In the resulting excitement no one remembered to deliver the message to its destination. Late the next morning when I called home the telegram had not yet been received and my father and mother were among the last to

(Continued on p. 190)

By LT. COL. P. E. TESCHAN,  
MC, USA

STS's First Boy Grand Scholarship Winner, 1942

► I FOUND this invitation to talk about the meaning of the Science Talent Search for my life to be irresistible. And in the limits of time, therefore I would like to address these remarks principally to the 40 winners—so the rest of you are on your own for a few moments!

Quite logically I am sure you find, as I found, this Science Talent Search experience to be a sort of scientific confirmation, a validation of your hopes, that should you choose for a career in science, it will be a live option for you. After a national competition on this scale, your success makes it a live option indeed!

For me the influence of the Science Talent Search was quite simple: It made my education possible—through college and into medical school. Those were perhaps less anxious days for parents and students than these are, with less pressure about what college to choose, what major to select, what post-graduate training to get, when to specialize—although I decided for medical research since the seventh grade.

At any rate I chose a liberal arts college—Carleton College in Northfield, Minnesota, to be exact—and there was introduced to the profound difference between training (which is what post-graduate work toward a job in science is mainly about) and education. My narrow horizon was blown open, as it were, to reveal newer dimensions for a career in science that I hadn't seen before. Perhaps they may be of some value to you as well.

The first one we might call a longitudinal historical dimension. It was in a philosophy course that I discovered that human beings have not always apprehended reality in the universe as we do. Weighty authorities had held tenable alternate views to what I knew to be real and important: and that was a jolt!

It appears that our thought, scientific or otherwise, exists in a longitudinal or historical dimension, with origins, diversity and destiny, but always in flux. And how we perceive reality may depend on the notions we have and the techniques we use when we search it. Later in medical school someone wondered aloud how different a system of medicine we might have if the blood enzymes, hormones and vitamins had been measurable before the blood urea, chloride, bicarbonate and glucose!

In medical school another dimension appeared in which a career in science is lived—as it happened, I was gently introduced to it by another medical student—who changed her name to Teschan shortly thereafter.

(Continued on p. 191)

## Questions

PHYSICS—What new roles are appearing for the use of plutonium 238? p. 181.

OCEANOGRAPHY—Why do some oceanographers believe the African and American continents have remained in place for the past 25 million years? p. 184.

TECHNOLOGY—What is "dual beam interferometry by wavefront reconstruction?" p. 190.

## SCIENCE NEWS

SCIENCE NEWS LETTER

VOL. 89 MARCH 19, 1966 NO. 12

Edited by WATSON DAVIS

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N.W., Washington, D. C. 20036. NOrth 7-2255. Cable Address: SCIENSERV.

Subscription rate: 1 yr. \$5.50; 2 yrs., \$10.00; 3 yrs., \$14.50; ten or more copies in one package to one address, 7½ cents per copy per week; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage. Change of address: Three weeks notice is required. Please state exactly how magazine is addressed. Include zip code.

Copyright © 1966 by Science Service, Inc. Republication of any portion of SCIENCE NEWS is strictly prohibited. Newspapers, magazines and other publications are invited to avail themselves of the numerous syndicated services issued by Science Service. Science Service also produces and distributes THINGS of science (monthly), produces and publishes books and conducts the National Science Youth Program.

Printed in U.S.A. Second class postage paid at Washington, D. C. Established in mimeograph form March 13, 1922. Title registered as trademark U. S. and Canadian Patent offices. Indexed in Reader's Guide to Periodical Literature, Abridged Guide, and the Engineering Index. Member of Audit Bureau of Circulation.



## SCIENCE SERVICE

The Institution for the Popularization of Science organized 1921 as a non-profit corporation.

Board of Trustees—Nominated by the American Association for the Advancement of Sciences: Wallace R. Brode,\*\*\* Washington, D.C.; Bowen C. Dees, National Science Foundation; Athelstan F. Spilhaus, University of Minnesota. Nominated by the National Academy of Sciences: Harlow Shapley, Harvard College Observatory; Detlev W. Bronk, Rockefeller Institute; Henry Allen Moe, The Clark Foundation. Nominated by the National Research Council: Leonard Carmichael,\* National Geographic Society; Eric A. Walker, Pennsylvania State University; Glenn T. Seaborg, U.S. Atomic Energy Commission. Nominated by the Journalistic Profession: Gordon B. Fister, Allentown (Pa.) Call-Chronicle; Ralph B. Curry, Flint Journal; O. W. Riegel, Washington and Lee University. Nominated by the Scripps Estate: Ludwell Denny, Scripps Howard Newspapers; Edward W. Scripps II,\*\* Edward W. Scripps Trust; Edward J. Meeman, Memphis Press-Scimitar. \*President, \*\*Vice President, \*\*\*Treasurer.

Staff—Director: Watson Davis. Assistant Director: Dorothy Schriver. Writers: Barbara Culliton, Jonathan Eberhart, Ann Ewing, Faye Marley, Patricia McBroom, Barbara Tufty, Judith Viorst, Ruby Yoshioka. Science Youth Division: Joseph H. Kraus, Lloyd Ulmer. Photography: Fremont Davis. Production: Marcia Nelson. Syndicate Sales: Forrest L. Snakenberg. Librarian: Margit Friedrich. Interlingua Division in New York: Alexander Gode, 80 E. 11th St., GRamercy 3-5410.

## ADVERTISING

Louis D. Young, Advertising Director SCIENCE NEWS, 1719 N St., N.W., Washington, D. C. 20036. Telephone 202-667-8945.

Advertising Representatives: SCRIPPS-HOWARD NEWSPAPERS. General Advertising Department: 200 Park Ave., New York, N.Y., TN 7-5000; 400 N. Michigan Ave., Chicago, Ill., SU 7-3355; 800 Broadway, Suite 1100, Cincinnati, Ohio, 721-1254; Suite 211, Braniff Building, Dallas, Texas, FL 7-3847; 5-258 General Motors Building; Detroit, Mich., TR 5-8727; 6363 Wilshire Blvd., Los Angeles, Calif., OL 3-0026; Room 1522, Philadelphia National Bank Building, Philadelphia, Pa., LO 3-6275; Central Tower Building, 703 Market St., San Francisco, Calif., GA 1-5187.

## Biologist Top Winner

(Continued from p. 179)

crosses that clearly indicated direct or indirect contact with Christian influence, an idea contrary to the accepted history of the area.

Widely interested in activities both in and outside of Theodore Roosevelt High School where he is now a senior, Kevin hopes to continue his education at McGill University with plans of teaching paleontology.

The attractive, blonde, female member of the scholarship quintette, Linda Powers, gives every indication of achieving her dream of earning a doctorate in photochemistry, after undergraduate work at Duke University, and then teaching and doing research at a university. In addition to her exacting work demonstrating and amending a tentative theory of color change in organic chemicals, she has designed and built rockets, testing for best fuel concentration (the most successful went 250 feet up, landed 500 yards away); has built a lens and scope to experiment with light; has studied the environment and metabolism of seahorses; and has built a laboratory in the family basement, utilizing the vacuum cleaner as a ventilating device.

## CLASSIFIED

Classified advertisements are accepted for the following classifications: Books, Business Opportunities, Camps, Colleges, Micro Ads, Personals, Positions Wanted, Services, Travel. All advertisements must be consonant with the character of Science News. Rates . . . single insertion 25¢ a word. Minimum charge is \$5.00. Count 2 extra words for Box and Numbers. Classified advertising is payable in advance. Closing date 3 weeks prior to publication (Saturday).

Employment opportunities are accepted at regular display rates, subject to agency commission. Minimum size 1 inch. Minimum charge \$18.90 per inch. Rate cards available upon request.

To speed up insertion, address classified advertising . . . Classified Ads, Science News, 1719 N Street N.W. Wash. D.C. 20036

## BOOKS

**BOOKS ON WILDFLOWERS.** Comprehensive list. LEW's, 2510 Van Ness Avenue, San Francisco, Calif. 94109.

## BUSINESS OPPORTUNITIES

**HEADMASTER WANTED.** Private school property. Large campus. Lake. Equipped. Lease \$800 month. Sell. Box 402. Hague, New York.

**DISTRIBUTORSHIPS OPEN**—Young company expanding into novelty business needs people to contact local stores. Salary plan—\$200 mo. plus comm. part time, or \$400 mo. plus comm. full time. Commissions can easily amount to as much as base salary. Send references and past history plus \$10 deposit on samples, materials, and folders to be sent to applicant. (\$10 deposit is not a price for applying—is refunded if applicant is not accepted.) Send applications in full. Incomplete applications will not be considered. Write, M & J Research Company, 1607 W. 24th, Box 2, Lawrence, Kansas.

## MICRO ADS

**FRESNEL ZONE PLATES** bend light like lenses, but by diffraction. 2-element set, many project ideas, \$2. Metrics Laboratories, 1845 North Howe St., Chicago, Ill. 60614

## PERSONALS

**FORMOSAN BUTTERFLY**, moth, beetle, dragonfly, cicada for sale. **NOVELTY**, Box 860, Taipei, Formosa.

She is a senior at Woodrow Wilson High School.

Larry E. Morse, 18, of Dayton, Ohio, was given a \$250 Westinghouse Science Award and named first alternate to the \$3,000 scholarship, and Mary Lou Silkworth, 18, of Amityville, N.Y., was designated second alternate and presented with a \$250 award.

In addition, nine girls and 24 boys received the \$250 Westinghouse Science Award in recognition of their top level ability and promise as creative scientists of the future.

• Science News, 89:179 March 19, 1966

## Dr. Meyers

(Continued from p. 180)

learn the news the whole town was talking about already.

But these are rather trivial matters to be speaking of when in the last 25 years all science and the world itself has changed so much. I have tried over the last few days to pick out only one great change which impresses me most of all and is most pertinent to the concept of the Science Talent Search. I have decided that it is the marked difference in general public attitude toward science education at the secondary school level.

When I was in high school we were not expected and not particularly encouraged to have an interest in theoretical science. If by some chance such an interest happened to exist it was taken about as seriously as Buck Rogers on the radio. Perhaps it was not as bad as all that. SCIENCE SERVICE had already been in existence for twenty years. There were science fairs in New York, science clubs existed here and there and in a few schools science was emphasized and well taught. Always then were the individual dedicated teachers like the high school chemistry teacher Dr. Seaborg credits with his own interest in his field, and like the biology teacher who convinced me to take the Science Talent Search examination. But these were the exceptions.

By and large I think it would be fair to say that science was segregated in the universities and left pretty much to the professions. There was very little we could do in high school beyond taking the three standard courses in elementary physics, biology and chemistry. If we wanted to do some outside reading we could go to the library and find books on history, literature and the arts, but except in the largest schools the science shelf was likely to be limited to a few handbooks on nature study. I saw few science books before I got to college and these few had to be obtained by mail through inter-library loans or were college texts loaned to me by my teacher.

It has been much easier for the Silver Anniversary group. Your projects show that you have had encouragement, help, materials and equipment to work with that would have been unheard of in 1942. In addition, about half of you have already had experi-

ence with science beyond the high school level, in summer institutes, college courses or scientific summer jobs. Such opportunities were rare indeed for us.

In the TV forum which some of you taped a point was brought up about the necessity and at the same time the difficulty of educating the general public in scientific matters. This is not an easy problem, but I think that the very fact that such a program can be broadcast—that there is enough public interest to make a forum on scientific matters possible is a tremendous step in the right direction. There are many people still who are not quite sure what you are talking about but they at least give you a measure of serious interest and respect that would have been unusual in 1942.

In a few minutes now we will know who gets the top awards. But, however that turns out, you are all already the winners of something more valuable than the largest scholarships. Doors have already been opened to you which we would hardly have dared approach 25 years ago. And while you are winners, you are all also in a sense contributors to what you have won.

By your very presence here, and by exhibiting and explaining your projects, you have once more brought to the attention of the public the importance and the possibilities of science at the secondary school level. In 1942 when the telegram about my scholarship was read and passed around by the local people who would be voting in the next school board election something was started which you are continuing today in ever increasing measure.

• Science News, 89:180 March 19, 1966

## MEDICINE

### Brain Cancer Treated By Pocket-size Pump

➤ A 16-YEAR-OLD girl with brain cancer who was formerly unable to get out of bed is up and about, leading an almost normal life as a result of drugs constantly dripping into her bloodstream from a pocket-size pump.

Doctors at the Lahey Clinic, Boston, have treated the girl since 1964, following up a technique that has been successful with liver cancer patients. Dr. Elton Watkins Jr. in 1959 designed a portable pump for ambulatory liver cancer patients, who could carry it in a coat pocket. It was wound daily like a watch and carried a five-day supply of drugs in a disposable, replaceable bag.

Brain tumors are being treated very much as the liver cancers were. The pump drips the anticancer drug into either the carotid artery in the neck or the vertebral artery serving the cancerous area of the brain.

The American Cancer Society reported the research on brain cancer by Drs. Robert D. Sullivan and Wladyslaw Z. Zurek, with Dr. Watkins, all of the Lahey Clinic Foundation.

• Science News, 89:190 March 19, 1966

## Col. Teschan

(Continued from p. 180)

Perhaps we can call this personal dimension and illustrate it like this: As scientists we are expected to think, to reason, to analyze, to synthesize, to create—but there is such a thing as overdoing the intellectual bit, even to become an overblown caricature of a depersonalized, disembodied brain. Since we are stewards of other talents and endowments than merely intellectual ones, we should expect also to live, to love, to savor, to experience the non-quantitative, to be in relationship with other persons—deeply and fully. The zest of the intellectual chase is great, but don't cut the fuel mixture too thin!

If there is a historical and a personal dimension, there is also a social dimension. Last year in Viet Nam our Medical Research Team was studying the impact of our early attempts at medical care among such population groups as the Montagnards of the Central Highlands. On one of these trips I had occasion to visit a number of the sick in Jarai tribal village near Pleiku. One patient in a smoky, reed-matted hut on stilts was gravely ill with pneumonia, grossly dehydrated, with a high fever. She needed the antibiotics we could give her; but she also needed mineral and fluid replacement—how to do that?

Down in the village an ox had just been sacrificed. We had seen parts of it in a grayish soup boiling in large cauldrons set over charcoal fire-pits in the ground. Here was a sterile, mineral-rich source of the fluids the patient needed, and we prescribed accordingly.

We were astonished in the experience; we were not really prepared for it by training: After all how many of

the patients in your ordinary acquaintance or mine really live in the Stone Age?

Now while this may be a rather vivid example, it is nevertheless true in medicine and increasingly in other disciplines, that concepts and technologies are increasingly being developed and applied in societies and places different from our own. The successful defense of our own society may just conceivably depend at least partly on just such efforts. This is a social dimension, then, as scientific activity increasingly occurs and scientific careers are increasingly lived, immersed rather than apart from society.

So it may be that you will see your career in science in the historical dimension, a personal dimension, and a social dimension—in a world that is far smaller or larger—depending on your view of it—than perhaps we dreamed, or at least than I dreamed at launching time here 25 years ago.

• Science News, 89:180 March 19, 1966

## Dr. Seaborg

(Continued from p. 182)

contemplate the bombardment of uranium with uranium ions.

A particularly exciting possibility is that isotopes with about 126 protons and 184 neutrons, corresponding to closed nucleon shells—that is, isotopes like the one with the atomic number 126 and the mass number 310—will be sufficiently stable to make discovery and identification possible. Thus it can be seen that there are prospects for continued exciting advances in the field of the transuranium elements.

In observing the 25th anniversary of both the Science Talent Search and the discovery of plutonium, it is interesting to note that the Westinghouse Corporation has played a leading role in finding and nurturing scientific talent and in furthering the peaceful uses of nuclear power.

The Science Talent Search, developed by SCIENCE SERVICE, is, of course, financed by the Westinghouse Educational Foundation which also makes possible the scholarships and awards granted to the young scientists discovered by the Search.

On the other hand, Westinghouse is also a pioneer in the nuclear power field, being one of the major developers of nuclear power reactors in the world.

Tonight I am sure there are many of us who wonder what the next twenty-five years will bring and whether we will gather to observe such anniversaries on a similar evening in 1991. I believe we will. And I think we will have good reason to celebrate them with success and joy.

I look forward to the challenges ahead, hopeful that the young men and women of science will accept them, triumph over them, and carry on in the tradition of the Science Talent Search winners here tonight and at work throughout the country.

• Science News, 89:181, March 19, 1966

### RAY GUN! Want to build a Laser?

You can build our Laser and Power Supply for only \$100. The Laser alone can be built for \$40. It is the lowest cost QUALITY LASER system in the United States. Shoots a pencil-thin beam of light, will burn anything in its path in a fraction of a second, even through diamonds! Not a demonstration model, a real industrially-applicable LASER. Blue prints, directions, price and parts lists, only \$9.95 ppd.

M & J INDEPENDENT RESEARCH COMPANY  
1607 W. 24th St. Lawrence, Kansas, 66044

### GRAPHIC SPEED FILE

How to Save Filing & Storage Time  
With DISPOSABLE DRAWERS

You store material easier and find things faster with feather weight box drawers. Strong corrugated drawers give extra service outside cabinet.



Save transfer time -- store or discard drawers with contents -- add economical replacements.

Eight sizes, all interchangeable in steel cabinet. Use singly or in any sequence to fill your needs.

Your material is stored flat. Hinge type drawer lid gives extra protection. Price only \$49.95 plus drawers.

**FREE** 16 Page BOOKLET No. 20-AE  
Mailed Without Obligation

GRAPHIC SYSTEMS, Box 398, Yanceyville, N.C.

**WFF 'N PROOF**

The **GAME** for THINKERS

Can you solve this problem?

1. There are three numbered statements in this box.
2. Two of these numbered statements are not true.
3. The average increase in I.Q. scores of those who learn to play WFF 'N PROOF is more than 20 points.

**Is statement No. 3 true?**

A NEW DIMENSION IN EDUCATIONAL GAMES  
designed by Yale Professor  
Layman  
E.  
Allen

Box 71-FR  
New Haven, Connecticut  
Please send me . . . WFF 'N PROOF  
game/s @ \$6.50 each (including \$.50  
for postage and handling). I enclose  
\$. . . and understand that if I  
am not completely satisfied, I can re-  
turn the kit in 10 days for a full re-  
fund of the purchase price.

Name . . . . .  
Address . . . . .  
City . . . . . State . . . . . Zip . . . . .

**Refund and return privileges guaranteed!**  
*Dealer Inquiries Invited*

**WFF 'N PROOF**

## AUTHORS WANTED BY NEW YORK PUBLISHER

Your book can be published, promoted, distributed by a reliable company on a subsidized basis. Fiction, non-fiction, poetry, scholarly, scientific and even controversial manuscripts welcomed. For Free Booklet write Vantage Press, Dept. T8, 120 W. 31 St., New York 10001.

**200,000 VOLTS  
ELECTRO-STATIC  
GENERATOR  
KIT**

**\$24.50** POSTPAID

**FULLY ASSEMBLED  
\$39.50 Postpaid**

200,000 Volts, as illus., can be assembled with pliers and screw driver. 17" high, 7" diam., Current 1.5 to 2.5 microamps. 90% rel. humidity range. Life of service over 1000 operating hours. 110 v 60 cycle AC motor, insulating column of unbreakable vinyl chloride, oil impregnated bronze bearings. Aluminum base, housing, frame and charge collector

**500,000 VOLTS. Kit \$39.50** postpaid includes drawings and all necessary parts except motor. (Any 1/8 HP or larger motor will suffice.)

Experiments in Electrostatics—a book of experiments you can do . . . send 50¢. Low priced physics equipment for schools and science projects. Free catalogs—send 15¢ for postage.

**MORRIS and LEE**

Dept. SN-3B-66, 1685 Elmwood Ave., Buffalo, N.Y. 14207