

The Village Chronicle

national accelerator laboratory

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April, 1969

State Gives Title For NAL's Site

April 10, 1969 was truly a landmark day in development of the National Accelerator Laboratory.

On that day, at a luncheon at the Palmer House in downtown Chicago, Governor Richard B. Ogilvie turned over ownership of the 6,800-acre site in DuPage and Kane counties for NAL to the U.S. Atomic Energy Commission.

Seaborg, Ramey Speak

Glenn T. Seaborg, chairman of the U.S.A.E.C. and a Nobel laureate in chemistry, accepted the title to the land at the luncheon, which was described as the beginning of "A New Era for Illinois."

Said Dr. Seaborg: "I am sure that you will find that the Laboratory will be a most worthy institution to have located here so close to Chicago, a city in which so much significant nuclear history has already been made."

James T. Ramey, an AEC commissioner, also spoke at the site-conveyance ceremony. He said, in part:

"...the importance of this new Laboratory is not limited to science alone. Both the Atomic Energy Commission and the management of the Laboratory are dedicated to the objective that the construction and operation of the accelerator shall go hand in hand with the advancement of human rights."

Master of ceremonies at the luncheon was Ray C. Dickerson, director, Illinois Department of Business and Economic Development. The invocation was delivered by Hudson T. Armerding, president, Wheaton College, who also had served as chairman of the site acquisition committee. Host for the luncheon was Donald M. Graham, chairman of Mayor Daley's Committee for the Economic and Cultural Development of Chicago and chairman of the board, Continental Illinois National Bank and Trust Company, Chicago.

Wilson Proposes University

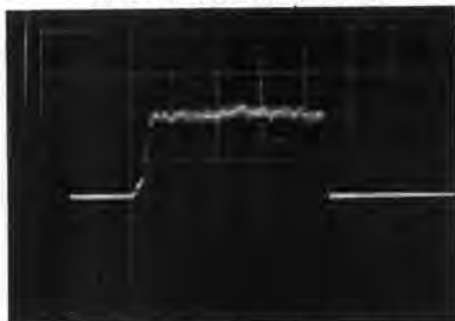
Robert R. Wilson, director of NAL, spoke briefly about the inter-relationships of "particles, accelerators and society" and proposed that the state give serious consideration to the eventual location of a major university in the area contiguous to the Laboratory site.

In his speech, Governor Ogilvie described the event as the beginning of a new era of scientific and technological eminence for the State of Illinois. The governor presented a bronze plaque signifying the transfer to Dr. Seaborg. The inscription on the plaque reads, in part:

"The people of Illinois proudly present their fertile acres and accomplished talent to the nation for the development of a major

(Continued on page 6)

Historical Moment At NAL



A photo of the early accelerated proton beam from NAL's pre-accelerator: 200 milliamperes during 80 microseconds pulse

1st NAL Proton Beam

by Dr. Cyril H. Curtis

It was at 1:45 p.m. on April 17, 1969 that members of the NAL Linac Section obtained a beam of protons from the preaccelerator, the first and smallest of four cascaded accelerators which will comprise the complete 200 BeV accelerator.

The preaccelerator includes an ion source to produce the protons, and an accelerating column to give the protons a speed of four percent of the speed of light and a kinetic energy of 750,000 electron volts. The interior of the column under vacuum, one foot in length, withstands a voltage of 750,000 volts across it and operates in principle like the accelerating portion of an electron gun in a television picture tube.

Design, fabrication and testing of the preaccelerator to the present time has been primarily the responsibility of Cyril Curtis, physicist; Glenn Lee, mechanical engineer; and Charles Sharp, Gregory Urban, Raymond Hren and James Wendt, technicians. Many other persons in the Linac Section and elsewhere have made important contributions in bringing the system to its present stage of completion. A part of the construction was accomplished in the Physical Science Laboratory of the University of Wisconsin. The assistance of Argonne National Laboratory in the loan of their high voltage supply, while the NAL supply is under construction, made the early testing of the preaccelerator possible.

Protons are produced in the ion source by striking an arc discharge in hydrogen gas. The single negative electron is thereby stripped from the hydrogen atom leaving the positive nucleus, a proton, to float freely in the resulting plasma. Application of an electric force field extracts protons from the surface of the plasma and sends them on their way as a stream of positive particles.

Operation of the ion source first occurred on January 20. Beam currents up to 300 milliamperes were obtained. To date a current of approximately 50 milliamperes has been accelerated through the column to 745,000 electron volts of energy during initial testing. The goal is a beam current of 225 milliamperes with highly directive properties for injection into the linear accelerator (linac).

The properties of the beam from the preaccelerator are important in influencing the "quality" of the beam at all later stages of acceleration in the linac, booster, and main ring. At the highest energy there is a memory of the beam properties from the preaccelerator, with little that can be done to improve, albeit much that can be done to degrade, the initial beam quality. Effort therefore, will be devoted during the coming months to beam measurements and ion source adjustments for achieving the best beam quality.

Plan NAL Site Highway Closings

Several public roads running through the 6,800-acre NAL site are to be vacated soon, Kennedy C. Brooks, area manager for the 200 BeV Accelerator Facility office of the U.S. Atomic Energy Commission has announced.

At the request of the AEC, action is being taken by various township highway departments to vacate portions of the following public roads which are within the NAL site:

1. Giese Road (at the western boundary),
2. Kautz Road
3. Feldott Road
4. Holter Road
5. Hadley Road

6. McChesney Road (to the northern boundary)
7. Town Road (to the northern boundary).

Brooks explained that these roads will become private roads within the NAL site at such time as the legal steps for vacation are completed. It is anticipated that these actions will take place during May, 1969.

At that time, Brooks said, access to the site from Feldott, Giese, Kautz and Hadley Roads will be subject to restrictions or will be prohibited.

In addition, Brooks said, Kane and DuPage county Highway

NAL To Become Enrico Fermi Laboratory In 1972

Dr. Glenn T. Seaborg, Chairman of the Atomic Energy Commission, announced April 29th the Commission will name the National Accelerator Laboratory, now under construction near Chicago, in honor of the late Dr. Enrico Fermi.

Formal dedication and naming of the Enrico Fermi Laboratory will not take place until major construction work has been completed and the facility is in operation, probably in the fall of 1972.

Dr. Seaborg, in announcing the AEC's plans said: "It is particularly fitting that we honor Dr. Fermi in this manner, for in so doing we further acknowledge his many contributions to the progress of nuclear science, parti-

cularly his work on nuclear processes.

"Enrico Fermi was a physicist of great renown who contributed in a most significant way to the defense and welfare of his adopted land and to the enhancement of its intellectual well-being. His greatest achievement, the first sustained nuclear chain reaction, took place in a small laboratory in Chicago. It seems singularly appropriate, therefore, that the Federal Government recognize the memory of a man who was at the forefront of science in his day by naming in his honor a laboratory near Chicago--a laboratory which will have a major international impact on our understanding of the basic structure of matter."

(See Page 6 For Enrico Fermi's Biography)

Budget Request: \$96 Million

A request for \$96,000,000 in construction funds for the National Accelerator Laboratory is included in President Nixon's proposed budget for the U. S. Atomic Energy Commission for Fiscal 1970 which begins July 1, 1969.

The President also has asked Congress to authorize for NAL the full \$250,000,000 estimated for the entire construction of the Laboratory.

President Nixon's budget

request amended an earlier request for Fiscal Year 1970 which provided for the full \$250,000,000 authorization and a \$102,000,000 in construction fund money for NAL in Fiscal 1970.

NAL received appropriations of \$12,074,000 in fiscal 1969 and \$7,333,000 in fiscal 1968.

Dr. Robert R. Wilson, NAL director, testified before the Joint Committee on Atomic Energy hearings on the Fiscal 1970 budget request in late April.

NAL News Briefs . . .

NAL Fire Chief

John Dinkel, of the Booster section, has been appointed chief of the National Accelerator Laboratory Fire Department. One of the first calls for service received by the Fire Department was on April 17 when a small blaze started in the Reproduction Facilities house. The Fire Department now has two Seagrave fire trucks, one of which is a pumper.

NAL Ambulance Team

The NAL Village Ambulance Emergency squad has been established. It will be under the direction of Bob Scherrer, Beam

Transfer, and will include Greg Urban, of Linac; George Davidson and Reid K. Rihel, of Village Management.

New Tollway Plan

Construction of an \$80,000,000 extension of the East-West Tollway from Aurora to Rock Falls, Whiteside county, is expected to begin this Spring. It is hoped that the new road will be open in November, 1971. The extension will run about 60 miles west to the west of Aurora, the present terminus. Eventually, the tollway is to extend to the Illinois-Iowa border.

Meantime, on site . . .

A few more houses are to be moved in the NAL Village to provide improved office space and internal communications. It is expected that all of the moves will be completed by May 15. A number of the houses will be relocated on new foundations around the Director's complex, the Atomic Energy Commission complex and the Main Ring group.

Batavia Booms

The city of Batavia has a population now of 8,700 and it is forecast by some that it will have 20,000 by 1980 within its limits. Four major manufacturing plants have been opened in the city in the last four years and the National Accelerator Laboratory is being developed on its boundaries.

Book Reviews

THE BIG MACHINE. by Robert Jungk. New York: Charles Scribner's Sons. Pp 245. 1968. \$6.95. Reviewed by M. Stanley Livingston.

This is the story of the 28-billion-volt proton synchrotron at the CERN laboratory located on the Swiss border at Meyrin, just outside Geneva. The laboratory was built for basic research in high-energy particle physics and held the world's record for energy for one dramatic year following its completion in 1959. But it is much more than just the story of one "Big Machine." It also tells of the frustrating but eventually successful negotiations among European nations which enabled them to pool their resources to build the very costly instruments essential for continued progress in modern physics. In the process they forged one of the first links in the chain binding European nations into an eventual supranational community.

The author, Robert Jungk, is a journalist-historian born in Berlin in 1913 and educated at the University of Zurich. He is now an American citizen living in Vienna, who has reported many important news stories of our times. He is most noted for his book *Brighter than a Thousand Suns*, which described the scientific and political background of the development of the atomic bomb. This new book is an attempt to tell the other side of the story—the scientists' dedication to basic research free from military applications or practical goals.

Origin of CERN

The Conseil Européen pour la Recherche Nucléaire, known as CERN is a consortium of 13 European nations which share the costs of the laboratory according to their relative national incomes. The largest contributors and most assiduous scientific users are West Germany, Britain, France, and Italy. The actual motive for establishing the CERN laboratory was the construction of the "Big Machine," which was essential if European scientists were to maintain their front-rank position in the rapidly expanding new research field of high-energy particle physics. Along with its sister accelerator, the "AGS", being built at the Brookhaven Laboratory in America, it was the first of a new class of super-energy particle accelerators based on the new principle of alternating gradient magnetic focusing. In addition, there was another smaller machine, the 600-million-volt synchrocyclotron, which was of a previously tested type and was brought into operation first. With completion of the two accelerators other divisions were added, including a strong theoretical physics group.

Areas of CERN Research

The core and center of the research has been in the field of particle physics, the study of the structure and properties of the elementary particles of matter, and of the many new and short-lived particle states in which energy can condense. It was this mature laboratory that the author observed and whose history he studied through many discussions with scientific and political personalities involved in its inception and growth.

The author describes his first visit to CERN, where he was confused and later impressed



M. S. Livingston

with the unique atmosphere of this "open" laboratory. He had been prepared to find this newest example of "big science" tied down by national rivalries and bureaucratic regulations. Instead, he was amazed at the freedom of access, open discussion and casual atmosphere. He was overwhelmed by the massive scale of the scientific instruments, but even more by the evidently effective cooperation between the hundreds of mathematicians, machine physicists, electrical engineers, and skilled mechanics. He found a multilingual, informal group of scientists working together in teams without regard to race or national origin, and with no remnant of the earlier traditions of isolation and scientific jealousy. The sense of urgency and competition he observed was directed toward other teams of scientists in other laboratories such as Brookhaven. Although he could not appreciate the scientific goals he recognized this as a truly successful social experiment. He displays an almost euphoric glow as he describes this unique example of internationalism coming as a by-product of the scientific collaboration, seeing this success in scientific collaboration as a prototype for progress in international relations, and conceiving of the scientists and politicians who brought it into being as world-minded "Planetarymen" ahead of their time.

Jungk's Evaluation

As scientific history The Big Machine leaves much to be desired. The author has failed to grasp the technical principle of alternating gradient focusing, and he transmits only a very incomplete picture of how the accelerator is or how it operates. He recognizes only peripherally the place of the CERN machine in the sequence of continuously larger and higher energy accelerators, and is only casually aware of the breadth of scientific exchange and cooperation between the several laboratories. The author tried to learn what the physicists at CERN were doing, but was largely unsuccessful. He had a faint glimmer of the importance of the discovery of new particles, but did not really see the significance of these results. High-energy physicists reading this book will be appalled at the shallow presentation of the scientific facts and the basic concepts.

Larger Horizon

Despite these shortcomings, The Big Machine is well worth reading. It displays the humanistic side of scientific collaboration and shows that big scientific laboratories can bring social rewards and progress. It demonstrates the far-sighted vision of scientific statesmen and

how they could succeed in a common goal against the entrenched bureaucratic traditions of national governments. Even to the accelerator builder or scientist it provides a larger horizon than can be observed in day-to-day activities, and shows the breadth of cooperation needed if big science is to succeed. The author has indeed made his main point, which is that such international cooperation in science is a prototype for cooperation in other fields and provides hope for a peaceful world in the future.

M. Stanley Livingston is Associate Director of NAL. He formerly was director of the Cambridge Accelerator and is a "Big Machine" pioneer.

THE NEW BRAHMINS: SCIENTIFIC LIFE IN AMERICA. By Spencer Klaw. New York: William Morrow and Co., Inc. Pp 315. \$6.50. Reviewed by Jane Wilson.

In a book somewhat grandiloquently and misleadingly titled *The New Brahmins: Scientific Life in America* Spencer Klaw holds up a looking glass to the American scientific community at a time when, he says, "Science has become a form of established religion." What makes a scientist? Who are the scientists? How much money do they make and are they worth it? These are some of the questions the book tries to answer. In order to do this, Klaw has conducted a number of interviews with some pseudonymous scientific workers and armed himself with published sociological and economic documents. He does not limit his consideration to well-established figures. Instead, he has carefully avoided notable men. Very few in his gallery can even be considered first-rate. This frees him from the obligation to answer other questions concerned with the substance and significance of science and its spiritual and psychological rewards. When, therefore, toward the end of his book, he quotes I. L. Rabi on "the really new thing, the moving thing, the thing that will show the glory of God and the originality of nature, the profundity," Klaw finds the remarks both arrogant and naive — as indeed they would be if Rabi were speaking of the men whom the author examines in this book.

"Brahmins" Defined

These "new Brahmins" are a motley group with little in common beyond an education in physics, chemistry or biology. There are BAS and MAS living out lives of quiet desperation in industry, and there are chairmen of departments, writers of textbooks, industrial managers, government employees, and so on. They make their living from scientific pursuits. Although Klaw tries to draw some general conclusions these are lame, of necessity, and tend to be "on the one hand, and on the other hand," sometime things.

New for Old?

The scientists in the *New Brahmins* are a contented if pedestrian group. "They can buy summer cottages, drink scotch, build backyard swimming pools, buy their suits at Brooks Brothers, and send their children to private school," according to Klaw. It is always amusing to read about other people's finances, even though the statements might not jibe with the economic position of the scientists one knows. Klaw does not skimp on details. He likens an academic position in a first-class university to membership in a good club. Basing his con-



Mrs. Jane Wilson

clusions upon statistics from the American Association of University Professors for 1966-67 he states that 17 major universities were paying full professors an average of \$19,670 and some of the schools averaged over \$21,000. Klaw then assumes, probably erroneously, that the majority of professors in the sciences do a great deal of consulting to supplement their college salaries. In point of fact, some do but many do not. If one excludes these hypothetical consultant fees, university scientists are no different from university economists or sociologists (who also consult sometimes) or political scientists or English professors. Thus Klaw's *New Brahmins*, although he never acknowledges it, are none other than Old Educators. Even with their salaries swollen by possible consultant fees, university people receive as the author points out, less than half the income of orthopedic surgeons or radiologists.

Role of Science

Since his book is concerned in such large measures with bread-and-butter economics and so little with the substance of science, it comes as a great surprise, near the end of the book, when the author pontificates "The trouble with the Faustian bargain to which American scientists have been a willing party is that sooner or later the Devil will demand his due. The time may now be at hand. The expectations that were aroused in 1945, when it appeared that if scientists could invent an atom bomb they could invent anything, have not been realized. New products—plastics, artificial fibres, transistors, antibiotics, computers, color television sets—have, to be sure, flowed in a generous stream from the springs of scientific knowledge, and scientists whose main concern is with pure research have had a great deal to do with the development of new and more potent weapons. But Science has done nothing to mitigate hunger, poverty, inequality, ignorance, or even to improve the quality of housing, urban transportation and medical services." Neither, one might add, has Science reduced the divorce rate, added to the beauty of American highways or convinced twelve-year-old boys to go merrily to the barber shop. But wait a minute! How can one, produce antibiotics and not, in some way, improve the quality of medical services? How can one develop atomic power and not help to mitigate hunger and poverty and, yes, even inequality? As for ignorance, just what does Spencer Klaw think basic scientific research is all about? (Jane Wilson is book review editor for the Bulletin of the Atomic Scientists. She is honorary president of NALWO.)

Both reviews are reprinted from the March, 1969, issue of *The Bulletin of the Atomic Scientists* (Chicago).

NAL Library Offers New Variety

By Roger Thompson

An "usually reliable source", which indicates that the library will "soon" join the Director's Complex, has set off plans for spring cleaning. As of May 6th, duplicate reports and other surplus material will be displayed on a designated table for the taking. Since material will be changed on each Monday A.M., only one trip per week will be necessary.

To offset some readers' disenchantment with Davis' LAWRENCE AND OPPENHEIMER, we now offer another AMERICAN GENIUS, THE LIFE OF ERNEST ORLANDO LAWRENCE by Herbert Childs. As the title suggests, Mr. Childs seems slightly more impressed with Lawrence than was Mr. Davis.

For those who plan to inhabit this area for a while, the Batavia Historical Society has published HISTORICAL BATAVIA AND BATAVIA, PAST AND PRESENT, which are guaranteed to make the reader feel more "at home in Illinois".

In line with NAL's policy to exert leadership in the Equal Opportunity program, two Negro history books are available: A GUIDE TO NEGRO HISTORY IN AMERICA by Phillip Drotning and Richard Bardolph's THE NEGRO VANGUARD.

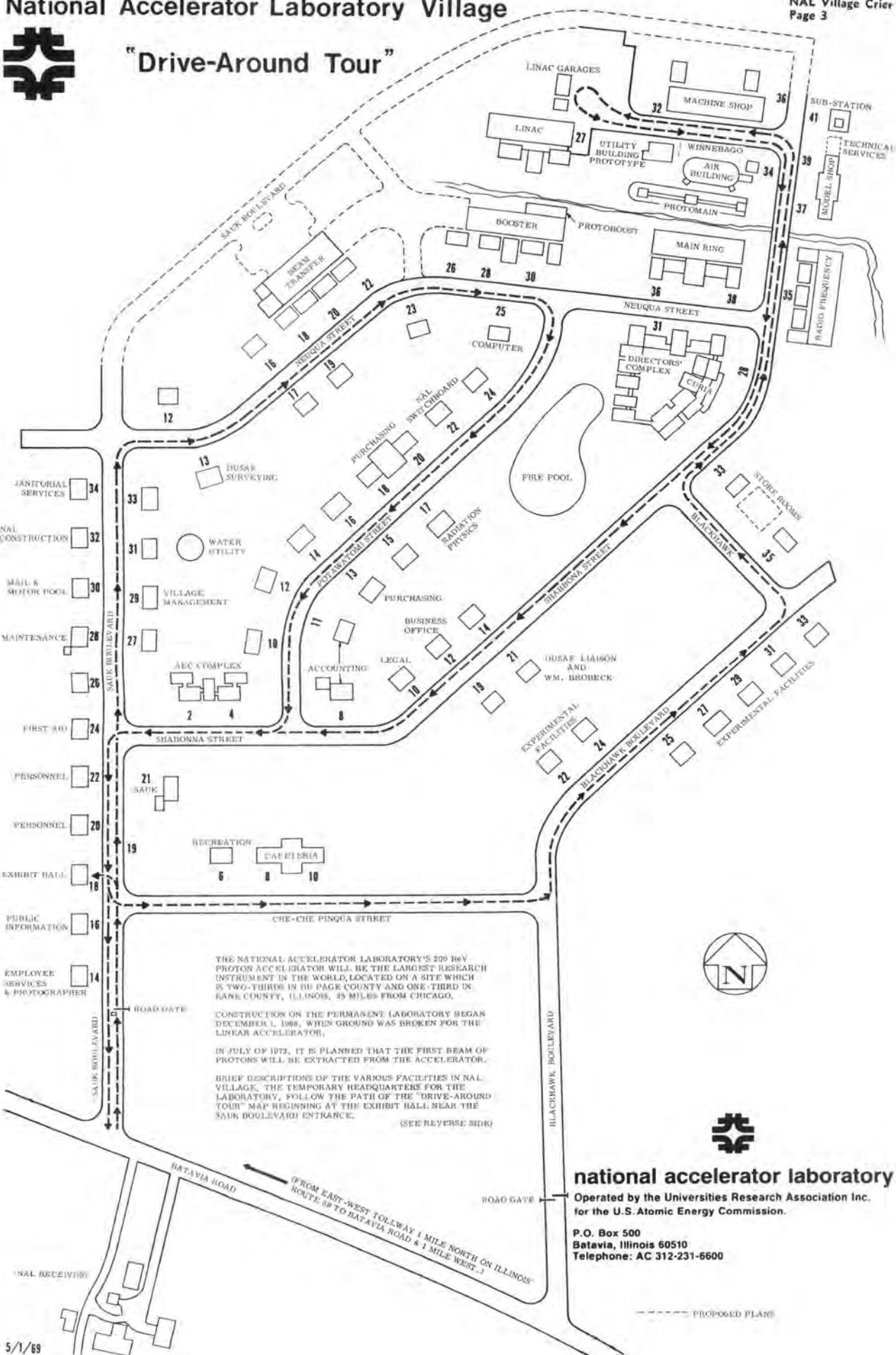
Finally, we have been the fortunate recipients of a collection of books from THE BULLETIN OF ATOMIC SCIENTISTS through Mrs. Jane Wilson, book review editor. Their scope is broad, dealing with some of the most pressing current problems. Perhaps the following listing may whet the appetite: THE POPULATION BOMB, PERMANENT POVERTY, FRANCE IN THE AGE OF THE SCIENTIFIC STATE, THE SPIRIT OF CHINESE POLITICS, VIETNAM: ANATOMY OF A CONFLICT, THE FACES OF POWER, DECISION MAKING IN NATIONAL SCIENCE POLICY and CRITERIA FOR SCIENTIFIC DEVELOPMENT, PUBLIC POLICY AND NATIONAL GOALS.

NAL Village Crier

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"Drive-Around Tour"



THE NATIONAL ACCELERATOR LABORATORY'S 200 MeV PROTON ACCELERATOR WILL BE THE LARGEST RESEARCH INSTRUMENT IN THE WORLD, LOCATED ON A SITE WHICH IS TWO-THIRD IN DE PAGE COUNTY AND ONE-THIRD IN RANE COUNTY, ILLINOIS, 35 MILES FROM CHICAGO.

CONSTRUCTION ON THE PERMANENT LABORATORY BEGAN DECEMBER 1, 1966, WHEN GROUND WAS BROKEN FOR THE LINEAR ACCELERATOR.

IN JULY OF 1972, IT IS PLANNED THAT THE FIRST BEAM OF PROTONS WILL BE EXTRACTED FROM THE ACCELERATOR.

BRIEF DESCRIPTIONS OF THE VARIOUS FACILITIES IN NAL VILLAGE, THE TEMPORARY HEADQUARTERS FOR THE LABORATORY, FOLLOW THE PATH OF THE "DRIVE-AROUND TOUR" MAP BEGINNING AT THE EXHIBIT HALL NEAR THE SANK BOULEVARD ENTRANCE. (SEE REVERSE SIDE)



national accelerator laboratory

Operated by the Universities Research Association Inc.
for the U.S. Atomic Energy Commission.

P.O. Box 500
Batavia, Illinois 60510
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--- PROPOSED PLANS

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NAL Village
Drive-Around Tour

EXHIBIT HALL - 18 Sauk

Open to the public from 8:30 a.m. to 5 p.m. five days a week.

PERSONNEL - 20-22 Sauk

"It will be the policy of the National Accelerator Laboratory to seek the achievement of its scientific goals within a framework of equal employment opportunity and of a deep dedication to the fundamental tenets of human rights and dignity." -- Robert Rathbun Wilson, Director, and Edwin L. Goldwasser, Deputy Director, National Accelerator Laboratory.

FIRST AID - 24 Sauk

MAINTENANCE - 28 Sauk
VILLAGE MANAGEMENT - 29 Sauk

This staff is responsible for the operation of the Village, transportation and telephone services. A Farm Manager, located here, is responsible for maintenance of the site land, other than in the Village proper and the permanent laboratory area.

MAIL AND MOTOR POOL - 30 Sauk

All mail is collected and distributed from this house. The motor pool consists of a fleet of 19 Atomic Energy Commission vehicles for official use.

NAL CONSTRUCTION - 32 Sauk

JANITORIAL SERVICES - 34 Sauk

DUSAF SURVEYING - 13 Neuqua

DUSAF is a joint venture formed for the sole purpose of accomplishing the architectural, engineering and construction management services for the 200 MeV accelerator.

The main offices are presently located in Hinsdale, Illinois; the construction management office is on the site where the permanent construction is now taking place; and the DUSAF SURVEYING office that provides contractors with the initial siting of all building locations for the permanent laboratory is located here.

BEAM TRANSFER - 18-20-22 Neuqua

The Beam Transfer Section is responsible for developing facilities for extracting the 10 BeV (billion electron volts) beam from the booster and injecting it into the main accelerator (see Booster and Main Ring below) and then again for carrying the 200 BeV beam from the main ring to the target stations.

BOOSTER - 26-28-30 Neuqua

At this location in the Village the Booster Section has its offices, technical shops, laboratory and Booster Prototype Enclosure. The Booster Prototype, located in an extension of the Booster laboratory building, is a full-scale model of a section of the booster accelerator as it eventually will appear. The prototype will be 75 feet long and will contain four magnets.

The Booster Section is responsible for developing the Booster synchrotron, a rapid-cycling accelerator that is approximately 500 feet in diameter. It will accelerate protons to 10 BeV at the rate of 15 pulses per second. The protons will be injected from the linear accelerator (see Linac below) at 200 MeV (million electron volts).

COMPUTER - 25 Neuqua

Computing facilities are coordinated through the Accelerator Theory Section (see below). Present facilities consist of a remote terminal linking NAL with the Courant Institute at New York University. Soon, a second remote terminal will be installed, and it will link NAL with the computer system at the Argonne National Laboratory, about 25 miles southeast of the Village.

FIRE POOL - (across Potawatomi from Computer)
 Water supply in case of fire.

NAL SWITCHBOARD - 22 Potawatomi

RADIATION PHYSICS - 17 Potawatomi

The Radiation Physics Section is composed of two groups: the physics group which directs the control and monitoring of nuclear radiation inside the accelerator enclosure, and the safety group which is in charge of the problems of insuring safety for any personnel who may be exposed to radiation.

PURCHASING - 13 and 18 Potawatomi

ACCOUNTING - 11 Potawatomi and 8 Shabbona
AEC COMPLEX - 2-4 Shabbona

Offices of the United States Atomic Energy Commission's 200 BeV facility staff.

21 SAUK

For teas, luncheons, and meetings.

RECREATION - 6 Che-Che Pinqua

Here are pool tables, ping-pong and shuffle board for employees on off-duty hours.

CAFETERIA - 8-10 Che-Che Pinqua.

Open from 8 a.m. to 5 p.m. seven days a week equipped with food vending machines. Lunch is served from 11:30 a.m. to 1 p.m. five days a week.

EXPERIMENTAL FACILITIES - 22-24-25-27-29-31-33 Blackhawk

The assignment of the Experimental Facilities Section is to design, construct, and operate the 200 BeV proton beam target stations, the facilities for secondary particle beams produced at the targets and facilities for the conduct of research experiments. Most physics experiments will be concerned with the production, properties and behavior of secondary particles produced in the bombardment of these targets. The plan for the Experimental Facilities area will undergo continuous review over the next several years by both NAL and university physicists to provide a final layout responsive to new developments in both physics and instrumentation.

STOREROOMS - 35 Blackhawk and 33 Shabbona

These houses stock office supplies, safety equipment, hardware, photographic, electrical, electronic and janitorial supplies.

DIRECTORS' COMPLEX - 28 Shabbona

Located here are: DIRECTORS' OFFICES, OFFICES FOR EACH SECTION LEADER.

REPRODUCTION FACILITIES. Duplicating and micro-filming equipment are available here to NAL personnel.

LIBRARY. The library contains a collection of material on the design and construction of accelerators and material in the high energy physics field. The Laboratory's slide collection is located here also.

ACCELERATOR THEORY.

The Accelerator Theory Section is staffed by theoretical accelerator physicists performing various theoretical analyses and computations for the design of the 200 BeV accelerator.

PLANNING & SCHEDULING. Through the preparation of plans and schedules, the programs of the Laboratory are projected in time, and an evaluation of progress toward goals is made possible.

UNIVERSITIES RESEARCH ASSOCIATION FIELD OFFICE. The URA is a consortium of 50 major universities (49 across the United States and one in Canada). NAL is operated by the URA for the U. S. Atomic Energy Commission.

CONTRACTS. This office is concerned with the administration of contracts.

CURIA.

A meeting place and lecture hall.

SITE PLANNING RADIO FREQUENCY - 35 Shabbona

In the buildings of the Radio Frequency Section, there are a machine shop, welding area, and offices. Components for the RF Section also are tested in this area.

The RF Section is concerned with providing the radio frequency power for acceleration of the particles in the booster and the main accelerators. The rf accelerating system of the main synchrotron has a total of 16 resonant cavities concentrated in the long straight section immediately upstream from the proton injection point.

The rf system for the booster consists of 18 cavities distributed in straight sections around the synchrotron ring.

MODEL SHOP - 37-39 Shabbona

The Model Shop is responsible for construction of models of technical components of the Laboratory and for development of display models.

TECHNICAL SERVICES - 39 Shabbona

This service includes drafting,

machine, and model shops, as well as an Engineering Department which provides assistance and advice concerning problems of acquisition, installation and inspection of technical components.

MACHINE SHOP - 32 Winnebago

LINAC - 27 Winnebago
 The Linac complex in the NAL Village is the headquarters for the Linac Section. It is designing, developing and constructing the 200 MeV linear accelerator.

NAL's first permanent building, now under construction near the western boundary of the NAL site, will house the linear accelerator. The Linac will give the protons a boost in energy that will take them to 200 MeV (million electron volts), one-thousandth of their ultimate energy in the NAL accelerator system. No proton linear accelerator of an energy as large as 200 MeV has been operated as yet.

UTILITY BUILDING AND ENCLOSURE PROTOTYPE - east of Linac)

The utilities for the main accelerator will be distributed through 24 utility buildings spaced uniformly along the inside perimeter of the ring. This building is the prototype of the 24.

These buildings, each about 2,000 sq. ft. in area, will contain the magnet power supplies, cooling water pumps and heat exchangers, vacuum-pump supplies, ventilation equipment and circuitry for control multiplexing and transmission.

AIR BUILDING - 34 Shabbona

With 0.05 pounds per square inch inflation pressure, this building contains a technician shop and laboratory facilities for the Main Ring.

PROTOMAIN - (south of Air Building)

Ten sections, or magnet lengths, of the Main Accelerator are being constructed here and

will be used to work out equipment layouts and installation procedures for the main accelerator. This structure is 200 feet long.

MAIN RING - 36-38 Neuqua

At this location in the NAL Village, the Main Ring staff is quartered. These men are concerned with the design, development and construction of the main accelerator. The laboratory building has facilities to test components and materials to be used in the main ring construction.

The main accelerator (or main ring) will be a synchrotron of 6,562 feet (1.24 miles) diameter. The protons will be injected into the main accelerator at 10 BeV (billion electron volts) and accelerated in this final stage to full energy. Initially, this energy will be 200 BeV, but more power supplies can be added later to increase the accelerator's peak energy to more than 400 BeV. After reaching maximum energy, the protons then will be extracted and transported to experimental areas.

DUSAF LIAISON AND WM. BROBECK - 21 Shabbona

In this office four DUSAF personnel serve as liaison between their firm and the NAL technical sections.

Wm. Brobeck is a consulting engineering firm in advanced electrical and mechanical design for particle accelerators.

BUSINESS OFFICE - 12 Shabbona

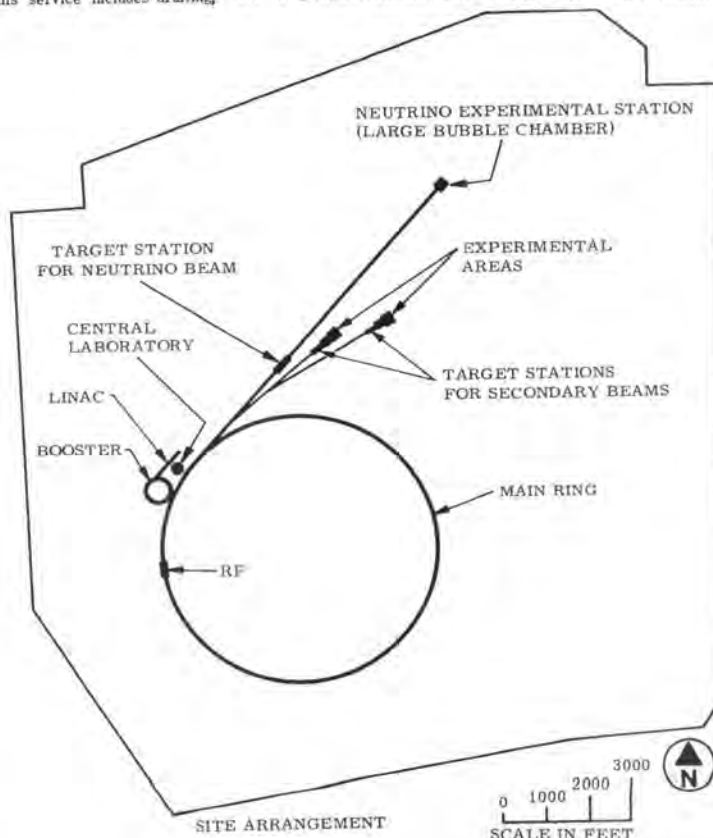
Office of the Director of Business Administration.

LEGAL - 10 Shabbona.

PUBLIC INFORMATION - 16 Sauk

EMPLOYEE SERVICES AND PHOTOGRAPHER - 14 Sauk

Fox River Valley information and NAL social activities information for employees are available here. Also housed at this address is the NAL photographer, his dark room and film library.



NAL May Build More Than an Accelerator

by Jo Gustafson
Beacon-News
Staff Writer

The title of the man at the desk reads "Equal Opportunity and Community Relations officer for the National Accelerator Laboratory."

Kennard R. Williams, the man behind the desk, doesn't wear this title with formality. He has managed to take over a job that deals with the controversial topic of the times-human relations with a simple kind of philosophy and dedication that could really shake up the present exponents of "protest and demonstration" techniques.

Reprinted with permission from the January 12, 1969 Edition of the Aurora Beacon-News.

The National Accelerator Laboratory (NAL) is where the atomic accelerator will be built. Williams feels that there can be much more built than "just an accelerator."

"If we don't accomplish more than that," he says, "we have missed the boat."

"The money for this project, which will be spent one way or

another, can be put into the hands of many people who need to know how important they are to the growth and development of this country.

"Everybody goes around in circles about the subjects of rights, minority groups and human relations," says Williams, who has the feeling that if anyone can tangibly help solve some of these problems, it will be industry.

With this in mind, part of Williams' job is to encourage NAL and AEC people to give advance notice of their needs for construction so that he and his staff can search for qualified small businesses and industries that may have been part of the big picture of discrimination in any way and offer them a chance to participate in this project.

So, the man behind the desk is not behind that desk very much. His operations take him all over the country.

While he's turning the building of the accelerator into the building of people too, his job takes him many places.

"Even though we search for minority contractors with the thought of promoting good hu-



Kennard R. Williams

man relations, we do keep good business in mind too so we can keep costs within reason for this project," says Williams.

"When we find these people we request bids for their work, and, if in some cases they don't receive contracts, due to high bidding, which is natural in the

case of many small contractors, we go over their contracts to help them understand details in good prices in the submission of bids. We continue to request and encourage them to bid competitively on NAL contracts.

"At this time we are engaged in canvassing the whole country in search of these minority man-

ufacturers. We visit their plants, discuss their providing materials and services for the NAL and they in turn visit the NAL site. Members of these minority companies discuss potential contracts with our engineering staff while they are here and have been briefed on submission of bids with our purchasing administrative section.

"We have to open some doors for the people who have been victims of discrimination in many forms. They need a chance to grow with dignity, develop their talents and become important people not only in their own eyes but in the eyes of others in the worlds of business, science and industry.

"You just have to 'say it like it is.' While we are building an atomic accelerator we have a chance to think of more than just that. If we don't give more than 'construction and completion' to this project we've missed an opportunity to do something about this human relations bit and it could do a lot for the future problems that we face."

The NAL official policy states: "In any conflict between technical expediency and human rights we shall stand firmly on the side of human rights. This stand is taken because of, rather than in spite of, a dedication to science.

"Because of this type of dedication," says Williams, "we could not conceive not using the building of the 200 BEV to help develop new, and assist established minority contractors."

AEC Sponsors Manpower Survey

How many scientists and engineers will be needed in the rapidly growing nuclear industries in the next decade? Are there enough courses and training programs to meet the skilled and technical manpower requirements in the national atomic energy programs?

To find the answers to these and other questions, the U. S. Atomic Energy Commission has awarded a \$35,000 contract to the American Nuclear Society, of Hinsdale, Ill., to carry out a national nuclear manpower survey. ANS is collecting statistical data through more than 80 in-depth interviews with 70 companies in the nuclear industry. The Society is attempting to assess the demand for nuclear trained scientists, engineers, mathematicians, technicians and nuclear reactor operators and the state of current educational efforts in the field.

ANS is carrying out the survey in association with the American Society for Engineering Education. The work is sponsored by AEC's Division of Nuclear Education and Training and is being administered by the AEC's Chicago Operations Office under Kenneth Dunbar, manager.

Arbor Day Humor

Overheard at the NAL Arbor Day tree planting party: While working extremely hard to dig a deep enough hole for his tree, one would-be horticulturist was heard to exclaim: "I'm sure that the Lord didn't do it this way."

NAL May Fete

A May Fete, sponsored by NAL will be held Friday evening, May 16, from 9 p.m. to 1 a.m. in the NAL cafe with Bernard Lensmeyer, Personnel, in charge of activities. Music will be by: "Members of the Bar."

Marofske, Lee Visit Trainees At Oak Ridge

OAKRIDGE, Tenn. - The 22 young men from the Chicago metropolitan area taking part in a new training program for the National Accelerator Laboratory recently were visited by representatives of NAL and DUSAF.

Charles F. Marofske, NAL personnel manager, and Malcolm Lee, of DUSAF, visited the site of the group's training at the AEC's Y-12 plant operated by the Nuclear Division, Union Carbide Corporation in this atomic energy research and development center.

The NAL program is designed to train unemployed and underemployed minority group members to fill skilled jobs at the NAL village. The pilot program, for the first time, links the efforts of two AEC operations to train disadvantaged men. The program is being supported through an inter-agency agreement between the AEC and the U.S. Department of Labor.

Most of the youths are more than one-third through their training.

Training and Technology Program - Representatives of NAL and DUSAF visit NAL trainees at Oak Ridge, Tenn. Here, upper photo, (left to right), Malcolm Lee, of DUSAF, and Charles Marofske, NAL personnel manager, watch as two trainees - Jeffery Ruffin (standing) and Elbert Smith (seated) - study an electronics problem presented by their instructor, N. E. Morgan (standing, right).

In TAT SHOPS-Trainee Nelson Sample, of Chicago, in lower photo, is at work in the TAT project machine shop at Oak Ridge as (left to right) Charles Marofske, NAL, Tom Allen Training and Technology project staff member, and Malcolm Lee, of DUSAF, watch.



Harold Ticho To Head NAL Users' Group



Harold K. Ticho

The election of Harold K. Ticho as Chairman of the Executive Committee of the National Accelerator Laboratory Users' Organization took place at the February 2, 1969, meeting of the group's Executive Committee.

Ticho is a professor of physics at the University of California, Los Angeles. He also has been chairman of the Physics department there since 1967.

In a letter dated March 5, 1969, to members of the NAL Users' Organization, Ticho announced also the election of six more members to the group's executive committee.

The new members are D. B. Cline, of the University of Wisconsin; M. Derrick, of the Argonne National Laboratory; A. Pevsner, of the Johns Hopkins University; V. L. Telegdi, of the University of Chicago; D. H. White, of Cornell University, and S. G. Wojcicki, of Stanford University.

They will join the following on the users' executive committee: D. Keefe, of the Lawrence Radiation Laboratory, Berkeley, Calif.; A. D. Kirsch, of the University of Michigan; J. R. Sanford, of the Brookhaven National Laboratory, Long Island, N. Y.; A. Wattenberg, of the University of Illinois, W. Willis, of Yale University, and Ticho.

There are nearly 1000 members in the NAL Users' Organization, which is composed of physicists interested in the development of the facility and in the possibilities of conducting research at the National Accelerator Laboratory when it is completed.

Ticho joined the UCLA faculty in 1948 after receiving three degrees from the University of Chicago--his bachelor's, master's and doctoral degrees.

He also has been a member of the scientific policy committee for the Stanford, Calif., Linear Accelerator. His academic field of special interest is elementary particle physics. He has been the author or co-author of many papers concerned with research in this field.

Nixon Names Thompson

President Nixon has announced the appointment of Theos J. Thompson, of the engineering faculty at The Massachusetts Institute of Technology, to fill the unexpired term of Gerald F. Tape as a member of the U. S. Atomic Energy Commission. The term expires June 30, 1971.

The Economic Side

There is a money tree among those planted on Arbor Day by the NAL family. It is in the northwest corner of "Wilson's Woods" and it was planted by the Accounting Section. Can you find it?

USAEC 200 BeV Accelerator Facility Office Notes

by Minerva Sanders

The roads leading out of Illinois have been pretty busy lately due to our early vacationers: Mr. & Mrs. K. C. Brooks and their son, Andy, took a short trip to Clanton, Alabama to visit relatives...Mr. & Mrs. John Ryan have just returned from visiting their daughter, son-in-law and grandchildren in Richland, Washington. Mr. Ryan also managed to slip away to Seattle and catch a White Sox ball game... Ruby Bland is in Memphis, Tennessee, visiting her sister and other relatives. Hurry back Ruby --- your files are waiting.

Louise Schusler has joined the staff of the 200 BAF and is currently working in the office of the Area Manager. Louise, the mother of five children and thirteen grandchildren, decided to put up her aprons and resume her "working girl" status. Welcome aboard Louise.

If you should happen to see Ron Zeidler strolling around with that "proud dad" look, it's because his son, James Kurt, (5th grade) has made the Honor Roll at school. James attends the Ludwig School in Lockport. Keep up the good work, James.

Latest word from Linda Weinberg, who turned her mini skirts for a Wave uniform last fall, is that she's having a "swinging time" in Norfolk, Virginia. Linda has been very faithful about writing to us to let us know that she hasn't forgotten her old friends. We all wish the best for Linda.

The 12th Annual Federal Employee of the Year Awards Program for the Metropolitan area will be held Wednesday, May 7, in the Conrad Hilton Hotel, in Chicago. Ninety-two nominations have been submitted by area federal agencies in four award categories; outstanding professional employees, outstanding federal employees, outstanding supervisory employees, and suggester of the year.

Among those competing for an outstanding professional employee award will be our Area Manager, Kennedy C. Brooks, who has over 34 years of service with the Government. Mr. Brooks will be competing with persons from a wide variety of professions and sciences, including such fields as: biological sciences, medicine, physical sciences, mathematics and statistics, law, engineering, architecture, social sciences, and accounting.

Congratulations Mr. Brooks--We're all hoping that you'll walk away with the award.

We send out get-well wishes to John Legerski of our Engineering staff.



Kennedy C. Brooks



PLANNING SEMINAR: Edwin L. Goldwasser, NAL's Deputy Director, (second from left) looks over a map outlining recreational land use policy for the NAL region. With him are (left) Marvin Chandler, Chairman, DuKane Valley Council; Arthur Swanson, who is completing his term as Mayor of Batavia, and Walter Monash, a regional planner on the staff of Barton and Aschman Associates, which is advising Batavia.

DuKane Valley Council Holds Planning Talks

A two-day planning seminar concerned with the area surrounding the National Accelerator Laboratory's site was held April 14 and 15 at the Holiday Inn in North Aurora. It was sponsored by the DuKane Valley Council.

Planners representing the various cities, towns and villages in the general area of NAL presented their concepts of what might and what should happen in the development of the region.

Marvin Chandler, chairman of the council, said that initial recommendations for the use of land within a two-mile area of the Laboratory site were presented to the group for discussion.

The land-use study is being made by the Real Estate Research Corporation, of Chicago. Areas included in the study consist of portions of both Kane and DuPage Counties, and the municipalities of Aurora, North Aurora, Batavia, Geneva, West Chicago, and Warrenville.

Ray C. Dickerson, director of the Illinois department of business and economic development, said that "the mayors and county board chairmen are to be complimented on their efforts in this first bi-county planning attempt in this area."

Chandler said that a final recommendation on the land-use in the so-called two-mile "doughnut area" around NAL would be presented to the Council sometime in May.

The DuKane Valley Council is a group composed of public officials of 14 communities in Kane and DuPage counties and also of leaders from the private sector in this region. Charles H. Schrader of the Northern Illinois Gas Company, is secretary of the DuKane Valley Council.

A series of special maps developed for the seminar was used in the presentations. Discussions were centered about the need for high intensity, low intensity and special use areas in the Fox River Valley region.

Among those who represented NAL at the seminar were Ivan Alten, chief planner, DUSAF; Edwin L. Goldwasser, deputy director of NAL, and Donald Getz, assistant director of NAL. Louis Groeniger, of the Chicago operations office, U.S. Atomic Energy Commission, also was present. James D. Roesta, Anton Campen and Peter Milanowicz of DUSAF, also attended the sessions.

DUSAF: Master Planning

by Ivan Alten

DUSAF has five technicians working on the Master Plan for the whole Accelerator site while simultaneously promoting and cooperating with the efforts of city planners of the towns and villages surrounding the site. Warrenville, Aurora and North Aurora, Batavia and Geneva, and the West Chicago planners, stimulated by the potential created by the laboratory, are busily developing a plan for unified land use for the whole area. DUSAF planners are interested that roads leading to the accelerator pass through pleasant, clean and well-organized towns. We are also interested that the entire region should grow without jarring honky-tonks next to our entrances, or expensive apartments or hotels which might go bankrupt in a short time because nobody could figure in advance the real needs for such new improvements.

What we do within the site boundaries influences what happens outside the site--and the same is true in the reverse. If the planners are successful in achieving their objective when the accelerator is built, all will look as if there just couldn't have been any other place in the whole nation to build this "International" Accelerator Laboratory. In such a way the whole area will become a logical extension of the past.

The State of Illinois is working up a "doughnut" plan, where the "hole" in the doughnut is the 6800-acre Accelerator site and the surrounding "dough" is a 2-to-3-mile ring of communities. There is a good chance that harmony can be established between the needs and desires all around since usually the hole in the doughnut is the most important thing.

NAL is an instrument, and how successful it will be will depend upon the people who will operate it. The calibre of the people who will be attracted to run the instrument will be chiefly governed by the surrounding communities. Ugly and dull towns will attract ugly and dull people; neat, vibrant communities become homes to neat and vibrant people. Thus, it is a joint responsibility of NAL and the neighboring towns to chart a future for the whole region which will benefit all.

DUSAF PERSONALS

The following two wedding announcements were omitted from last month's publication:

John Ingebretsen took Melinda Rieseke for his wife and Gil Nero took Carol Marbet for his wife.

Congratulations to Ken Donoghue and his wife on the birth of a boy, Timothy Mark, weight 7 pounds.

We wish Bob Keely a speedy recovery. Bob had surgery and is home recuperating.

George Sautter and his wife took a week's vacation and motored to White Plains, New York, to attend the wedding of their son Peter.

Marshall Smith took a trip to Washington, and

Mike Bobick visited his old Marine Base Headquarters in Virginia during the weekend of April 5.

Geno Loro, Don Lianza and Peter Milanowicz are entering the NAL Art Exhibit on April 17.

Dolores Mullins transferred to our Hinsdale office from the field, (guess Dolores didn't like getting her shoes muddy). Ken Jader transferred from the Hinsdale Office to the Field--hope he likes the rugged life.

Historical Notebook

by Gloria Moore

Those of you who commute every day between Chicago and The Village cannot fail to have moments of irritation at spending 45 minutes to an hour each way. Perhaps the following train schedule might make you feel a little better:

November, 1850
Leave Aurora 7-3/4 o'clock a.m.
Arrive Chicago at 11-1/4 a.m.
Leave Chicago at 2-1/2 p.m.
Arrive at Aurora at 6 p.m.

Those trains were really primitive too. The locomotives were wood burners necessitating long low sheds filled with wood at every stop. Frequently the passengers would help the fireman and the crew throw on the fuel supply to keep the boilers going. Moreover, the rails were strap rails, metal strips nailed along wooden planks that would come loose sometimes, curl up, and come through the floor of the coach.

April 10, 1969-

Following are the remarks of Gov. Richard B. Ogilvie, of Illinois, at the site conveyance ceremony:

This is an auspicious occasion. We have reached the end of the first step in a bold scientific journey. We are bound for a destination which is still out of sight over the horizon of time and undiscovered nuclear knowledge.

As a relative newcomer to this exciting adventure, I am delighted to share this happy occasion with those of you who have done so much to make it possible.

Many people have brought us this far on our journey. Four years ago this month the United States Atomic Energy Commission announced its plan to embark on this project. Since that time it has involved the dedication and labor of hundreds of political, business, scientific and civic leaders, many of whom are here today.

Governor Kerner and Director Graves developed and cleared the way for the proposal which led to the ultimate selection of the site in DuPage and Kane Counties.

Mayor Daley's committee on economic and cultural development, along with several Illinois-based organizations and businesses, joined in undertaking the study which augmented the case for Illinois.

Interest Widespread

Public officials from communities in the area surrounding the site gave their enthusiastic endorsement to the plan and offered complete cooperation. Members of Congress, especially John Erlenborn, John Anderson and Melvin Price, helped smooth the way in Washington. Leading educators and businessmen by the dozen offered their support and assistance at every step of the way.

Dr. Seaborg and his colleagues on the Atomic Energy Commission have provided firm guidance and friendly cooperation from the inception of the project.

"Community Venture"

In every sense, this has been a community venture. It has enjoyed the best efforts of political leaders from the Mayor of Chicago to the Mayor of tiny Weston, business leaders from the presidents of Chicago's largest banks to the owners of neighborhood grocery stores in nearby Batavia. I salute them all for a job well done.

But to that commendation I must add a word of caution. The job has just begun. It is not for publicity reasons that we have called the occasion for our gathering here today "A New Era for Illinois."

New Chapter in History

This is a beginning. What we celebrate today is not the end of Illinois' participation in this historic project. The past is mere prologue to an exciting new chapter in the history of our state.

The basic elements of this new era have become familiar to most of us over the course of the past four years. The \$250 million facility will employ 2,000



Gov. Richard B. Ogilvie

of the nation's leading physicists and engineers, and attract thousands of additional jobs and add significantly to the economic climate of the entire area.

But the impact on our social and intellectual growth and on Illinois' role in the nation's economy will far surpass the benefits likely to accrue to the communities in the area surrounding the accelerator.

Illinois' Industrial Fame

Illinois' skills as a producer of goods and an industrial giant are well known and amply documented. We lead all 50 states, for example, as an exporter of both agricultural and manufactured products totaling 2.5 billion dollars a year.

Illinois ranks third in the nation in total manufacturing, first in the production of machinery, and second in printing and publishing. We are the third largest producer of livestock and a major mineral producer, ranking fourth in production of coal and eighth in petroleum.

But the day is past when we can rely entirely on our big shoulders, to use Carl Sandburg's famous lines, and on our fame as "tool maker, stacker of wheat, player with railroads and the nation's freight handler."

Challenge of History

History passes by those who fail to adapt to the complexities of the technological age.

Change is all about us, and at times, it seems that change is the only certainty we have. As I said in my inaugural address last January, "The challenge of change is to harness it to bring man into harmony and balance with himself and his world."

Nowhere is that challenge more demanding than in the science of nuclear energy, where the boundaries of our knowledge are expanding at an almost geometric rate.

First Reaction Recalled

Illinois has long been in the forefront of those expanding horizons. It was at Stagg Field on the University of Chicago Campus that the nuclear age was born in 1942 with the first self-sustaining, continuous nuclear reaction. The first and still the largest nuclear power plant for commercial use is operated by Commonwealth Edison Company near Morris, a few miles southwest of Chicago.

And now, the construction of this 200 billion electron volt accelerator is a reaffirmation of that tradition and the confirmation of a little-noticed

Illinois Gives AEC Title For NAL's 6,800 Acres

development in this state's changing economy strength.

The development is making Illinois the research capital of the nation. The launching of this bold project to probe deeper into the infinite reaches of the atom is the capstone of a development which has guaranteed a new era of sustained economic progress.

Already, the Chicago area leads the nation in attracting new research and development facilities. A recent count showed 456 Research Laboratories in the metropolitan area, employing more than 18,000 persons. Many of them, including those of Bell Laboratories, American Oil Company, Quaker Oats, International Harvester and Chemical, as well as the world-renowned Argonne National Laboratory, are locating in the suburban areas ringed Chicago, holding out the promise of unprecedented industrial growth for an area which heretofore has been almost entirely residential.

Academically, Illinois also has established an enviable reputation. A 1967 survey showed the University of Illinois leads the nation in granting doctoral degrees, and one of every six new PhD's receives all or part of his educational training in the state.

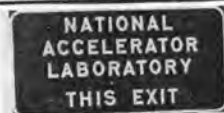
Role of Business

The significance of this leadership is not lost on those businessmen involved in research and development. Our extensive educational system is furnishing them a steady supply of well-trained talent to staff the facilities they are locating here. But it is a fact which is often overlooked because of the severity with which the so-called "Brain Drain" affects the entire Midwest.

Midwestern universities produce some 40 per cent of the nation's doctorate degrees, yet only 25 per cent of them stay to work in the part of the country where they receive their education. Every time one of them moves to New York or California, it has been estimated, the taxpayers lose \$50,000 invested in education. If we are to reverse this exodus of valuable brainpower, we must develop the kinds of facilities which will keep trained men here. I believe we are making significant strides toward that end.

Center for Scholars

University-related research facilities here attract scholars from all over the world. Among these are the Illinois Institute of Technology Research Institute, the Enrico Fermi Institute for Nuclear Studies at the University of Chicago, the Midwest Electronics Research



A NEW ERA FOR ILLINOIS
Title of Plaque passed by Gov. Ogilvie to AEC Chairman Seaborg at luncheon.

Center and Biomedical Engineering Research Center, both at Northwestern University.

Together with government institutions and private laboratories, these facilities are blending efforts in the areas of pure science, applied technology and manufacturing research into an effective force for the advancement of industry and society. They provide a vast interdisciplinary pool of knowledge on which Illinois industry, both present and prospective, can draw for decades to come.

Impact Brings Responsibilities

The impact of science in the past two decades has imposed heavy new responsibilities on all levels of government. Nowhere has that impact been felt more profoundly than in our state capitals. The drastically-altered relationship between industry and all types of research, both private and federally-financed, has accentuated the role of state government as an economic promoter and coordinator.

One aspect of that role has been demonstrated here in Illinois by the successful efforts of various state officials and agencies in establishing the merits of the site which we are formally conferring to the Atomic Energy Commission today. In addition, the state, primarily under the auspices of the department of business and economic development, has developed a sophisticated program for telling business firms the advantages of locating in Illinois.

State to Continue Efforts

But much remains to be done. And I am here to assure you that this state administration will make every effort to guarantee Illinois' continued leadership in the development of our research capabilities. At this still germinal stage of development, the priorities we establish will chart our course for a generation to come.

In the state budget which I presented to the Illinois general assembly last week, I set forth the priorities which will guide this administration and point the direction of state participation in the foreseeable future.

Higher Learning Priority

I believe it is evident, both in the text and in the figures contained in that document, that we place a high priority on improving the level and the services of our institutions of higher learning. The budget anticipates an increase of \$170 million in this category.

Especially relevant to our concern here today, it represents

is the proposed appropriation of \$65.7 million, an increase of more than 50 per cent, for the state's junior college system, which now services 87 per cent of the citizens of Illinois. In our continuing effort to improve our vast educational system, we must take special care to assure that it is serving the needs of our increasingly technological society.

2-Year Training Programs

In this light, I have urged strengthening of two-year terminal programs tailored to the student who needs job-oriented studies beyond high school and beyond the industrial arts programs of an earlier era. It will be fruitless to continue turning out highly-trained technicians with doctoral degrees unless a parallel educational system is developing para-professionals with the more limited technical skills necessary to provide a comprehensive support capability.

Along these lines, I believe it is also significant that the budget seeks nearly \$70 million, an increase of more than \$21 million, for vocational education and rehabilitation.

State-Federal Aid

In yet another sense, this marks the advent of a new era for Illinois. The close cooperation between the state and federal governments which has made this event possible is a reassuring example of the type of viable federalism which often has been lacking.

The donation of these 151 separate parcels of land to the Atomic Energy Commission represents more than a carrot offered by the citizens of Illinois in return for the reward of an installation that has been called the scientific prize of the century. Indeed, it represents an assumption of state responsibility to share in a partnership for expanding the horizons of scientific knowledge and promoting the economic health of its communities.

Successful Change

And, as I indicated earlier, that responsibility has only begun. As Dr. Seaborg and Dr. Wilson and their colleagues begin the long task of developing the facility which holds so much promise for Illinois, it will require the best efforts of all of us -- elected officials, businessmen, educators and civic leaders to assure its successful completion and operation.

Illinois is meeting the challenge of change. Perhaps no fact better illustrates that assertion than the conversion of 6,800 acres of our fertile land from the most basic of man's endeavors -- the production of life-sustaining food -- to the most advanced -- unlocking the infinite secrets of the Atom.

But, if change is to be helpful to help us, we must continue attracting and developing the intellectual resources and scientific facilities that change demands.

I am confident that the noble adventure on which we embark today will provide the catalyst for that endeavor.



James T. Ramey:

Last December, when I had the privilege of participating in the ground-breaking ceremonies for the National Accelerator Laboratory, I commented on the "I've - been - here - before - feeling" that I then experienced. Some twenty years ago, when I was Counsel for the Atomic Energy Commission's Chicago Office, I worked closely with the then Federal District Attorney Otto Kerner and Congressman Mel Price in obtaining the site for the AEC's Argonne National Laboratory.

It is a great pleasure for me to be here again today, both as a Commissioner and as a legal resident of Illinois, to participate in this ceremony.

I think that we are all conscious of the great scientific importance which the Nation and the world attaches to the accelerator that is under construction on the site which today the State of Illinois is conveying to the Federal Government. It will be one of our most important scientific instruments for many years to come.

TAT Program Applauded

However, the importance of this new Laboratory is not limited to science alone. Both the Atomic Energy Commission and the management of the Laboratory are dedicated to the objective that the construction and operation of the accelerator shall go hand-in-hand with the advancement of human rights.

The Commission applauds the imaginative equal employment opportunity programs of the Laboratory, its contractors, and cooperating unions. As an example, recently 22 young men from the inner City of Chicago were employed by the Laboratory for skilled jobs which they will fill after completing their training at the Training and Technology Program at Oak Ridge, Tennessee. These 22 men are involved in an experimental program to determine the feasibility

of training under-employed or unemployed, disadvantaged youth away from their home surroundings. Today, at the Laboratory site, many young minority men and women are gainfully employed in the planning and construction of the accelerator and their numbers will grow as does the overall laboratory organization.

A Complex Program

I must also note that the overall job of getting the accelerator constructed and operating is far from accomplished. The technical complexity of designing and building such an accelerator continues to be immense; the fast-paced construction schedule will require that substantial funds be appropriated beginning in July of this year; the project has yet to be fully authorized by the Congress; and meaningful jobs, adequate housing and educational opportunities must be provided for minority groups. All of these things must be done if this project is to fulfill the promise it has demonstrated thus far.

In closing, I extend my congratulations to the State of Illinois for its farsighted efforts in successfully competing for the accelerator project and for its completion of site acquisition which we commemorate today. And I wish to commend the Universities Research Association and Bob Wilson and his staff for the auspicious beginnings of the National Accelerator Laboratory. I am sure that with this leadership and if we continue to have the closest kind of Federal, State and local cooperation these challenges can - and will be met and the Laboratory will be the great success we all so much desire. Thank you.



James T. Ramey

Mayor Richard J. Daley:

The following remarks were prepared for Mayor Richard J. Daley, of Chicago, for the April 10 luncheon. They were read, in the Mayor's absence, by Raymond F. Simon, corporation counsel of the city of Chicago:

It is altogether appropriate that this luncheon has the theme "A New Era for Illinois." It occurs to me that we're talking not only about a new scientific establishment in our state but we are talking of a new viewpoint.

Chicago is part of a metropolitan area. What Chicago does affects those in the metropolitan area and the reverse is also true. What happens outside the city can affect Chicago.

Early Site Study

The Mayor's committee on economic and cultural development is entitled to feel some pride in the development at Weston. It was an early study conducted and paid for by the Mayor's committee which led finally to the selection of a site at Weston. We are happy that Illinois was selected among the states for this atomic accelerator laboratory and of course take pride that the installation will be as close as it is to Chicago.

The accelerator is important for a variety of reasons. First of all, and primarily, it will increase our fund of scientific and technical knowledge. What is learned at Weston will be of benefit to everyone since knowledge knows no geographical limits.

Economic Growth

Jobs will be created at Weston which are of value by themselves but have the additional benefit of generating economic growth in the area which will respond to the need for increased services by those employed in the area. The scientific establishment will attract scientists from the country and probably the entire world and so enrich our area.

We anticipate that these

scientists and technical workers will avail themselves of the resources in the Chicago area. We have research firms and foundations in Chicago as well as the resources of outstanding universities, research laboratories and skills which will be in demand for the new scientific community.

The people who come to operate the accelerator and to manage the laboratory will find their horizons are not limited to Weston alone. In the manner of inquisitive seekers after knowledge they will reach out to the surrounding areas and we are confident that their searching will be rewarded in Chicago.

Similarly the scientific and scholastic communities in Chicago will be looking to Weston.

And there will be shared experiences and knowledge.

Cooperation Widespread

The program today offers an example to us of the new way of viewing the world that I spoke of a few moments ago. We have with us representatives from the city, state, and federal governments, from the world of science and the world of business. Working together they are creating the wonders of the world of the future.

A great idea may spring from the mind of a single individual but to transform that great idea into reality takes the unstinting effort of many people, of many different areas of human concern. This certainly is true of Weston.

Speaking for the Mayor and the city, we in Chicago are proud of our contribution to the realization of the atomic accelerator laboratory. We know it will reap benefits for the area in which it is located, for the state of Illinois, for the city of Chicago, for the metropolitan area, and finally for all the citizens in this large area and indeed for all the citizens of the country.

Thank you.

On behalf of the Atomic Energy Commission, I am pleased and honored to accept this plaque symbolizing the transfer of title to the United States Government of the site for the National Accelerator Laboratory.

This symbolic act marks the end of one great effort on the part of the State of Illinois. When the Atomic Energy Commission in April 1965 announced its willingness to consider proposals for sites throughout the United States for the 200 BeV Accelerator, the State of Illinois joined the competition. Ultimately, the AEC received 125 proposals concerning more than 200 possible site locations in 46 different states. For the State this vigorous competition can only mean that the site which the State offered to provide for the facility has superior characteristics and to part with it does represent a sacrifice as the wording on the plaque states.

New Beginnings

However, as it is correct to say that today's ceremony marks the symbolic completion of the State's commitment to provide the site, it is equally correct to say that it marks the beginning of the benefits to the local community, the State of Illinois, the Midwest and the entire Nation that the construction and operation of this large and important scientific facility will bring. I am sure you will find that the Laboratory will be a most worthy institution to have located here so close to Chicago, a city in which so much significant nuclear history has already been made.

In considering the ambivalent posture in which the State now finds itself - being conscious of the loss of these 6,800 acres of good Illinois land, and looking forward to the benefits to flow from this new laboratory - I am reminded of the mother of the bride and the traditional advice which she is always given. Illinois hasn't really lost a site, it has gained a 200 BeV Accelerator!

Cooperation Brings Success

The Atomic Energy Commission, as the Government sponsor of the National Accelerator Laboratory, looks forward to continuing fine cooperative relations with the State and local officials of Illinois in helping to make the National Accelerator Laboratory the outstanding success that we are sure it will be. Thank you.

Donald M. Graham: A Nucleus for Action

Speaking for the Committee, I want to tell you that we are honored to participate jointly with the Illinois Department of Business and Economic Development in sponsoring this very special event to celebrate the acquisition of 6,800 very special acres at Weston.

We are indeed seeing a new era for Illinois unfolding before our eyes. This, as we all know, is not happening without a reason. It could not have happened at all without the mutually supporting efforts of all elements of the Chicago and neighboring suburban communities.

Chicago Met Challenge

A few years from now scientists from all over the nation will be examining nuclear particles in this laboratory and perhaps discovering important new information about the basic nature of matter. But a few years ago the principal challenge facing Chicago and its neighbors was to create a nucleus for action that would lead to a decision to construct the Nuclear Accelerator Laboratory in this area.

Let me review for you quickly how this nucleus was formed and how it was constituted:

A steering committee was organized for the purpose of preparing a proposal to the Atomic Energy Commission advocating Illinois as the site for the accelerator. The group included representatives from the Illinois Department of Business and Economic Development; the Mayor's Committee, then headed by David M. Kennedy, the Chicago Area Research and Development Council, a function of the Chicago Association of Commerce and Industry, and the Illinois Institute of Technology Research Institute.

Preparation of the proposal itself was financed by Commonwealth Edison Company, Northern Illinois Gas Company, Continental Bank, and the Illinois Department of Business and Economic Development.

Leaders United

Subsequently, at the request of then-Governor Otto Kerner, Continental Bank invited about 100 leaders representing all facets of the community to meet in the bank to hear a progress report by the Governor.

In his letter of invitation, the Governor said, "If we are to be successful in our bid for this extremely important facility, it

will take a concerted effort by all segments of our community." Stressing this idea in his talk, he asked earnestly for the continuing help of business, labor, educational and political leaders, and others.

Energy and Talent

And the help was forthcoming - non-partisan, non-factional. Just energetic and talented people, realizing the awesome importance of the NAL facilities and their work to this area, cooperating in common cause.

Open Housing Issue

When the open-housing issue arose, it was faced frankly at the local level, and solutions were proposed. Twelve banks in the vicinity of the Laboratory site testified in letters that loans for housing would be made to individuals on the basis of merit and without regard to race, creed, color, or national origins.

Finally, for the real spade-work, the knowledge and talents of area development personnel from Commonwealth Edison Company, Continental Bank, the Illinois Department of Business and Economic Development, and others were put to work developing data pertaining to the site.

These people also served as tour guides, proudly pointing out to visiting delegations the attributes that qualify this area as the logical location for the Accelerator.

I need not dwell upon the economic benefits that the NAL will bring to this region. I am more intrigued with the prospect of the extraordinary community of scientists, technicians, and supporting personnel that will develop in this area and of the richness in human resources that they will contribute to city and suburbs alike as we live and grow and learn together.

The Mayor's Committee for Economic and Cultural Development is dedicated to this idea. As it seeks to attract desirable businesses and industries, it does not limit itself to Chicago. It has been working and will continue to work for the advancement of the Chicago metropolitan area and the entire state. The phenomenon we are seeing taking place at The National Accelerator site is good proof of that.

And the cooperation we have seen displayed by everyone who had a hand in bringing the Accelerator to Illinois is a fine augury for our mutual future.

We are going to get along well together.



AEC VISITORS — James T. Ramey, a member of the five-man U. S. Atomic Energy Commission, visited NAL in early April. This photo, taken in the Directorate Curia, shows Mr. Ramey (second from right) with (left to right): John G. Erleweine, assistant general manager for operations of the USAEC; Robert R. Wilson, NAL director, and Kenneth Dunbar, manager, Chicago operations office, USAE.



...MONTE CARLO NIGHT — About 250 members of the NAL family attended the Monte Carlo party for the grand opening of the NAL Cafeteria. Here, Charles Marofske, NAL personnel manager, auctions off one of the many prizes to the highest bidder.



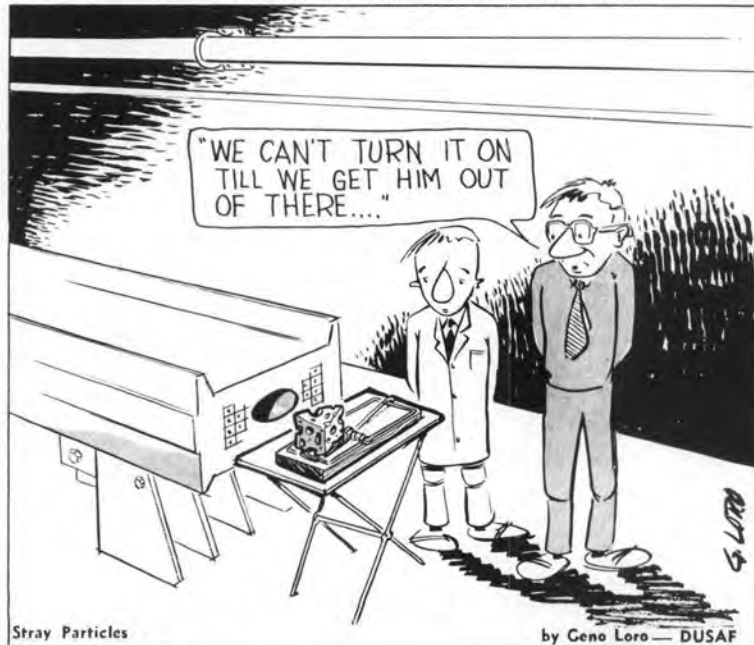
NAL ART EXHIBIT — Scores of paintings, watercolors and sketches by NAL employees were exhibited in the Village Cafeteria during April. Here, Dorothy Poil, Village nurse, describes one of her paintings to (left to right) Greg Thompson, Booster; Mrs. Richard A. Carrigan, Jr., an NAL wife; Bill Pear, Village services, and Bill Tobias, Engineering services.



NALWO Ladies attended a Dutch Treat luncheon at the Pheasant Run Lodge, near St. Charles, April 24. Among those present: (left to right, facing table): Mrs. James A. DeShong, Jr., whose husband is with Experimental Facilities; Mrs. A. Lincoln Read, Experimental Facilities; Mrs. M. Stanley Livingston, Associate Laboratory Director; Mrs. Frank Shoemaker, Main Accelerator.



ARBOR DAY — Nearly 100 trees were planted in the NAL Village on Arbor Day by some 15 employees for what some called "Wilson's Woods" and others referred to as "NAL's Forest." Here two distinguished excavators — Donald Getz, assistant Laboratory director, and Robert R. Wilson, Laboratory director—proudly rest after planting a joint venture titled: "The Directorate." Free soft drinks were served to those who gave of their time and energy to observe the first annual Arbor Day at NAL.



Stray Particles

by Geno Loro — DUSAF

Enrico Fermi: Nobel Laureate Physicist

Enrico Fermi, Nobel laureate physicist who became a member of the University of Chicago physics faculty, was born in Rome Italy, on September 29, 1901. He died in Chicago on November 28, 1954.

The son of a railroad official, Fermi studied at the University of Pisa from 1918 to 1922, and later at the Universities of Leyden and Göttingen. He became professor of theoretical physics at the University of Rome in 1927. Two years later, Fermi was awarded a membership in the Italian academy.

Lead Italian Physicists

Fermi became the leading figure of a group that not only revolutionized modern Italian physics but whose influence has been felt in science and physics throughout the world.

Other members of the group were Emilio Segre, Edoardo Amaldi, Oscar D'Agostino, and later Bruno Rossi. Working with his colleagues, Fermi began the career that led him to equal fame both as a theoretical and experimental physicist.

Other Contributions

Although known today primarily as a leading nuclear physicist, Fermi also made major contributions to the statistics of electron gas, the statistical model of the atom itself, and fundamental contributions to an understanding of radioactivity.

In 1934, Fermi initiated the studies that led to his winning of the Nobel Prize. In that year, he began to bombard atomic nuclei with neutrons. The neutrons were provided by small amounts of the gas radon (produced by radium) mixed with beryllium powder. The radioactive gas gave off alpha particles

which struck the nuclei of beryllium atoms and caused these to give off neutrons.

With extremely simple equipment, Fermi began systematically bombarding the elements in the periodic table, beginning with the lightest element and moving up to the heavier elements. In the process, Fermi and his associates analyzed the chemical end products of the neutron bombardment.

Discovered New Element

When at last they came to uranium, then the heaviest known element, they found that more than one element was produced by the bombardment, and that at least one of the radioactive products seemed to be none of the existing elements close to uranium. In their first report, produced in May, 1934, they did not claim the discovery of a new element, but rather related what indications they had found that such an element might be produced. Actually, they had not produced a new element, but, as later analysis showed, they had split the uranium atoms.

Increased Radioactivity

In a second series of experiments with neutron bombardment, Fermi and his associates discovered that by passing neutrons through other elements they could be slowed down and the amount of artificial radioactivity they produced could be greatly increased. At that time, Fermi and the members of his group obtained an Italian patent on this method. The patent rights were assigned to a friend, G. M. Giannini, in the United States, who applied for an American patent. The latter was granted, after a five-year delay, in 1940.



Enrico Fermi

The status of the patent was not clarified until 1953, when the Atomic Energy Commission awarded the inventors the relatively nominal sum of \$300,000.

First Atomic Pile

Both of these studies of Fermi's were essential precursors of the eventual work that led to the building of the first atomic pile and the first controlled release of nuclear energy.

These studies led to Fermi's receiving the award of the Nobel Prize in 1938. Fermi used the opportunity offered by the trip to Sweden to receive the Nobel Prize to leave Italy. He and his family, which included a daughter, Nella, and a son Giulio, had grown increasingly restive under the Fascist regime.

Professor At Columbia

Fermi came to the United States and accepted a position as a professor of physics at Columbia University. By this time, the work of Fermi had been duplicated in other laboratories

and theoretical analysis of the results had indicated that nuclear fission had actually taken place. As a result, Fermi was chosen by his colleagues to go to Washington, D.C., to interest United States government officials in the possibility of building a nuclear weapon by means of a controllable nuclear fission.

At U Chicago

Unsuccessful in negotiating for support at first, Fermi and other scientists persisted. The project began which was to become the Manhattan Engineering District and produce the first atomic bomb. Working first at Columbia and then transferred to the University of Chicago, Fermi was placed in charge of building the first atomic pile in the squash court under the west stands of the University's Stagg Field. Later he was transferred to Los Alamos, New Mexico, as chief of the advanced physics department. For his bomb work, President Harry S. Truman presented him on March 20, 1945, with a Medal of Merit.

Site of Chain Reaction

The site on the University of Chicago campus where Fermi and his colleagues achieved the first nuclear chain reaction today is marked by a sculpture by Henry Moore titled "nuclear energy." Nearby stands a plaque which reads, simply: "On December 2, 1942, man achieved here the first self-sustaining chain reaction and thereby initiated the controlled release of nuclear energy."

On the tenth anniversary, 1952, Fermi spoke again at a gathering of many of the men who had been in the squash court at the historic occasion.

Later Research

At the war's end, when the University of Chicago decided

to keep together the nucleus of the scientists who had worked in the Metallurgical Laboratory on the campus on the development of the bomb, Fermi joined the staff of the newly-founded "Institute for Nuclear Studies."

After that, he continued his investigations of the nucleus of the atom, concentrating on the nature of the particles that make up the nucleus. Particular emphasis in his investigations was placed upon the short-lived nuclear particles known as mesons.

As an aid in this investigation, Fermi served as a consultant in the design of the University's synchrocyclotron.

After the war, Fermi was active in research conducted at the Atomic Energy Commission's Argonne National Laboratory, located about 30 miles southeast of the NAL site. He was known as a great teacher who helped to stimulate the development of several men and women who have gone on to do significant research in physics at other centers throughout the world. The Enrico Fermi Institute For Nuclear Studies, at the University of Chicago, now is directed by Physicist Robert Sachs, formerly of Argonne.

Dr. Fermi held honorary degrees from the Universities of Utrecht, Heidelberg, Washington University (St. Louis), Columbia, Yale and Rockford (Illinois) College. He was awarded the Franklin Medal by the Franklin Institute in 1947, the Barnard Gold Medal from Columbia University in 1950. In 1950, he was elected a member of the Royal Society of England. He was also a member of the American Philosophical Society, American Physical Society, and Sigma XI.

7th Impact Report Issued

The seventh in a series of reports on the possible impact of the National Accelerator Laboratory on the Chicago metropolitan area has been prepared by the Real Estate Research Corporation.

This volume is essentially an analysis of the cost and revenue implications of urban development related to the establishment of NAL and other catalysts of economic growth in the DuPage and Kane county regions.

Under the heading "Enlightened Leadership," the report states on Page 61.

"The influx of highly-skilled personnel into the (NAL) study area will provide opportunities for all levels of local government to attract such persons into public decision-making functions. For example, many of those associated with the Accelerator will become involved in local municipal and school district affairs. It is conceivable that an ultimate contribution will emerge in the form of higher quality governmental decisions."

The study is being financed by a grant from the U.S. Department of Housing and Urban Development. The federal grant of \$206,740 was matched by \$103,370 in state funds.

The state of Illinois department of business and economic development is providing the findings to enable communities to plan for orderly development as NAL and other research and development-oriented establishments move into the area.

"A New Era for Illinois"

The following is the text of the "New Era for Illinois" plaque presented by Gov. Richard B. Ogilvie to Glenn T. Seaborg, chairman, U. S. Atomic Energy Commission, at the April 10, 1969, site conveyance luncheon:

A NEW ERA FOR ILLINOIS

The people of Illinois proudly present their fertile acres and accomplished talent to the nation for the development of a major laboratory devoted to the peaceful exploration of nature by particle physicists.

Today, April 10, 1969, launches A New Era for Illinois. It marks the birthdate of a period that will encourage the continuing growth of both private and public research centers and industries engaged in modern technology and scientific investigation. This gift of the good land of Illinois to the high energy physics community is symbolic of Illinois' sincere interest in the revelation and communication of new and vital knowledge for all mankind.

The National Accelerator Laboratory will be a significant cathedral for research and learning and an international house for scholars. It promises a firm foundation on which the future of Illinois, and of mankind, can be anchored in an academic as well as economic sense.

Illinois is thankful for this opportunity to serve society. It pledges to be a considerate and thoughtful host to the Laboratory's staff and visitors.

It was with sacrifice to many persons and through cooperative efforts of community and county leaders, state and national authorities, and elected officials at the local, state, and national levels that these 6,800 acres of our most productive land were made available.

It was in Illinois that the first self-sustaining nuclear chain reaction was achieved which ushered in the atomic age and helped secure for the people of the world the benefits of the progress in science and technology. And now a New Era for Illinois begins, offering new challenges for the nation as well as for the state. We are pleased and proud to join in this venture with the United States Atomic Energy Commission.

Richard B. Ogilvie

AEC Gets Land Title

Continued From Page 1

laboratory devoted to the peaceful exploration of nature by particle physicists."

The plaque further declares that the new laboratory will be a "significant cathedral for research and learning and an international house for distinguished scholars."

Spent \$25,500,000

The state of Illinois spent \$25,500,000 to acquire the 10.63 square-mile site for the Laboratory, which had been sought in a nationwide competition by 46 states. Acquisitions of the site, which included the former village of Weston, where the NAL Village now is situated, was completed on March 27, 1969. In addition to the price of the land, the \$25,500,000 figure included expenses for appraisals, negotiations and various site preparation details.

"Transmittal of the property to the Atomic Energy Commission brings to fruition the hard work, sacrifices and contributions of many dedicated Illinoisans," said Governor Ogilvie. "Also, it allows construction of the accelerator laboratory to proceed on schedule," and this will yield significant benefits for the economy of Illinois."

Among others who attended the luncheon were: Congressman Melvin H. Price of East St. Louis, Illinois, a senior member of the Joint Congressional Committee on Atomic Energy; Congressman John N. Erlenborn of Elmhurst whose 14th district in-

cluded the DuPage county portion of the laboratory site; former Illinois governors Otto Kerner and Samuel Shapiro, and Congressman Abner Mikva of Chicago's Hyde Park district.

Also at the speaker's table were Kenneth H. Dunbar, manager, Chicago operations office of the Atomic Energy Commission, and Gene Graves, former director of the Illinois Department of Business and Economic Development and now assistant to the president of Southern Illinois University.

NAL Progress Report

Meantime, as usual, there was a considerable amount of design and construction activity at the Laboratory during the month of March and early April. At the Laboratory's eventual "core" area near the northwestern boundaries of the site, not far from the City of Batavia, work began on the Booster enclosure excavations.

Construction of the Linac building, which began last December with a formal groundbreaking, was moving ahead with the walls of the pre-accelerator house and the floor and parts of the walls of the linac-cavity enclosure virtually completed. And, work on the rough-roads contract was extended across Feldott Road toward Batavia Road.

Work on the Main Ring Prototype Enclosure's structure was nearly complete. One part of the Prototype is of concrete and another section is of corrugated steel. The Prototype is being built in the NAL Village beside the inflatable building.

Meet Your Neighbors - Help for Newcomers

by Janet Read
Employees at NAL live in a total of approximately 70 cities, towns and villages. To help women who are newcomers at the Laboratory become acquainted both with "oldtimers" and with new neighborhoods, NALWO has initiated a welcoming program. The area has been divided into 12 sections, each with a chairman who will, with the aid of volunteers, collect information about her area. She will offer help and advice on community facilities to potential newcomers and answer their questions -- if possible. She will also arrange gatherings from time to time for the women in her area to meet each other.

Following are the Area Chairmen.

Carol Bleser
5555 South Everett
Chicago, Ill. 60637
Phone: 955-9467
(CHICAGO)

Sonia Collins
413 South York Road
Elmhurst, Ill. 60126
Phone: 279-2355
(ADDISON, ELMHURST, LOMBARD, VILLA PARK, OAK PARK & SURROUNDING AREAS)

Lois Livingston
5505 Lakeside Drive, Apt. 2F
Lisle, Ill. 60532
Phone: 971-1706
(NAPERVILLE, LELE & WOOLRIDGE)

Patricia MacLachlan
737 Forrest Ave.
Geneva, Ill. 60134
Phone: 232-2273
(BATAVIA, GENEVA, ST. CHARLES & WAYNE)

Jean Malamud
River Rd., Rt. #1, Box 72
Warrenville, Ill. 60555
Phone: 392-1198
(WARRENVILLE, WEST CHICAGO & WINFIELD)

Judi Martin
557 East 11th Street
Lockport, Ill. 60441
Phone: (815) 838-3148
(JOLIET, LOCKPORT, PLAINFIELD & SURROUNDING AREAS)

Millie Maschke
121 East Prairie St.
Wheaton, Ill. 60187
Phone: 653-6179
(WHEATON, GLEN ELLYN & GLENDALE HEIGHTS)

Susan Stekly
230 South George St.
Barrington, Ill.
Phone: 381-4821
(ELGIN, CARPENTERSVILLE, HARRINGTON & SURROUNDING AREAS)

Sandra Winterowd
2100 Lilac Lane
Aurora, Ill. 60506
Phone: 896-8189
(AURORA, NORTH AURORA & YORKVILLE)

Billie Young
4513 Cornell Avenue
Downers Grove, Ill. 60510
Phone: 969-0750
(DOWNERS GROVE, CLAYBENDON HILLS, WESTMONT, HINSDALE & OAK BROOK)

Two areas remain without chairmen. They are the area south of the Eisenhower Expressway, east of Interstate 294 and

north of the Stevenson Expressway (including the towns of Riverside, Westchester, LaGrange, etc.), and the area south and east of the Stevenson Expressway and east of Highway 45 (including the towns of Oaklawn, Homewood, Evergreen Park, etc.) If you live in either of these regions and would like to volunteer to be an area chairman, please call Janet Read at 653-2295.

Please -- Contact your Area Chairman with suggestions for implementing this program and offers of help!

See Spring at its Best Morton Arboretum

May 15
by Bonnie Hubbard
All NAL Women are invited to meet at the Morton Arboretum Visitor's Center at 1:00 P.M. Thursday, May 15th. If we are lucky, the lilacs will be in full bloom. There are the possibilities of a slide program, walks on the grounds, spring flowers, a bus ride (50¢ per person), and visiting the Ginkgo Tea Room. Be sure to dress for outdoor walking. If you can, come early -- bring a picnic lunch -- and meet at the picnic area. For further information, phone: Bonnie Hubbard 469-8037.

Bon Vivant Dining Club

by Rosemary Billings
The next dinner will be held at Biggs Restaurant, 1150 North Dearborn, Chicago, Illinois. It will be on May 10th at 8:00 P.M. This restaurant is reputed to be one of the best in Chicago. The cost will be \$8.50 per person, plus gratuity and tax. The menu is as follows:

- Appetizer: Coquilles de Seafood a la Mignon
- Soup: Soupe de jour
- Entree: Tournedo of beef Mascotte Potato and vegetable of the day
- Salad of the Season
- Dessert: Bavarian Mousse with rum sauce, Fresh fruits, and Chocolate truffles
- Coffee or Tea

Please give your reservations to Rosemary Billings, Phone: 469-9093. Again, 15 couples will be the maximum.

NALWO Activity Groups

by Nancy Carrigan
BRIDGE - The ladies bridge group has had monthly meetings with two tables. More players may still join. The beginner's group meets at 9:30 each Monday morning. For more information on these, or couple's bridge, contact Ruth Shoemaker, 469-7592.

GOURMET - Fourteen met for dinner at the Kinkel's on April 19th. The typically American Dinner was a great success. Call Marilyn Kinkel, 654-1087, for information on the next event.

HAND ARTS - The last meeting was held at the home of Ayler Atac. She learned the technique of Batik in her native Turkey, and taught it to the group.

LITERATURE - Come to the meeting May 13th at 1:00 P.M. in Building 70, 21 Sauk Blvd, prepared with ideas of books you would like to discuss in the fall.

The chairman of this lively group is Betty Snowdon 665-4691.

MUSIC - The last meeting was held on April 16th at the home of Sherrol Shea. Gregorian Chants were studied through records and books, and played on the Recorder.

SPORTS & NATURE HIKES - Sunday, May 25th, we will visit Johnson's Mound Forest Preserve in Kane County. This is the site of the Shabbona Elm 36 feet around at the base and 350 years old. Johnson's Mound is directly west of the town of Geneva on Hughes Road (East of Ill. Rt. 47, west of Bunker Rd.). Meet at 1:00 P.M. at the Pavilion for picnicking, hiking, and family fun. For more information, call Bonnie Hubbard 469-8037.

If you have any ideas or questions about any Activity Group, call Nancy Carrigan at 653-2269, or write her at 1703 E. Illinois St., Wheaton, Illinois 60187.

5 Scholarships Offered NAL, URA Families

Five scholarships will be awarded to the sons and daughters of employees of the National Accelerator Laboratory and the Universities Research Association, Inc., in the next several weeks.

Charles F. Marofske, personnel manager at NAL, said that this is the second year of the Universities Research Association scholarship program.

The scholarships provide a maximum of \$1,200 a year toward tuition and fixed fees. They are renewable on an academic calendar basis for four years.

Marofske said that only students entering their freshman year of college in 1969 are eligible for the grants. Children of all NAL and URA employees are eligible. Candidates must be enrolling at an accredited school in a scholastic program leading to a baccalaureate degree.

This year's competition closed April 21. Candidates must provide various test data and evidence of a plan to enroll at a university or college.

Weight Watchers Report: The cafeteria management reports that it sells very little skim milk although it receives eloquent requests for it. Chocolate milk is the best seller.

New Insurance Benefits For NAL Employees

NAL employees interested in the recently-announced new extended life insurance benefits for their families are requested to visit the Laboratory's Personnel office to fill out the proper forms. This appeal has been made by Charles F. Marofske, Laboratory personnel manager.

He announced that the Laboratory had liberalized its Group Life and Medical programs with the Connecticut General Life Insurance Company, effective April 1, 1969.

One major new benefit, he said, is the availability of life insurance protection for the members of NAL employees' families.

Under the new death benefit provision, the following amounts will be paid to a family in the event of death from any cause while the insurance is in effect:

- Wife or husband \$2,500
- Children over 14 days but under 6 months 100
- Unmarried females over 6 months but under 18 years of age and unmarried males over 6 months but under 21 years of age 1,000

The exchange privilege of the life insurance program provides that if employment at the Laboratory is terminated for any reason, the life insurance on spouse or children will be continued for 31 days. During this 31-day period employees have the privilege of exchanging the life insurance on spouse or children for an individual policy in accordance with the "Conversion Privilege" described in their certificate. This conversion privilege is also applicable in the event of the death of the employee or when

the children of an employee reach the age of 18 (female) or 21 (male), if insured. No medical examination will be required. The monthly cost will be \$1.00.

This dependent group life insurance is available to any employee who has supplement one or two life coverage, Marofske said. Employees can check their eligibility by reading the insurance certificate issued at the time of hire. However, a visit should be made to the Personnel office to complete the proper forms.

Marofske said that the cost of NAL's employee Group Medical Plan coverage is paid by the Laboratory in full. For those who have the family plan in effect, the Laboratory pays one-half of the premium. Added premium charges for the increased benefits will raise the employee's cost for family plan from \$9.60 per month. In spite of rapidly increasing hospital costs, NAL's basic Medical Plan costs have remained constant due to excellent experience and the growth of the group, he said.

There are a few employees who have not taken advantage of both Supplement One and Two. For those few, special arrangements have been made with the insurance company whereby these employees may apply and complete a statement of health for consideration for this additional coverage, Marofske said.

There are also improved medical benefits: maternity and obstetrical benefits (as described in the coverage booklet), increased to \$250 and major medical coverage expanded to include Caesarean section.

Village Nurse Warns NALites of Spring Colds, Flu

by Dorothy Poll, R.N.

Spring flu-colds are appearing with increasing frequency in the Village. To ward off these colds, get plenty of sleep and an adequate diet, if you succumb to an upper respiratory infection, stay in bed and force fluids.

The First Aid department currently has nine employee physical examinations scheduled, a real reduction in "backlog." New employees are now being examined on the day of hire or during the first week of employment.

NAL employees will shortly be offered annual physical examinations.

Lab physician Dr. Robert Cor-

nell recently returned from the University of Indiana where he attended a seminar on cardiology. An electrocardiograph has been added to the equipment in the NAL First Aid Building.

The following persons will be attending the First Aid seminars offered by the Red Cross: Greg Urban, Bob Scherr and Dorothy Poll.

Following completion of the classes, each will receive an instructor's card, authorizing the teaching of Red Cross first aid classes. The classes will then be offered to interested persons and will be given on the NAL campus.



A SWIMMING TIME: The second NAL family swim night will be held Wednesday at 7:30 p.m., May 14 in the Marmion Military Academy's impressive natatorium on Butterfield Road, near Eola Road. Spectators are welcome: children must swim and women and girls must wear swim caps. There is no charge. Please notify Mrs. Gloria Moore, Perronnel, if you plan to attend. This photo was taken at the first NAL swim night, and shows (left to right) Gayle Norley, village services, and guest: Robert Wagner, DUSAF; Jeff Cannon, Booster, and Girhar Bajaj, Main Accelerator.

New Faces In NAL Village

Brief biographical summaries of employees hired during the month of March, written by Mrs. Gloria Moore, Personnel:

GEORGE H. BIALLAS of Chicago, Ill. is a new Engineer with the Main Accelerator division. Mr. Biallas received his B.S. in mechanical engineering from the University of Illinois in 1966. He is presently working toward his M.B.A. at the University of Chicago Graduate School of Business.

RONALD W. FAST, Physicist, Experimental Facilities, will soon be moving his family to this area from their home in McFarland, Wisconsin. Dr. Fast received his B.S. in 1956 from Washington & Lee University, M. S. in 1958 from the University of Virginia and his Ph.D. in physics in 1960 from the University of Virginia.

JAMES V. GIANUKOS, Engineer, Tom Collin's Office, resides in Morton Grove, Illinois. Mr. Gianukos attended the Illinois Institute of Technology, receiving his B.S. in mechanical engineering in 1957 and a B.S. in electrical engineering in 1965. He is presently working toward a B.S. in math. Mr. Gianukos is a member of the National Society of Professional Engineers.

WARREN L. GOTTWALD of Plainfield, Illinois is a new Contract Administrator with Contract Administration. He received a degree in pre-engineering from Lyons Township Jr. College in 1958.

ROBERT G. HARING is a new Draftsman with the Beam Transfer division. His Associate in Applied Science (electrical technology) degree was received in 1964 from the Agricultural & Technical Institute, Alfred State University of New York. Mr. Haring is a resident of Aurora, Illinois.

MRS. JOYCE HUGGINS joined the Village Services division as Switchboard Operator. She attended school in Eau Claire, Wisconsin, and resides in Batavia, Illinois.

EDWIN J. JARMAN, Technician, Beam Transfer, lives in Aurora, Illinois. Mr. Jarman completed his apprenticeship as a machinist in 1934 and brings with him 33 years' technical experience.

ROBERT KRAFT is a new Construction Inspector for Village Services. He is a resident of Melrose Park, Illinois and attended school in Maywood, Illinois. Mr. Kraft was previously employed at Bell Air Heating in Maywood, Illinois.

EDWARD J. LA VALLIE, Draftsman, Main Accelerator, resides in Bartlett, Illinois. He received a certificate in electronics from Coyne Electrical in 1960 and a certificate in hydraulics from Ractec Hydraulics in 1968. Mr. LaVallie attended Elmhurst College, Illinois Institute of Technology and the College of DuPage in the evenings, receiving credits in various courses over the past eight years.

JACK E. LAJMAN, Instrument Machinist, Technical Services, lives in Elgin, Illinois, where he also attended school. Mr. Lajman began his apprenticeship 10 years ago at the old Elgin National Watch Company, Elgin, Illinois.

MISS CLARRINA JOY MARTINEZ of Aurora is a new clerk with Material Services. She attended the Comptometer School of Chicago, Victor Business

Machines Company, receiving an IBM Key Punch Certificate in 1965.

LESLIE W. OLEKSIUK, Physicist, Beam Transfer, resides in Downers Grove, Illinois and is a native of Canada. Dr. Oleksiuk received his B.A.Sc. (1959), M.A. in physics (1960), and Ph.D. in physics (1962) from the University of Toronto.

KEITH RICH of Chicago, Illinois is a new Programmer with the Theory division. Mr. Rich attended the University of Chicago and the Illinois Institute of Technology.

JOHN J. SANTORI resides in Hinsdale, Illinois. A Technical Specialist with Experimental Facilities, Mr. Santori received a Master Machinist and Mechanical Drafting Certificate from Allied Institute, Chicago, Illinois in 1949.

CHARLES W. SCHMIDT, Technical Specialist, Main Accelerator, received his B.S. in physics from Florida State University in 1964. He has taken graduate courses at the University of Illinois. Mr. Schmidt resides at 4-Lakes Village, Lisle, Illinois.

EDWARD H. SCHOLEFIELD of Oak Forest, Illinois, is a Designer with Experimental Facilities. Mr. Scholefield completed many courses at ANL and has received certificates in drafting and design from Allied Institute and Midwest Trade School.

ROBERT SCHERER is a new Driver-Mover with Material Services. A resident of Bellwood, Illinois, he attended school in Maywood, Illinois. Mr. Scherer was formerly with the Park District in Bellwood, Illinois as Assistant Foreman.

FRANK J. SITAR, Accountant, Accounting Department, lives in Joliet, Illinois. He received his B.A.Sc. in 1965 from Lewis College. Mr. Sitar was previously employed by the Rexall Chemical Company, Joliet, Illinois.

NICK M. SMITH is a resident of North Aurora, Illinois, and joined Village Services as a Maintenance Man. Mr. Smith attended school in Batavia, Illinois and for the past several years was employed by a local contractor.

MRS. PAULA STRANSKY joined Village Services as a Clerk, and is a resident of Naperville, Illinois. Mrs. Stransky attended Southern Illinois University and St. Dominic College.

NALites To Wed

Two NAL employees have announced their engagement and plan to be married June 28. They are Miss Judith Ann Michaud, assigned to the Brobeck group, and Ralph Wagner, of Personnel. Miss Michaud is the daughter of Mr. and Mrs. Raymond Michaud, of Wheaton, and Mrs. Raymond Michaud, of Wheaton, Wagner is an alumnus of Southern Illinois University. He is the son of Mr. and Mrs. Harold Wagner of Western Springs.

Church Relocates

The Apostolic Pentecostal Church, a country church east of Batavia on Wilson street, has moved to Benton and Bevier streets in Aurora and now is known as the Benton Street Apostolic Church of Christ. The former site of the church stood near the northwest border of the NAL site.

Golf, Softball Loops Planned

With the coming of May and the promise of fair weather ahead, the recreational program at NAL takes to the out-of-doors. Plans for a softball team and a golf league, both of which will continue through the summer months, should provide a welcome change after winter's dormancy.

Bowling

Mixed bowling will complete its schedule on May 2. Competition in the league remains vigorous, and it appears that final standings will not be determined until the closing weeks of play. Hopefully, team rivalries will be suspended and the past agonies of seven-ten splits put in proper perspective for the evening of May 16, when a banquet will officially mark the end of the bowlers' season.

Golf

The NAL Golf League has set its inaugural round for April 23 at the Fox Valley Country Club; play will then continue on a regular weekly basis. The first four nine hole matches will not be included in the year-end point total, but rather will be used to determine individual handicaps. Once handicaps have been assigned, players will be matched with a partner of comparable ability, and the league membership divided on the basis of handicap into two flights which will function independently.

Ladies Invited

The league presently includes thirty-eight players, four of whom are ladies. The ladies, Carolyn Noble, Helen Severance, Eupie Georgoulakis, and Mrs. John Schivell, comprise not only a very avid group of golfers, but also a very vocal minority. It is their wish that any misconception as to the sexual requisites for membership in the league be clarified. Although originally announced as a men's golf league, the league is not specifically of masculine gender, and additions to the feminine ranks would be welcomed.

Softball

Those with a bent for more active endeavor should find the softball team an adequate outlet for their energies. The game played is twelve inch fast pitch which is far removed from the leisurely brand of softball associated with picnics in the park.

Leo Ray of the Booster group will serve as team manager, and to date has some twenty players on his roster. Practice should begin during the last week of April, and will continue on a semi-weekly basis at the Naperville City Park. Although there has yet been no definite commitment for league affiliation, NAL's team will enter either the Aurora or Yorkville City League, with play beginning in early June.

To those who suspect they possess the potential for softball greatness, Mr. Ray extends an invitation to sign up for the team.

Kane County Plans Road Extensions

The Kane County Board of Supervisors, at its monthly meeting in April, approved spending \$467,000 in motor fuel tax funds to build Kirk Road extended from Butterfield Road (Rte. 56) northward to a point south of East Wilson Street, Batavia, past the National Accelerator Laboratory site.



Richard J. Auskalis

Purchasing's "Good Listener"

by Helen Severance

Richard J. Auskalis has been called many things - efficient, composed, leader, husband, supervisor, daddy, boss, thoughtful, patient, witty, observing, quiet and a good listener to name a few.

Dick and his wife, Adela, are a rare breed in a cosmopolitan area as Chicago - both are true natives having been born, raised, educated and lived all of their lives in the city of Chicago until they moved to the "country" - Glen Ellyn - last year. By his own admission, Dick is still not used to the sound of crickets!

Family of Seven

However, the patter of little feet is another story. This, he is used to! The Auskalis' are the parents of seven children. Linda, aged eleven, is the eldest and is "trying out" for the position of babysitter. Backing her up is Kathy who is ten and has the dubious honor of being in charge of garbage removal. The dishwasher, drier and general all-around worker is nine-year-old Donna. Next comes the junior man of the house, Richard, aged 8, who, according to his older sisters "does absolutely nothing" except have the "little kids" wait on him. The little kids are Patrice and Pamela, five-year-old twins, and Robert, who is four. And that is what is known as being knee-deep in children!

NAPM Member

Dick is an active member of the National Association of Purchasing Management and a committee member of the Annual IIT Seminar on Purchasing Professional Development. As Senior Purchasing Administrator for the Material Management Section at NAL, he is supervisor of all the buyers and the clerical staff. Formerly of IIT research, he brings to the Laboratory twelve years of purchasing experience on a professional level.

Dick has a very rare quality in these times of protest, unrest and dissension - the ability to manage people in a very business-like way and yet not lose the personal touch which is so very important to those who work with him.

National Accelerator Laboratory
P. O. Box 500
Batavia, Illinois 60510

Classified Ads

This classified section may be used only by active employees of NAL, DUSAF, & AEC. Ads must be submitted by the 10th of each month. Ad copy should be restricted to 20 words or less and typewritten. All items for sale or rent must be the property of the person submitting the ad. It must be understood that houses, apartments, or rooms for sale or rent must be available without regard to race, creed, color, or national origin. No ads will be accepted for resale in connection with a commercial enterprise. The Crier reserves the right to review all ads submitted for publication. Copy should be sent to Gloria Moore, Personnel, 14 Sauk Boulevard.

For Sale:

14' Speedcraft Runabout, 35 H.P. Evinrude electric start motor, Gator Trailer - skis - extras - \$450.00

Portable crib, good condition \$10; Playpen, good condition \$10; Blond Muskrat fur cape, good condition \$12.
Frank Mehring, Ext. 242 or 242-3429

Library table, walnut, Re-finished - \$30; Child's Feeding table - \$10; Thor Mangle - \$10
Fireplace screen and stand with tools - \$8; T. V. Table - \$3; Chord organ (small) - \$5; Dress Form (new) (Med. size) \$7; Two chests of drawers, stained antique walnut - \$15 each or both for \$25; Two chests of drawers - child's - \$10 each; Small white chest of drawers \$5; Mirror - \$5; Three matching pieces of Samsonite luggage - \$8 set; Complete set of Woman's Day Cookbooks - new - \$5; Two Lawn Sprinklers - \$2 ea; AM - FM Transistor radio \$5; Pressure Cooker-Canner \$5; Bolex Movie Camera, CS 8 pan clipr zoom lens - Make offer.
Mrs. Burton Sandberg - 355-3312

Heath 150 watt transistor stereo amplifier with walnut case. Excellent condition. \$160.00 A1 Stump Ext. 335

AKC Registered Toy Poodle - Female - Has shots 12 weeks old - Black - Paper trained. Dorothy Poll Ext. 232

1965 Chrysler Newport 4 dr. Hardtop, Spanish Red, Power steering, Radio, Vinyl Side Panels, whitewall and snow tires, torqueflite trans. Excellent condition. Original owner. \$1350.00 Can be seen at the Model Shop, 37 Shabbona or phone BR.9-7723 after 6PM Bob Huedorf Ext. 279

'64 Chev Bel Air 2 dr, 6 stick \$550. Bob Kreml Ext. 261

Want to Rent Cottage for one week during summer, Wisconsin, Illinois or Michigan. Phone Rene Tracy. Ext. 275.

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