

# Report On Lower Extremity Bracing Course Pilot Class, September 18-29, 1961

By W. F. HARMON  
*Atlanta, Georgia*

Early in the summer of 1958 I had the opportunity, along with a dozen or so other Orthotists from all over the country, to be a member of a discussion panel on Lower Extremity Bracing at the Institute of Physical Medicine and Rehabilitation, sponsored by the New York University Post-graduate Medical School.

At that time, New York University was contemplating the establishment of a four year degree course in Orthotics and Prosthetics, and although there had been considerable activity in the field of Prosthetics, very little had been done in the field of Orthotics by any of the institutions of higher learning. The earliest effort in broadening the scope of Orthotists were the Symposiums held by the Mellon Institute starting in 1948.

Next followed the course in Functional Arm Bracing conducted by our friends from U.C.L.A. I was fortunate to be able to attend all of these gatherings, the success of which can be attested to by all Orthotists who were present.

As an outgrowth of the 1958 session, Dr. Sidney Fishman and his staff at New York University arranged for a series of courses on Lower Extremity Bracing, and a pilot course was concluded the latter part of September of this year.

The roster of 14 students for the pilot course included most of the men who had attended the original meeting in 1958.

Two full weeks, Monday through Friday, were devoted to the following phases:

1. OBJECTIVES OF BRACING
2. GENERAL ANATOMY
3. SURFACE ANATOMY
4. BASIC MECHANICS
5. NORMAL HUMAN LOCOMOTION
6. MOTOR DISABILITIES
7. PATHOMECHANICS OF THE KNEE AND ANKLE
8. METALS IN ORTHOTICS
9. ORTHOTIC COMPONENTS, INCLUDING SHOES
10. MEASUREMENTS, TRACINGS AND LAYOUTS OF SHORT & LONG LEG BRACES
11. FABRICATION OF SHORT & LONG LEG BRACES INCLUDING THE ISCHAL RING
12. MEDICAL MANAGEMENT

Assisting Dr. Fishman with the administration and conduct of the course were 9 New York University staff members, including doctors, therapists and engineers. In addition to this group, 5 Orthotists played important roles in the preparation and conduct of the course.

One of the most interesting phases that we participated in was the critique that followed at the conclusion of each day.

The Orthotist students were given the opportunity to offer comments, make suggestions and lend constructive criticism on each subject offered. These discussion periods, running for an hour or more daily, provided the staff with additional material, ideas, and recommendations for changes that would provide a more comprehensive course for the Orthotist to follow. Thus far three additional courses are scheduled to follow within the next six months, the first of which began on November 6th.

All the Orthotists in attendance are most gratified, as will be all other Orthotists who will attend subsequent courses, for the work that has been done and will be done to further the benefits for the handicapped and provide additional training for those who serve.

Our sincere thanks to Dr. Fishman and his associates who have contributed so much to this endeavor.

## Prosthetists And Orthotists Courses For 1962

Date 1962	Course No.	Title	University
Jan. 2-12	749B	Lower Extremity Orthotics	NYU
Jan. 8-19	650	Fitting and Fabrication of Special Prostheses	NWU
Jan. 15-26	7416A	Upper Extremity Prosthetics— Fitting and Harnessing	NYU
Feb. 5-23	661	Upper Extremity Prosthetics	NWU
Feb. 5-16	7414C	Below-Knee Prosthetics	NYU
Feb. 12-23	X-485	Functional Long Leg Bracing	UCLA
Feb. 26-Mar. 23	746B	Upper Extremity Prosthetics	NYU
Mar. 5-30	X-463	Above-Knee Prosthetics	UCLA
Mar. 19-Apr. 6	601	Above-Knee Prosthetics	NWU
Apr. 2-13	749C	Lower Extremity Orthotics	NYU
Apr. 9-27	X-480	Below-Knee Prosthetics	UCLA
Apr. 16-27	611	Below-Knee Prosthetics	NWU
Apr. 23-May 4	7414D	Below-Knee Prosthetics	NYU
May 7-25	X-468	Upper Extremities Prosthetics	UCLA
May 14-25	7416B	Upper Extremity Prosthetics— Fitting and Harnessing	NYU
June 4-22	743C	Above-Knee Prosthetics	NYU
June 11-29	X-476	Functional Bracing of the Upper Extremity	UCLA

# New York University Lower Extremity Orthotics Course

From September 18th through September 29th, 1961, fourteen of the leading orthotists in the country attended a pilot course in Lower Extremity

Orthotics at New York University. Many of those attending had also participated in the preliminary planning for this new endeavour during the NYU-OALMA Orthotic Seminar held in August, 1958 at New York University.

## *Contents of Course*

For two weeks this select group attended classes covering a wide range of subject matter pertaining to principles and practices in lower extremity orthotics. The major subject areas covered during the course serve to illustrate the scope of the endeavor. The subjects and the instructors who taught them were:

<i>Subjects</i>	<i>Instructors</i>
<i>Scientific Background</i>	
Anatomy .....	Joan Erback, Charles Fryer
Mechanics .....	Fred Berg
Normal Human Locomotion .....	Charles Fryer
Pathomechanics .....	Charles Fryer
Motor Disabilities .....	Joan Erback
<i>Orthotic Principles and Procedures</i>	
Metals in Orthotics .....	Elliot Dembner
Brace Components .....	Norman Berger
Shoe Modifications .....	Isadore Zamosky
Measurement, Tracing, Layout and Assembly of	
Short Leg Brace.....	Carlton Fillauer, Stephen Hall,
Long Leg Brace.....	and Bert Titus
Weight Bearing Brace	
<i>Clinical Procedures</i>	
Medical Management .....	Nadene Coyne, Victor Ribera
Training .....	Joan Erback
Checkout .....	Warren Springer

The scientific subjects were presented as prerequisite to a full understanding of the orthotic principles and techniques which were to be demonstrated later in the laboratory and shop sessions. The *anatomy* lectures, for example, emphasized discussions of muscles and bones in relation to the function of the lower extremities with illustrations selected to provide fuller understanding of the brace wearer and his braces.

Similarly, instruction in *basic mechanics* prepared the way first, for the study of *normal human locomotion* and second, for study of the effects of disability on balance and ambulation, which was to be discussed in *pathomechanics*. To help the orthotist attain a further understanding of the physician's prescription objectives, an important part of the course was devoted to a review of *motor disabilities* and *principles of medical management*. The material in these lectures was selected to familiarize the students

not only with terminology, but also with the causes, descriptions and treatments of the most important diseases encountered in orthotic practice.

Laying the groundwork for laboratory sessions, fundamental principles involving the uses of *metals in orthotics* were presented to enable the orthotist to make a more precise selection of bracing materials and to improve his understanding of good and bad practices in the working of various metals. In addition to this, a study of the *component parts* used in braces and lectures on *shoe modifications* were included. In the laboratory periods every effort was made to directly wed the theoretical knowledge presented in the classroom to the practical work of *measurement, tracing, layout, and assembly of braces*. The facilities of a completely equipped shop and twenty patient demonstrators were made available to the participants. In these sessions several braces were made by each individual and subjected to checkout and critiques by the faculty. Work sheets and textual material for home study and review were available as needed.



ATTENDING PILOT COURSE IN ORTHOTICS AT NEW YORK UNIVERSITY: (Top row l to r): Charles R. Goldstine (New York); Karl W. Buschenfeldt (Stoughton, Mass.); Erich Hanicke (Kansas City, Mo.); Clyde E. Peach (Indianapolis, Ind.); William J. McIlmurray (New York); Josef Rosenberger (Newington, Conn.); Herman C. Hittenberger (San Francisco, Cal.); (Middle Row l to r): Alfons Glaubitz (Elizabethtown, Pa.); Siegfried Jesswein (Chicago, Ill.); John J. Glancy (Boston, Mass.); W. Frank Harmon (Atlanta, Georgia); Milburn J. Benjamin (Los Angeles Cal.); Charles W. Rosenquist (Columbus, Ohio); Roy Snelson, Los Angeles, Cal.); Ralph Storrs (President of AOPA); FACULTY (seated bottom row l to r): Warren Springer; Joan Erback; Charles Fryer; Nadene Coyne; Sidney Fishman; Norman Berger; Carlton Fillauer; and Bert Titus.

### *To Meet a Need*

The long period of preparation for this pioneer program was undertaken to meet the increasing demand for systematic education and training in the field of orthotics. It is common knowledge that in comparison to other professions the educational facilities available to people wishing to enter the orthotic field have been very limited. This has also held true for experienced orthotists desiring further study. Only limited instructional opportunities have been available primarily through apprenticeship training.

Today, in order to practice most professions, stipulated educational requirements must be met. It would be redundant to elaborate on the relative absence of such formal requirements and standards in the field of orthotics. Furthermore, many orthotists have themselves long been asking that orthotic research and educational facilities be expanded. Particularly with the successful introduction of courses in prosthetics, there were increased requests for comparable work in the field of orthotics.

In the last few years long strides have been taken to fill both the need for college level training and the need for up-grading courses for those in the field. In 1956, New York University's Prosthetics and Orthotics Education Program was created under the direction of Dr. Sidney Fishman with Associate Director, Norman Berger and Assistant Director, Warren Springer as key assistants. Two important outgrowths of this program of significance to orthotists are the first four year college level course offering a Bachelor of Science degree in Prosthetics and Orthotics, which was initiated in September, 1960 for beginners in the field, and this year's inaugural course in lower extremity orthotics setting the stage for regular courses for experienced orthotists in active practice.

### *Preparations Begin*

Based on the information gained at the 1958 NYU-OALMA Orthotic Seminar and previous knowledge in the field, intensive efforts were begun to develop a course of study for orthotists. It was a little over three years later that the pilot course was presented; a relatively short time for preparation of a pioneer program of this sort when one recalls the wide range of necessary material. For one thing the contributions of a large variety of specialists were required. The preparations eventually involved the planning, research, writing or teaching services of orthopedic surgeons, physiatrists, engineers, therapists, anatomists and kinesiologists, educators, writers, artists and skilled office workers.

Once the subject matter had been selected other problems had to be solved. There existed a notable lack of textual and visual material applicable to a course in lower extremity orthotics. Specialists on the University staff, many of whom would be teaching the material, prepared subject texts, which were edited by a technical writer, gone over again by the authors, illustrated by staff and free-lance artists, and finally typed and prepared for publication by the office staff. A large assortment of graphs and charts for presentation in the classrooms were prepared, and films and equipment were obtained.

Amidst the academic preparation another and very important line of activity was in full swing. The value of patient demonstrators in the clinical aspects of the course had been proven in the prosthetics courses. This required the launching of a recruitment drive to find brace wearers for participation in the program. Mr. Gramza, of the staff, contacted the New York State Division of Vocational Rehabilitation, Bellevue Hospital, the Institute for the Crippled and Disabled, the Institute of Physical Medicine and Rehabilitation, and many other public and private institutions for leads to patients. These brace wearers were subsequently interviewed, examined and chosen on the basis of their handicap (as variety was desired) and on their willingness and ability to cooperate. Over twenty patient participants were involved in the pilot course. Some came from far away New Jersey, Connecticut and Long Island and took time off from business and jobs to help in the new program. Included were an artist, an author and several businessmen, all making an important contribution.

### *Reactions to Pilot Course*

The final test of all these preparations was in the reactions to the course itself. The fourteen student-consultants were asked to critically evaluate the course so that suggestions could be utilized in preparing for future classes. The universally enthusiastic reception by the group brought forth typical comments such as these:

"The course is a step forward to establish a better profession in the future."

". . . it will also be an excellent course for the applicant for certification."

"I think the material offered is excellent and should assist in orthotists becoming professionals."

". . . facilitates communication with the medical field."

". . . essential for any orthotist regardless of previous experience."

Some very helpful suggestions resulted in revisions of instructional material. A number of participants commented, for example, that there was too much material for the students to absorb in the two short weeks of the course. As a result instruction in weight bearing braces had to be deleted from the current courses. It is likely that the course will have to be extended to three weeks next year in order to give adequate instruction in the varied subjects of interest to the student. Many new ideas came out of the class experience, but there was concurrence in the enthusiastically positive response to the program!

The success of the pilot course was due to the cooperation of those who attended the course itself, the 1958 seminar, and the unstinting efforts of the University staff and faculty. Special mention should go to the orthotist members of the faculty—Messrs. Carlton Fillauer, Stephen Hall and Bert Titus who for over a year took considerable time away from their own facilities to help prepare material and who carried a substantial part of the teaching load. Also to Dr. Edward Peizer (of the University's College of Engineering) and his staff, whose orthotic research activities contributed significantly to the course content.

### *Future Plans*

With one regular course already completed, two additional courses in lower extremity orthotics will be offered during the remainder of the present academic year. The dates of these are:

749 B—January 2-12, 1962

749 C—April 2-13, 1962

There are still several vacancies available for those wishing to attend either of these sessions. Further information can be had by addressing:

Director, Prosthetics and Orthotics, New York University Post-Graduate Medical School, 342 East 26th Street, New York 19, New York.

Plans for the future include the inauguration of corresponding courses in lower extremity orthotics designed for physicians and surgeons and for therapists, and the unification of the instructional materials into a single textbook. It can be optimistically predicted that this forward step is only the beginning of a new effort in prosthetic and orthotic research and education, through which the combined efforts of many determined people will bring this profession into full and equal status beside the other professions dedicated to the healing and betterment of mankind.