

**Prosthetics and  
Orthotics  
Education**

Report of the  
Phoenix Conference  
January 20-22, 1990

American Academy of  
Orthotists and  
Prosthetists

---

# CONTENTS

---

<b>Preface</b> .....	5
<i>John W. Michael, M.Ed., C.P.O.</i>	
<b>Synthesis (Executive Summary)</b> .....	7
<i>A. Bennett Wilson, Jr., B.S.M.E.</i>	
<b>Introduction</b> .....	9
<i>A. Bennett Wilson, Jr., B.S.M.E.</i>	
<b>Report of Focus Group #1</b> .....	11
<i>Terry J. Supan, C.P.O.</i>	
<b>Report of Focus Group #2</b> .....	13
<i>John W. Michael, M.Ed., C.P.O.</i>	
<b>Report of Focus Group #3</b> .....	15
<i>Ira Schoenwald, Ph.D.</i>	
<b>Discussion Including Plenary Session</b> .....	17
<i>Maurice LeBlanc, M.S.M.E., C.P.</i>	
<b>Appendix A</b> .....	21
<i>List of Participants</i>	
<b>Appendix B</b> .....	23
<i>List of Consumers</i>	
<b>Appendix C</b> .....	25
<i>Conference Program</i>	
<b>Appendix D</b> .....	27
<i>Focus Group Composition</i>	

---

# PREFACE

---

**T**he profession of prosthetics and orthotics in the United States has a tradition of self-examination and self-criticism leading to renewed focus on our educational system and its impact on the disabled citizens we serve. Pointe Vedre I and II, conducted in 1970 and 1976 respectively, both helped focus attention on our professional education and led to significant changes based on the perceived needs of the time.

In the interval since Pointe Vedre II, the state of the art of our practice has changed dramatically - as has the Academy. At the urging of Mel Stills, C.O. (current President-elect), the Academy began planning for a multi-disciplinary, pan-organizational conference nearly three years ago. The purpose was to convene a panel of acknowledged experts from the ranks of educators, researchers, consumers and practitioners to study the current state of practice and education and to make recommendations for future directions.

Unfortunately, the current climate of cost-containment led, in part, to two unexpected developments just prior to the conference. Immediately after discovering the Federal government was threatening the very existence of our schools with radical funding cutbacks, the Academy learned that anticipated external funding for the conference was not forthcoming.

Due to the urgency of the situation, the decision was made to proceed immediately with a scaled-down

conference using what internal funds were available. Grateful appreciation is extended to all participants, most of whom attended entirely at their own expense.

One key outcome of the Phoenix Conference was a strong sense of shared purpose and collaboration. Even a brief review of the attendees will reveal that many points of view were solicited. Not only were participants selected from across the educator/ researcher/consumer/practitioner spectrum, they also represented a deliberate mix of older and younger individuals, business owners and employees, private and institutional sector members, and so on. Representatives of all constituent organizations within the Orthotics and Prosthetics National Office were included, as were representatives from the International Society for Prosthetics and Orthotics, and leading amputee advocates.

When such a diverse group achieves consensus, their findings warrant careful study. Strong agreement regarding both problems facing our profession and the directions necessary to cope with them are expressed herein.

The final step is for each of the constituent organizations to develop and implement specific strategies based on the assessments developed at the Phoenix Conference. All readers are urged to become actively involved in this final and most important step in the process: taking action to improve the future for our profession and for the disabled citizens we serve.

---

# SYNTHESIS

---

**T**he following observations and recommendations were offered in consensus by one or more of the Focus Groups and by the conference in Plenary Session:

1. There is an immediate funding crisis in Prosthetics and Orthotics Education owing to a change of direction within the Rehabilitation Services Administration, which currently supplies a substantial portion of the monies required for operation at the present level.
  2. Manpower needs have not been documented in recent years. There appears to be a manpower shortage and the schools are not producing the number of graduates needed now and in the future.
  3. The O&P profession has not provided the leadership or introspection required for the kind of an education program required to maintain and improve its strength and vitality.
  4. There exists no organized plan for the transfer of technology from the research and development laboratories to the consumer.
  5. The profession itself should be involved more and more directly with research and development.
  6. The P&O schools need a clearer definition of the level of education of the graduate that is expected and desired by the prospective employers.
  7. The accreditation process needs to be reviewed thoroughly.
  8. The P&O education program should rely less and less on Federal support.
  9. To establish an overall program for the advancement of the profession and thus care of the disabled, there must be a balance and coordination between education, research, and clinical service. Strong leadership is required to achieve this.
  10. The National Office should add a person who could devote his or her time to facilitate coordination and funding efforts with respect to the overall program. (Research, Development, Technology Transfer, Education, Clinical Practice).
  11. AAOP, AOPA, ABC, EAC, and NAPOE should use the information developed at this conference to complete plans for a unified program to meet the educational needs of the prosthetics and orthotics profession that will include the pertinent elements of research, development, evaluation, and technology transfer.
-

---

# REPORT

---

## Conference on Prosthetics and Orthotics Education

Phoenix, Arizona  
January 20-22, 1990

**T**he Prosthetics and Orthotics Education Program in the United States had its beginning in 1953 when a comprehensive six-week program in upper-limb prosthetics was offered by the University of California at Los Angeles to provide practicing prosthetists with the results of a coordinated nationwide research program that was supported by the Veterans Administration and the Armed Forces and coordinated by the National Academy of Sciences (1). To meet the needs of the country, similar programs were established at New York University and Northwestern University. The upper-limb programs were supplemented by programs in above-knee prosthetics, below-knee prosthetics, and hip disarticulation prosthetics as sufficient new knowledge was developed and proven in the research program.

When the majority of prosthetists in the U.S. had been brought up to date by these short-term courses, each of the Universities introduced preparatory courses for students with little experience in prosthetics. Orthotics was added to the curriculum a short while later. To further satisfy the needs of the country, other universities have established prosthetics and education courses. Depending upon the policies of each university, some programs offer instruction at the baccalaureate level and some offer intensive shorter certificate courses. All are designed to meet minimum standards established by the Education Accreditation Commission; thus, the education programs provide one of the prerequisites for entry into the certification process.

These programs were established by those responsible for the national research program for the purpose of effectively and efficiently transferring the results of research to clinicians throughout the country, and until the dissolution of the national research program in 1975, there was a very close relationship between the research program and the education program.

As long as there was a coordinated research program

with an orderly system for introducing new techniques and devices into the education programs, the subject matter taught in the preparatory and continuing education programs of each of the educational institutions was essentially the same. However, since 1975, the education programs have drifted away from each other, their lowest common denominator being the minimum subjects and hours of instruction established by the Education Accreditation Commission.

Because concerns have been heard from many quarters about the number of graduates and the lack of uniformity in the quality of the various education programs, as well as the tuition costs and fiscal support given the schools, the AAOP (with the cooperation of AOPA, and ABC) convened a conference in Phoenix, Arizona, January 20-22, 1990 to take the first steps in 1990 toward development of a plan for refining the present education programs to meet the needs of the prosthetics and orthotics profession in the coming years.

Forty-one prosthetists, orthotists, educators, and others participated in the Conference. A list of the participants is included in this report as Appendix A. John Michael, C.P.O. served as Chairman. Louis Phillips, Ph.D, an expert in conducting conferences whose objectives are the development of plans of action, served as chief facilitator and assisted the Chairman in directing the efforts of the participants to the primary goal.

The Consumer Advisory Council to the Rehabilitation Engineering Center at Northwestern University, all of whom are amputees themselves, participated by joining the plenary sessions. A list of Council members is given in Appendix B.

After presentations that provided background and overviews of present practice in prosthetics and orthotics service, education, and research, the participants were divided into three groups, with a separate charge. One group, led

by Terry Supan, C.P.O. was requested to consider the problems associated with funding education programs. A second group, led by John Michael, C.P.O. was asked to consider the relationship between research, development, and technology transfer to the education process. The third group, led by Ira Schoenwald, Ph.D. was asked to review the present education process and develop recommendations for action.

The program for the conference is included in this report as Appendix "C" and the composition of the Focus Groups is included as Appendix "D".

The groups met in plenary session during the middle of the second day for each facilitator to make a brief progress report. The conference was concluded by a plenary session in which presentation of a report by the facilitator of each group was followed by discussion from the floor.

#### REFERENCE CITED

1. Wilson, A. Bennett, Jr., *History of Amputation Surgery*, Chapter 1 in Atlas of Limb Prosthetics, American Academy of Orthopaedic Surgery, C.V. Mosby, 1981.

---

# REPORT

---

## FOCUS GROUP 1

# Funding O & P Education

Facilitator:  
Terry Supan, C.P.O.

### KEY EXTERNAL FORCES

#### I. Funding

- A. The education programs currently rely on Federal funding for half their budgets
- B. Changes in administrative policies at R.S.A. have resulted in a major cutback in these programs
- C. Future Federal budget cuts will have unknown, but presumably adverse, impact on availability of funding

#### II. Credentials and Certification

- A. There is a significant lack of acknowledgement of A.B.C. certification by funding and reimbursement sources

#### III. Relationships

- A. Government relations programs have not always had the desired effect on Congress and the Administration
- B. Consumer relations are moving in a positive direction
- C. Other Allied Health professionals are providing some services traditionally provided by O & P practitioners

#### IV. Marketplace

- A. Increases in the aged population and survival of more disabled children will have impact
- B. The consequences of increased socialization of medicine are unknown
- C. Resistance to change may result in a shrinking market for P & O services

#### V. Manpower needs

- A. Manpower needs that have not been documented, resulting in inappropriate funding

### KEY INTERNAL FORCES

#### I. Responsibility

- A. The profession has not taken responsibility for its own destiny
- B. We have relied on others to publish and carry out research in our field.

#### II. Lack of data

- A. The necessary data for funding justification have not been developed
- B. Needs and manpower data are not yet available

#### III. Sources of funding

- A. We have relied too much on Federal funding.
- B. Other sources of funding have not been identified

#### IV. Communications

- A. We have not communicated well in the areas of:
  - 1. Certification
  - 2. Funding resources
  - 3. Among our own organizations

### KEY ASSUMPTIONS

- 1. If we do not take positive action now, the profession as we know it will cease to exist by the year 2000.

2. If federal funding is to be expected, it must be actively pursued.
3. Federal funding should no longer be considered as a primary source of program funding but rather as a means of program enhancement.
4. If RSA's planned reduction of funding proceeds as expected:
  - a. Schools will close within one year
  - b. Needed manpower will not be replaced, much less supplemented
5. Existing efforts to restore funding have not been adequate.
6. Action must occur within four months or educational programs cannot proceed with selection of students for admission for Fall 1990.
7. For each \$200,000 per year obtained, one additional school can survive.
8. Potential funding relies on good data.
9. In order for development and funding to continue, a positive relationship between National Association of Prosthetics and Orthotics Educators and the profession must exist.
10. The industry has the ability to take responsibility for solving the short term financial crisis.

## STRATEGIC OBJECTIVES

1. Develop long term educational funding plan.
  - a. Develop a short term education crisis plan by NOC within thirty days. Goal: \$900,000 (March 1)
  - b. Recommend that NAPOE conduct a study of alternative cost effective means of P&O education by September 1990.
2. AAOP employ a Director of Education
  - a. Develop meaningful statistics in O&P
  - b. Assist in developing objectives for use of Education Fund resources
  - c. Coordinate the reassessment of educational issues on a periodic basis
  - d. Assess the direction and content of Continuing Education Conference program
  - e. Assist in developing objectives of Academy College Fund
3. Utilize the National Office Council to solidify the efforts of AAOP, AOPA, ABC and NAPOE toward educational issues.
4. Enhance government relations toward education.
  - a. Demand more support for O & P education from the Federal government immediately and ongoing
  - b. Prepare procedures for effective government relations programs

# REPORT

## FOCUS GROUP 2

# Research, Development, & Technology Transfer

Facilitator:  
John W. Michael, M.Ed., C.P.O.

### KEY EXTERNAL FORCES

- \* A. Consumers
- \* B. Funding
- C. The Law
- \* D. Technology
- E. Demographics / Societal Pressures

### KEY INTERNAL FORCES

- A. Education
- B. Manpower
- \* C. Motivation/Priority
- D. Marketing
- E. Institutions
- F. Research

\* denotes most critical factors

### KEY ASSUMPTIONS

#### I. Funding

- A. Research - Overall money pool is increasing but P & O not tapping into these funds.
  - i. Public
  - ii. Private
- B. Product Development
  - i. Public monies increasing
  - ii. Private monies increasing
- C. O & P access/control can be improved.

#### II. Technology

- A. There is no organized plan for transfer of technology
  - i. to schools
  - ii. to purchasers
    - a. in the field
    - b. to patients
- B. There is a great demand for transfer of technology
- C. New technology continues to be available
- D. We have a difficult time defining "appropriate" technology.

#### III. Consumers (Patients/Clients/Products/Units)

- A. They are large in number
- B. Patient mix is changing
  - i. elderly increasing
  - ii. young, active decreasing
- C. Consumers lack information to make quality decisions
- D. This large patient pool is underserved, especially in orthotics
- E. They are a growing force
  - i. want "more and better" services
  - ii. are better informed
  - iii. fledgling organizations are emerging
- F. Consumer concerns are not fully identified
- G. There is an opportunity for coalition with prosthetists & orthotists

**IV. Motivation/Priority (internal)**

- A. Research has not been a high priority in P & O
- B. Acceptance/credibility is a high priority
- C. There is greater interest in product development than in basic research.
- D. There are mixed motives for technology transfer, so it is disorganized.
- E. The field CAN redirect its priorities
- F. Advanced degrees have not been a high priority in P & O
  - i. This restricts our access to research funds.
  - ii. Reduces our control over our field.
  - iii. Restricts our influence over new technology
  - iv. Lowers our credibility
  - v. Threatens our future
  - vi. WE CAN REVERSE THIS!
  - vii. We CAN learn from other models
- G. The perception of research needs to be changed:  
RESEARCH IS GOOD BUSINESS!

**STRATEGIC DIRECTIONS**

- I. Identify Strengths, Weaknesses, Opportunities, and Threats (S.W.O.T. team!)
- II. Develop valid demographics and projections
- III. Rescue current education and redirect future education efforts.
- IV. Increase manpower
- V. Establish an infrastructure (Matrix)
  - A. Research
  - B. Clinical (See Figure 1)
  - C. Education
  - D. Leadership/management
- VI. Increase net funding for all P & O endeavors

**STRATEGIC OBJECTIVES**

- I. O & P Demographic Study related to manpower needs
  - A. Complete within 1 year
    - i. use experienced researchers
    - ii. look for existing data
    - iii. locate funding

**II. Identify Patient/Client P & O "Needs"**

- A. 1 year for prosthetics
- B. 3 years for orthotics
  - i. use existing research sources
    - a. support groups
    - b. studies
  - c. there are seven additional assessment techniques, per Dr. Phillips

**III. Establish Infrastructure (Education, Clinical service, Research)**

- A. Conception - 3 months (see Figure 1)
- B. Initial structure - 1 year + (on-going task)
- C. Workshop to clarify conception
- D. Identify strengths and weaknesses, recommend solutions.
- E. On-going process to fill slots in the infrastructure; assign priorities
- F. Create an effective management/leadership structure.

**IV. Increase field motivation and priority for research.**

- A. Time frame 1-2 years
- B. Workshops to raise consciousness
  - i. clinical case studies
  - ii. sense of empowerment ("here and now")
  - iii. how to organize projects
  - iv. mentors, on-going support
  - v. applied statistics
  - vi. writing skills
  - vii. knowledge of funding sources and proposal preparation
- C. Financial support for practitioner research
- D. Peer support groups
- E. Inform business owners "RESEARCH IS GOOD FOR BUSINESS"
- F. Introduce research skills into the educational process

**V. RESCUE CURRENT EDUCATION**

- A. Time frame: 1 year for \$1.3 million
- B. Go back for "old" government funding
- C. Go for new funding
  - i. public funding
  - ii. private funding (foundations, etc.)
  - iii. internal funding (surtax, tuition, clinical services?)

*Remember the ultimate goal of all our efforts:*

**To Enhance the Quality life for People with Physical Disabilities**

---

# REPORT

---

## FOCUS GROUP 3

# Educational Process

Facilitator:  
Ira Schoenwald, Ph.D.

### KEY EXTERNAL FORCES

1. **Changing health care system**  
—U.S./Worldwide-Growing market
2. **Lack of visibility of the field**  
—“Rodney Dangerfield of health care”
3. **Need to educate for new technology**  
—Deficit reduction/inflation  
—Not enough qualified people to run schools  
—Lack of qualified people to apply for research  
—Fundamental Environmental Factors  
    ECONOMICS  
    ACADEMICS  
    POLITICS  
    SOCIAL ASPECTS (Attitudes)  
    DEMAND  
    —technology  
    —services  
    —research  
    —demographics
3. Lack of money (education funding)
4. Where should postgraduate finishing process take place?
5. Lack of qualified instructors
6. Too few degrees - no education ladder
7. Manpower shortage - education structure - money

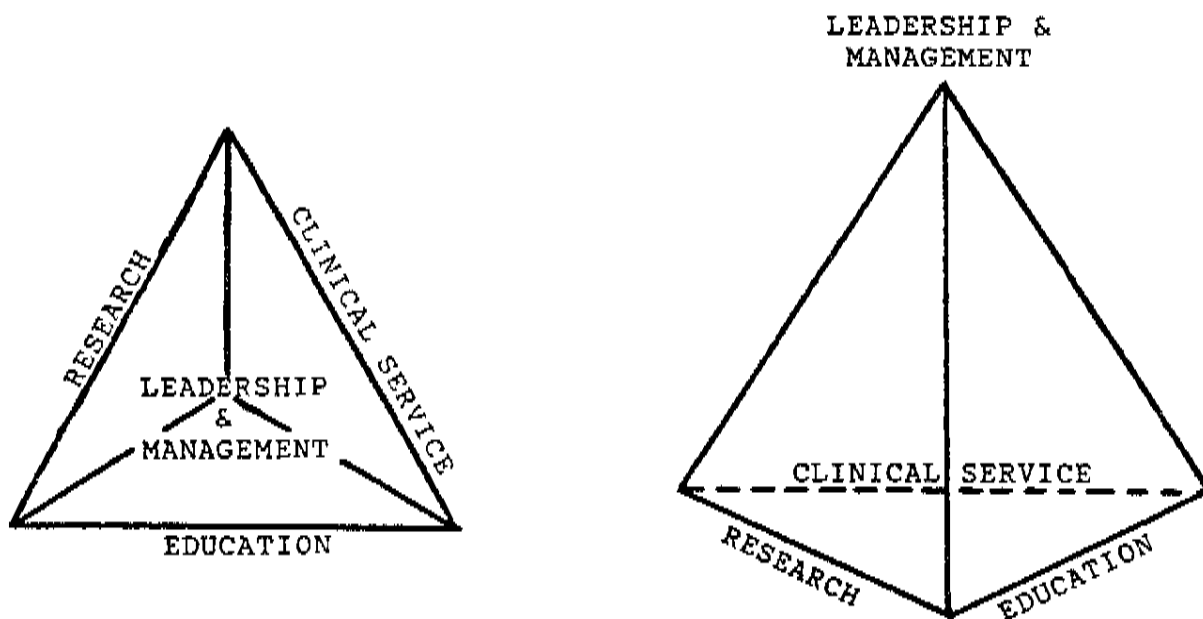
### STRATEGIC DIRECTION

### KEY INTERNAL FORCES

1. Lack of clarity of the profile of a graduate from a P & O program
  2. Accreditation process (standards) flawed  
—Essentials for fabrication; basic science; theory; patient management skills  
—ABC certification prerequisites too low
  1. Increase the present number of students matriculating from O & P schools
    - a. increase capacity of present schools
  2. Develop a structured clinical internship/residency as the next stage of O & P education
    - a. standards for such a program should be developed
  3. Entrants into all training programs should possess equally rigorous prerequisites
  4. We need to educate people about opportunities in the field and attract top quality people
    - a. develop more field-related public relations program
  5. We need more statistics
    - a. manpower data
    - b. exam statistics
    - c. patient statistics - per capita cost
    - d. manufacturer statistics
    - e. economic impact statistics
-

6. We need more help and support from the consumers
  - a. political support regarding RSA and other funding
7. We need to look at essentials in relation to what is happening in the field
  - a. reevaluate curriculum and its recent relevance with task forces including AOPA, AAOP, ABC, NAPOE
  - b. improve monitoring of compliance with minimum essentials
  - c. essentials should reflect sound clinical practice
  - d. certification exam should reflect sound clinical practice
8. Increase cooperation between industry and schools - partnership
  - a. direct financial support from business and industry
  - b. explore other ways of delivering P & O education
  - c. business should assist in establishment of institutional clinical practices
9. There needs to be a change in the education process
 

\*See 1, 2, 3, 7, 8, 11, 12
10. There needs to be additional laddering in the field
  - a. use continuing education to advance specialty education
  - b. specialty recognition
  - c. continuing education leading to advanced degree
11. There needs to be more qualified instructors
  - a. via institutional clinical practices
  - b. increase research money
  - c. continuing education standards for instructors
12. The education process needs to be less expensive and we need increased funding
  - a. look at ways to decrease per capita costs



**Fig. 1. Graphic Representation of Infrastructure Recommended for a National Program in Prosthetics and Orthotics**

---

# FINAL PLENARY SESSION

---

## Educational Conference

Dr. Schoenwald, facilitator for Focus Group 3, presented the report of that group.

Charles Pritham asked for clarification of "manufacturers' statistics". Berger answered that the idea is to secure from manufacturers the number of specific items sold in order to develop useful data not presently available. Thranhardt added the concept of getting manufacturers to help in determining benefits provided by devices.

Billock asked about item B-C in the report of Focus Group 3 - Thranhardt replied that business can help by sponsoring interns/residents and helping with teaching. Amtower asked if group considered raising salaries of school instructors to keep them more in line with practitioners. Schoenwald said "yes". Lintz pointed out that some schools allow teachers to practice in order to earn more money. Thranhardt added that it was not decided who would "own" the practice if business helped schools in this way.

Mr. Supan, facilitator of Focus Group 1, presented the report of that group. Mr. Oglesby asked about the \$200,000 figure. Mr. Supan replied that it's an average for the schools. Mr. Berger asked if Federal Government is not the primary source of financial support, then what is? Supan said we don't know but need to pursue other sources. Fenton added that \$200,000 is only a short term figure, not a long term need. Supan said that item 3 under Key Assumptions is not an idea of our lobbyist but was generated internally.

Oglesby asked about goal of \$900,000 - Supan replied that that figure is the amount of emergency funds needed to continue schools on short term basis. Michael added that the \$900,000 fund is for emergency now or later. *Spiers said that some states will match "soft" money dollar for dollar!*

Billock asked about RSA budget - Supan replied that RSA budget was increased but P & O allocation was decreased.

Berger asked if new types of P & O education were discussed. Supan replied "No, only the idea was posed."

Stills asked if any programs were evaluated and if some were allowed to die. Supan said the issue was discussed but all schools asked to be saved, at least all the slots. Novotny raised the point of overlap of effort of schools in getting funds.

Mr. Michael, facilitator of Focus Group 2 presented the report of that group.

He asked whether or not the assumptions in reference to consumers are satisfactory to consumers in the audience. Billock added that there is some interest in research but clinical practice prevails. Stills asked and Michael confirmed that "research" includes clinical evaluation.

### *Response by Consumer Group:*

The consumer group feels that the reports of the three Focus Groups are "on target". They agree that there is a crisis and action is needed immediately; good may come out of it. Thranhardt asked if anything was missed. Novotny replied that action must be taken and then see what comes out with certain points and goals in mind. Lintz would like to see definite timetables and responsibilities set; also would like to have consumers on various working committees which come out of this working meeting. Mr. Michael said that constant reference to the ultimate goal, as suggested by Wilson, namely the improvement of the quality of life for the disabled, is needed to keep us on track. Ms. Scholar said that originally P & O practitioners were viewed as "technicians" which doesn't apply any longer. She added that there is also more acceptance by P & O personnel of consumers and their assistance and advice.

Vercellotti asked why this crisis has not been addressed before. Michael said "It's a good question without a good answer - AAOP believed what RSA said a year ago". Ms.

Scholar said she was shocked originally by lack of information for consumers in P & O offices. A facility is more professional and less like a business where there is information available. Wilson said need was recognized and he and Muilenburg wrote BK and AK pamphlets and have sold 70,000 copies. Amtower said that to provide the patient with all the information he could use requires more time than the fee schedule allows.

Thranhardt said AOPA is working on a quality assurance program including patient/client education.

Dr. Phillips said that four basic themes seem to be prevalent:

1. Enhancement of education
2. Need for more data
3. Improve relationships and collaboration
4. Increase funding

He posed: "What would you do if you had a blank piece of paper to design the perfect profession?" He then called for discussion from the floor.

Pritham said effort has not been made to encourage manufacturers to buy into the process and recommendations being made. Also, he said, he and Al Pike can't speak for all manufacturers, but everyone asks manufacturers for money and there's a limit to what they can give. Requests must ultimately be directed to the Chief Operating Officers. Most practitioners talk to manufacturers but don't listen to them!

Staats felt that the Federal government has lots of money and should have their priorities re-addressed rather than change horses.

Fenton said educational process has not changed and has not become more cost effective; costs per student are outrageously high for what is done. Holmes felt there is a need for the field to become self-supporting. Spiers implied that maybe RSA has made statements about the way education is done. Brncick said Northwestern is trying to become self-supporting. Michael said that we should go after it all, public and private. Lunsford recalled Fenton's remarks that school costs are too high and that schools still cannot afford full-time instructors. Therefore, this dilemma requires that we look at a new educational process. Panton points out that we need to train good technicians who work with hands as well as those at the professional level who do not necessarily work with their hands. Childress said total education costs are basically similar every place, but it is a matter of where all the money comes from, e.g. from the state or elsewhere. Only cost to the student varies significantly. Altman asked if tuition costs are different among university courses. Spiers says State universities are

same rate. Schoenwald confirmed that, but in private schools the tuition may be different. Novotny points out that there are similar issues and problems in nursing education; they are not unique to P & O. Lunsford again recalls Fenton's comments on outrageous costs and Stills' comment that some not-so-good programs should be allowed to die. Darrell Clark said that Strathclyde spends several million dollars per year on educating 36 students which is far more expensive than the total cost in this country. Racette said time is ripe for "field" and educators to come back together so that education reflects current state of the practice.

Fenton draws parallels with medical profession where students are screened, get heavy basic science, get hands on, get internships/residencies, etc. Childress concurs with medical profession education model but points out that a medical student generally has a heavy debt when he finishes medical school but recoups it in practice.

Bart says as "consumer" of education, he has need for technicians as well as professional level people.

Staats says technician courses have been a failure, though maybe not in Minneapolis. Russell said "Let's get together and help one another!" Chagnon said that the rule of thumb is two technicians for each practitioner. Also, even practitioners need a technical component. Don't judge each school but result of all schools. Industry is ultimate judge of what is needed in field. 1990's is a decade of promise in his opinion.

*Phillips points out that it is not clear as to what type of individual the field wants.*

Lintz suggests idea of co-op educational programs and the need to look at what we want as a result. Practical experience is important. Pritham said Staats tried that approach and didn't get a response from industry. Schoenwald said that the schools hear mixed messages from the field. At present time the schools really need the help and are willing to change.

Michael quotes Bok of Harvard, "If you think education is expensive, then try ignorance."

Scott says we need to act quickly with a long range goal. AOPA has not sat back, and will be taking more action. Also, AOPA is developing five educational pamphlets for consumers.

Billock says one thing we haven't heard is the variety of education topics needed by practitioners. We haven't identified what the model student should have and whether this can be achieved by the schools.

*Phillips: Three categories of skills differentiate the high and low levels of practice that are common to all professionals - the three generic skills are now being recognized and looked for. Pritham suggests we look at other professions and learn from them. Lunsford said we must meet needs of facility owners but vision must go beyond that and recognize our need for a higher level of education in this field.*

*Phillips: Quote of Houle and book. There are 14 steps which all professions go through. Where we go from here?*

- *Panton: "prop up with money" for education programs (\$1 million).*
- *Thranhardt: most organizations have a director of development. We need one. A good director of development will bring in grant money many times their cost.*
- *Clark: Decide what is needed and what we are willing to invest. Get realistic and not expect money-makers from day one. Trade room and board for intern being there. There is a need to give something back.*
- *Racette: Schools should be given a clear message by defining what we want*
- *Novotny: Make overall field plan rather than school by school plan in bits and pieces*
- *Neumann: Suggests, per Racette, that people be locked in a room until a formal, practical plan is developed.*
- *Brncick: Present discussion is parallel to that in Focus Group I meeting. He suggests a look at notes from that meeting.*

- *Billock: We should challenge the National Office to keep this process going on both short and long term basis.*
- *Chagnon: Who and when to do the job? That's the question now.*
- *Oglesby: Need to merge recommendations from industry with education*
- *Altman: establish:*
  - AOPA - educational assessment
  - AAOP - educational assessment
  - National Office - council on education
  - Institutions - send in proposals to RSA

*Phillips: Time to wrap up - quotes paradigm from Discovering the Future*

Mr. Michael closed the meeting by stating that the conference had forced people to look at the issues. There is consensus on what the problems are and generally what to do about them. Now, thanks to this conference, we have direction. The three facilitators in their dual roles are charged with action to take on these directions. There should be no excuse for not taking action. We have what we need to deal with the overall problem. Phoenix is a bird reborn and rising from the ashes. P & O as we know it is going to die and go to next stage for rebirth.

---

# APPENDIX A

---

## State of the Art Workshop--P & O Education

### *Invited Participants*

**Ronald F. Altman, C.P.O.**  
*Past President, ABC*  
*Pres, R.F. Altman Assoc, Inc*  
 140 Woodland St.  
 Hartford, CT 06105

**Dennis Amtower, C.P.O.**  
*Academy Board of Directors*  
*Amtower Biokinetics*  
 220-15 Reservoir St.  
 Needham, MA 02194-1314

**William J. Barringer, C.O.**  
*Assistant Professor*  
 University of Oklahoma  
 O'Donoghue Rehab.  
 1122 N.E. 13th St.  
 Oklahoma City, OK 73104

**Thomas R. Bart, C.O.**  
*Past President AOPA*  
*Missouri Valley O&P Center*  
 7821 Chicago Plaza  
 Omaha, NE 68114-3653

**Norman Berger, M.S.**  
*Acting Director O&P Ed*  
 New York University  
 317 E. 34th St.  
 New York, NY 10016

**John Billock, C.P.O.**  
*Past President Academy*  
*Chairman, Acad. College Fund*  
*O&P Rehab. Engineering Ctr.*  
 700 Howland-Wilson Rd. SE  
 Warren, OH 44484

**Mike Brncick, C.P.O.**  
*Acting Director NUPOC*  
 345 E. Superior St.  
 Chicago, IL 60611

**Kenneth L. Chagnon, C.P.O.**  
*Instructor*  
*Northeast Metro Tech Inst.*  
 3300 Century Ave., N St 379  
 White Bear Lake, MN 55110

**Dudley S. Childress, Ph.D.**  
*Professor*  
 Northwestern University  
 345 E. Superior St. 14th Fl  
 Chicago, IL 60611

**Darrell Clark, C.O.**  
*Asst. Director Orthotics*  
*Rancho Los Amigos Med. Ctr.*  
 7450 Lead St.  
 Los Amigos Sta., CA 90242

**Dennis E. Clark, C.P.O.**  
*ABC Board of Directors*  
*Dale Clark Prosthetics Inc.*  
 3138 Kimball Ave.  
 Waterloo, IA 50702

**Alan J. Dralle, C.P.O.**  
*Director, School of P&O*  
 University of Washington  
 School of Medicine  
 Seattle, WA 98195

**Willem Eisma, M.D.**  
*Pres, ISPO International*  
*Dept of Rehabilitation*  
*University Hosp Groningen*  
 Oostersingel 59,  
 9713 EZ Groningen  
 The Netherlands

**James Fenton, C.P.O.**  
*ABC Past President*  
*Fenton Brace & Limb Co Inc.*  
 130 Ponce De Leon Blvd.  
 Miami, FL 33135

**Gregory S. Gruman, C.P.**  
*ABC Past President*  
*Winkley Orthopedic Labs*  
 740 Douglas Drive  
 Golden Valley, MN 55422

**Donald Holmes, C.P.O.**  
*Sec.-Treasurer Academy*  
*Northern Orthopedic Lab Inc*  
 1012 Washington St.  
 Watertown, NY 13601

**Susan Kapp, C.P.**  
*Director, Univ. of Texas Pros. &*  
*Ortho. Education*  
 5323 Harry Hines Blvd.  
 Suite V5-100  
 Dallas, TX 75235-9091

**Richard R. LaTorre, C.O.**  
*LaTorre Orthopedic Lab*  
 846 State St.  
 Schenectady, NY 12307

**Maurice LeBlanc, MSME, C.P.**  
*Researcher*  
*Children's Hospital Stanford*  
 520 Sand Hill Road  
 Palo Alto, CA 94304

**Robert S. Lin, C.P.O.**  
*Director of Orthotics*  
*Newington Children's Hosp.*  
 181 E. Cedar St.  
 Newington, CT 06111

**Thomas R. Lunsford, MSE, CO**  
*JPO Editorial Board*  
*Academy Board of Directors*  
*Clinical Director, CAL State*  
*Chief Orthotist, Rancho Los*  
*Amigos Medical Ctr.*  
 7450 Leeds St.  
 Los Amigos Sta., CA 90242

**John Michael, M.Ed., C.P.O.**  
*Academy President*  
 Duke University Medical Ctr Dept. of  
 O&P  
 P.O. Box 3885  
 Durham, NC 27710

**Wm. C. Neumann, C.P.O.**  
*Past President Academy*  
*Sec-Treasurer ABC*  
*Pres. O&P Assoc., Inc.*  
 500 Jackson St.  
 Methuen, MA 01844

**Jean-Paul Nielsen, C.P.**  
*Webbs-Portland*  
 1627 N.E. Broadway  
 Portland, OR 97232

**Mary Novotny, M.S., R.N.**  
 10207 South Washtenaw  
 Chicago, IL 60642

**Daniel G. Oglesby, C.P.O.**  
*District Manager*  
 J.E. Hanger, Inc.  
 3211 Tulane Ave.  
 New Orleans, LA 70119

**Hugh Panton, C.P.O.**  
*ABC President*  
*Senior Vice President*  
 J.E. Hanger Inc.  
 P.O. Box 568365  
 Orlando, FL 32865-8365

**Alvin C. Pike, C.P.**  
*Academy Past President*  
 Otto Bock Orthopedic Ind.  
 3000 Xenium Lane N.  
 Minneapolis, MN 55441

**Charles H. Pritham, C.P.O.**  
*Technical Coordinator*  
 Durr-Fillauer Medical Inc.  
 2710 Amnicola Hwy.  
 Chattanooga, TN 37406

**Walt Racette, C.P.O.**  
*AOPA Board of Directors*  
 Webb's K.E. Karlson Co.  
 1627 N.E. Broadway  
 Portland, OR 97232

**R. Michael Russell, C.P.O.**  
*ABC President-Elect*  
*Sr. Vice Pres. & Gen. Mgr.*  
 Hanger Orthopedics  
 P.O. Box 1701  
 Columbus, OH 43216

**Ira Schoenwald, Ph.D.**  
*Chairman, NAPOE*  
*Admin. Director*  
 CAL State Univ. - DH  
 1000 E. Victoria  
 Carson, CA 90747

**Charles F. Schultz, C.P.**  
*Academy Board of Directors*  
*Vice President*  
 Madison P&O, Div. Acme Labs  
 7817 Mineral Point Rd.  
 Madison, WI 53717

**David C. Schultz, C.P.**  
*Academy Past President*  
*AOPA President-Elect*  
 President, Acme Labs, Inc.  
 10701 W. Burleigh St.  
 Milwaukee, WI 53222

**Gregory F. Scott, C.P.**  
*AOPA President*  
 1627 N.E. Broadway  
 Portland, OR 97232

**Ronald W. Spiers, C.P.**  
 Florida International Univ.  
 Tamiami Campus  
 Miami, FL 33199

**Timothy Staats, C.P.**  
 UCLA Dept. of O&P  
 1000 Veteran Ave.  
 Los Angeles, CA 90024

**Melvin L. Stills, C.O.**  
*Academy Vice President*  
 Univ. of Texas  
 Div. of Orthopedics  
 Southwestern Med. School  
 5323 Harry Hines Blvd.  
 Dallas, TX 75235

**Terry J. Supan, C.P.O.**  
*Academy President-Elect*  
 Southern Illinois Univ.  
 O&P Svc  
 P.O. Box 19230  
 Springfield, IL 19230

**Ted Thranhardt, C.P.O.**  
*ABC Past President*  
*Academy Past President*  
 President Southern Prosthetic Supply  
 Co.  
 P.O. Box 406  
 Alpharetta, GA 30201

**A. Bennett Wilson, BSME**  
*Research Engineer*  
 Box 380  
 Topping, VA 23169

*National Office Staff*

**Dr. Ian R. Horen**  
*Executive Director*

**Norman McKonly**  
*Director of Academy Affairs*

**Stephanie Webster**  
*Academy Asst. for Special Projects*

**Amanda Culbertson**  
*Director of ABC Affairs*

---

# APPENDIX B

---

## Members of the Consumer Advisory Council of the Rehabilitation Engineering Center at Northwestern University

**Mary Novotny, M.S., R.N.**  
*Families and Amputees in Motion*  
10207 S. Washtenaw  
Chicago, IL 60642

**Carol Scholar**  
*President, Amputee Support Network*  
4154 Forest Brook Drive  
Liverpool, NY 13090

**K. Martin Scott, Board Member**  
*Amputee Support Network*  
4154 Forest Brook Drive  
Liverpool, NY 13090

**Bill Lintz**  
*President, Central Ohio Amputee Support Team*  
5165 Raspberry Bush Ct.  
Gahanna, OH 43230

**Wayne Vercellotti**  
*National Amputee Golf Association*  
1415 Mason Ave.  
Joliet, IL 60435

**Wayne Gablin**  
*Coordinator, Wheelchair Basketball Program*  
5617 South Peek Ave.  
Countryside, IL 60525

**John Kemp**  
*General Council & V.P. Development*  
National Easter Seal Society  
70 East Lake Street  
Chicago, IL 60601

# APPENDIX C

## Program

**SATURDAY**  
January 20

### GENERAL SESSION

1:00 P.M. WELCOME J.W. Michael\*

1:05 P.M. INTRODUCTION OF PROCESS Louis Phillips  
Facilitator

1:15 P.M. OVERVIEW  
Orthotics M.L. Stills  
Prosthetics J.W. Michael  
P&O Research D. Childress  
P&O Education I. Schoenwald\*

3:00 P.M. COFFEE BREAK

3:15 P.M. THE PROFESSION

3:50 P.M. PROFESSIONAL CERTIFICATION  
H.J. Panton

4:15 P.M. PATENTS M. LeBlanc

4:30 P.M. DEMOGRAPHICS D.C. Schultz

4:45 P.M. P&O EDUCATION FUNDING T.J. Supan

5:15 P.M. DISCUSSION

6:00 P.M. BUFFET DINNER - CURTIS ROOM

**SUNDAY**  
January 21

### FOCUS GROUP SESSION

8:00 A.M. COFFEE & DANISH

8:30 A.M. - 11:30 A.M.  
Focus Group #1 T. Supan  
"Funding O&P Education"

Focus Group #2 J. Michael  
"Research, Development &  
Technology Transfer"

Focus Group #3 I. Schoenwald  
"Educational Process"

Noon BUFFET LUNCHEON  
Presentation by Focus  
Groups 12:30 P.M. - 2:30 P.M. Louis Phillips  
Facilitator

3:00 P.M. FOCUS GROUPS RECONVENE J.W. Michael

5:30 P.M. ADJOURN

**MONDAY**  
January 22

### GENERAL SESSION

8:00 A.M. COFFEE & DANISH

8:30 A.M. - 11:30 A.M.  
FOCUS GROUPS DELIVER  
FINAL REPORT J.W. Michael

ACTION PLAN DEVELOPED

---

# APPENDIX D

---

## Education Conference

### FOCUS GROUP #1

#### *Funding O&P Education*

Facilitator, T. Supan

1. AMTOWER, D.
2. BART, T. R.
3. CHAGNON, K.
4. DRALLE, A.
5. FENTON, J.
6. GRUMAN, G.
7. HOLMES, D.
8. NIELSEN, J.
9. PIKE, A.
10. LA TORRE, R.
11. SCHULTZ, D.

### FOCUS GROUP #3

#### *Educational Process*

Facilitator, Ira Schoenwald

1. ALTMAN, R.
2. BERGER, N.
3. BRNCICK, M.
4. CLARK, Darrell
5. KAPP, S.
6. RACETTE, W.
7. NEUMANN, W.
8. OGLESBY, D.
9. RUSSELL, R.
10. THRANHARDT, T.
11. BARRINGER, W.
12. SPIERS, R.

### FOCUS GROUP #2

#### *Research/Development & Technology Transfer*

Facilitator, J. Michael

1. BILLOCK J.
2. CLARK, Dennis
3. LEBLANC, M.
4. LIN, R.
5. LUNSFORD, T.
6. PRITHAM, C.
7. SCHULTZ, C.
8. STAATS, T.
9. EISMA, W.
10. NOVOTNY, M.

### OBSERVERS

1. PANTON, H.
2. SCOTT, G.
3. STILLS, M.
4. WILSON, A.B.

### STAFF

1. HOREN, I.
2. CULBERTSON, A.
3. McKONLY, N.
4. WEBSTER, S.