10-28-2009

Advanced Education & Research Training Initiative [AERTI] 2009

Mark Daniel Geil
Kennesaw State University, mgeil@kennesaw.edu

John W. Michael
Northwestern University

Advanced Education & Research Training Initiative [AERTI] 2009

FINAL REPORT
10/28/2009

Geil, Mark D. and John W. Michael, Eds. (2009) Advanced Education and Research Training Initiative 2009. Washington, DC, American Academy of Orthotists and Prosthetists.

AERTI•2009

Contents

This Report was made possible by the American Academy of Orthotists and Prosthetists through a grant (Grant Number H235K080004) from the U.S. Department of Education. The contents do not necessarily represent the policy of the Department of Education, and do not imply endorsement by the Federal Government.

AERTI•2009

Introduction:

The American Academy of Orthotists and Prosthetists has long recognized the valuable synergy between research and education, and the mutual importance of each in advancing the field. Consequently, a focal point of an Academy grant initiative funded by the U.S. Department of Education has been a systematic analysis of research capacity and advanced education. A grant project in 2004 convened a series of meetings and produced the Advanced Education and Research Training Initiative (AERTI) report.

Continuing the initiative, a multidisciplinary and multinational group of experts convened in Chicago July 17-19, 2009 to review the 2004 AERTI Report, evaluate its recommendations in light of the evolution of the profession over the past five years, and to make suggestions for consideration by the field that would accelerate the pace of progress. This group included clinicians, researchers and educators with widely varying backgrounds, training, and experiences.

There was broad consensus that the original recommendations from the AERTI, summarized below, remain sound. In addition, noteworthy progress has been made in recent years toward several of the goals defined in the AERTI. Finally, there was broad agreement that the philosophy articulated in the AERTI report remains sound:

> "Fostering advanced education and research within the field is important because the resulting infrastructure will lead to higher quality, more effective health care that is of better value to society. This would create a culture within the profession that values science and expects clinicians to consume and apply research."

AERTI Recommendations:

The 2004 AERTI report noted several broad challenges to be addressed:

- The limited quantity of high quality research impedes the adoption of Evidence Based Practice (EBP) in the field.
- Few current faculty members in orthotics and prosthetics (O&P) hold advanced academic degrees.
- Few O&P clinicians have advanced academic degrees.
- Practice degrees are often confused with academic degrees.

Concern was also expressed with the fragile nature of existing O&P entry-level education programs, particularly those in less established institutions or in settings with limited research resources on site. The norm that O&P faculty are generally untenured, carry very heavy teaching loads, and exist in departments with very lean staffing was noted.

Three specific funding barriers were identified that might be addressed through existing federal funding mechanisms that have supported similar efforts in related health care fields:

1. Program grants to assist existing schools in advancing their curriculum
2. Student training grants for advanced academic degrees
3. Career development awards enabling current O&P faculty to earn advanced degrees

In addition, the 2004 AERTI report recommended provision of additional funding to expand available education about clinically relevant research and Evidence Based Practice to:

- Train entry-level students to evaluate research
- Mentor resident clinicians who are applying research
- Inform practicing clinicians about relevant research

Specific barriers to earning advanced degrees included the financial costs in lost work time and tuition and the need to study overseas to obtain a PhD with a primary focus on clinical O&P topics. The need for existing faculty to receive substantial time off, release from duty, and appropriate stipends to pursue advanced academic degrees was recognized.

Finally, three primary barriers to the application of research in patient care settings were identified:

1. The quality and quantity of existing clinical evidence is insufficient
2. Understanding of research and EBP principles is limited
3. Clinicians rarely make direct contributions to research

Progress since AERTI 2004:

The group agreed that significant progress had been made toward achieving the AERTI goals. For example, in the time since the original report it has become possible for a prosthetist/orthotist to obtain a Ph.D. in Rehabilitation Science at the University of Washington and a Ph.D. in Applied Physiology at the Georgia Institute of Technology. Not only do these institutions encourage a dissertation topic focused

on O&P-related topics, but also several students are currently enrolled. In addition, Georgia Tech has been awarded a substantial, multi-year student training grant for their new Ph.D. program.

Primarily due to other Academy grant initiatives, awareness about the value and principles of EBP has increased significantly within the field. The need for better objective outcome measures is now widely recognized within the profession and by research funding agencies. Several clinicians have earned academic master's and doctoral degrees since 2004 and a significant number are currently enrolled in master's and PhD programs.

Recommendations:

While encouraged by the progress to date, the group unanimously agreed that further effort is required to fully achieve the original AERTI goals. Furthermore, experience since 2004 has enabled identification of some additional strategies deemed likely to accelerate these positive changes. These recommendations are summarized below under the headings of three general goals:

Goal I: Facilitate use of evidence in clinical practice
Goal II: Facilitate generation of clinically relevant applied research
Goal III: Facilitate increased inter-disciplinary contributions

Goal I: Facilitate use of evidence in clinical practice

The perceived value and use of evidence in clinical O&P practice has grown considerably in the past five years. This progressive change in the field facilitates the implementation of new strategies to accelerate the use of evidence in clinical practice.

Two broad approaches to accomplishing this goal were identified: first, awareness and application of the existing body of evidence should be promoted; second, new tools and products should be developed alongside future research to promote knowledge translation.

Strategies

*1. Promote awareness of current research results in journals beyond the **Journal of Prosthetics and Orthotics***

Because access to journals is limited, a perception exists that there is little evidence being produced to inform O&P practice. Awareness could be promoted through a monthly Literature Update with links to abstracts and full articles where available.

The broad nature of O&P practice results in research results that are reported in widely disparate journals in addition to field-specific publications. This can contribute to the misperception that there is little evidence being produced to inform O&P practices. Furthermore, it is unrealistic to expect every clinician, every faculty member, and every student to subscribe to dozens of costly scientific journals in search of the O&P 'pearls' that might appear infrequently.

One initial step to address this issue would be for a group of interested subject-matter experts - ideally representing clinical, research, and teaching perspectives – to provide monthly summaries of new articles of interest. It was noted, with regret, that the now-defunct RECAL Awareness program at the University of Strathclyde can no longer fill this need.

A monthly vehicle providing a concise summary and citation for those articles considered as particularly relevant to clinical practice could be transmitted electronically to interested persons. Ideally, at least one key article would be made available in full text and illustration format, with appropriate copyright considerations. An ad hoc sub-group from the Great Barriers Meeting volunteered to develop a detailed protocol for this purpose and to present it to the Academy Board for consideration.

Other Allied Health fields have developed sections in their primary clinical journals highlighting "Tips From Other Journals" that provide concise summaries of emerging evidence. The *JPO* might implement a similar section, perhaps facilitated by an Associate or Section Editor responsible for this task.

In addition, the group expressed concern that access to complete scientific articles outside of the core O&P journals is severely restricted for the overwhelming majority of US clinicians, who are employed in private sector clinics. Most CPOs must purchase individual scientific articles of interest at up to $30 per copy, which provides a substantial disincentive to read primary research publications. In countries where the government is the primary payer, such as the UK, all contractors with the National Health System have free access to journal article reprints and therefore this barrier does not exist. It would be useful if contracting with Medicare or the Veterans Administration provided such access to the evidence.

2. Develop and promote secondary knowledge sources

Secondary knowledge sources such as Critically Appraised Topics (CATs) are concise, accessible, clinically relevant mechanisms to promote clinicians' use of evidence that have proven to be useful to related health care professions. [www.otcats.com/topics/index.html] CATs on O&P topics could be made publically available on a central Internet repository for ready access by clinicians, and kept current by development of a mechanism for timely revision. While interested clinicians and academicians could submit CATs for consideration, master's level O&P students with appropriate faculty supervision might also develop them.

Students have ready access to academic literature and would likely be more interested in keeping abreast of each new CAT if they had a positive experience assisting in their creation.

O&P researchers should be encouraged to develop secondary knowledge tools and products that would more broadly disseminate their primary research. An example might include a brief summary of research findings that is written upon publication of one's primary research article and forwarded to a trade magazine, which might lead to a feature article that is widely read by clinicians.

3. Promote dissemination and refinement of selected residents' projects

As currently defined, the resident directed study project sometimes results in material that has the potential to contribute to the evidence base. Some resident projects could be published in some form with minor modifications, and in some cases strategies for research and publication might be augmented by mentoring. Methods may be developed for established researchers to mentor residents either during the project (with consent of the clinical supervisor) or following submission. Mentees might create groups of similarly interested residents who could collaborate on a more extensive project.

4. Develop an independent central repository of O&P knowledge and a dedicated search engine.

As knowledge sources proliferate, the work required to access them must be minimized or access by busy clinicians will likely diminish. One method for efficient access could be a single web location with searchable listings of CATs, Evidence Notes, SSCs, ISPO consensus conference reports, and similar vetted knowledge sources. The site might also include networking tools such as online answer forums.

5. Facilitate discussion of research in multiple settings

A culture of research is advanced when clinicians actively discuss and critique it. Such discussions might occur in Journal Clubs, possibly through Academy Societies or Chapters. In addition, research posters facilitate discussion when they are highlighted at meetings with poster sessions. A carefully selected keynote speaker, perhaps from a different discipline, could enhance research discussion at the Academy Annual Meeting and Scientific Symposium.

Goal II: Facilitate generation of clinically relevant applied research

Fundamental research in the neurosciences, biomechanics, and physiology of O&P care continues to advance, usually as a result of externally funded academic research. Product research and development by privately funded manufacturers has produced many noteworthy technical advances in recent decades. Nonetheless,

there is a pressing need for more clinically relevant applied research that would enable clinicians to conduct Evidence Based Practice.

A three-pronged approach to achieving this goal would include:

- Enhancing the active involvement of practicing clinicians in the development of applied research
- Increasing available funding for applied research in O&P
- Expanding the capacity for applied research in O&P

Strategies

1. Enhance the clinical relevance of research topics

The group acknowledged the significant contribution of the ongoing series of Academy-sponsored State-of-the-Science Conferences to informing clinicians, consumers, and researchers of the best available evidence and prioritized research topics regarding specific practice-related questions. It was felt that further efforts to encourage researchers to focus on clinically relevant topics would be useful.

Having consumers and clinicians actively involved in the generation of applied research topics would address a number of identified barriers. This might be done by engagement with user networks such as the Amputee Coalition of America or the Spina Bifida Association, or by development of user forums at professional meetings such as the customary Consumer Day at World Congress meetings of the International Society for Prosthetics & Orthotics. Similarly, input could be solicited at professional venues such as the Academy Annual Meeting, from professional online forums, or by formation of clinical advisory groups.

Research into "what clinicians and users want to know" would not only result in publications that are perceived as valuable by clinicians and consumers. Fostering their active involvement prior to publication might generate secondary benefits such as easier recruitment of subjects, which is often one of the greatest challenges in O&P studies.

2. Increase funding for clinically relevant applied research

Lobbying by the Academy and other national organizations to encourage increased funding for applied O&P research would enable a larger number of interested researchers to explore clinically relevant questions. A recently announced five year, $5,000,000 NIH competition for research on outcome measures in O&P cited several Academy initiatives including the grant-supported State-of-the-Science Conference on Lower Limb Prosthetic Outcome Measures. Continuing interaction with a range of potential funding sources is very important to accelerate available scientific results that truly inform clinical practice.

The recent formation of philanthropic organizations such as the Orthotic Prosthetic Education & Research Foundation (OPERF) could be a valuable source for small-scale pilot studies targeting clinically relevant topics. Having completed a pilot that established proof of concept for novel applied research and refined the outcome measures selected would enhance researchers' chances of successful competition for subsequent external funding.

3. *Expand the capacity for applied research in O&P*

Because O&P interventions are often very interesting to researchers, it may be possible to attract existing researchers and laboratories working in related areas to undertake more O&P relevant applied research. Faculty and staff at our O&P schools might take the lead in implementing this strategy. One mechanism could be providing lists of applied research topics to thesis/project supervisors in related fields. Another approach might be for our current O&P-centric researchers to mentor colleagues from related fields who are pursuing research careers, such as Northwestern University's Prosthetics Research Laboratory and Rehabilitation Engineering Research Center have done with great success for many years.

Given the strong and growing interest among leading clinicians in becoming more involved in research, it may also be possible to enable clinicians to play a more active role in selected research projects thereby freeing up additional time for our small cadre of dedicated O&P researchers. One major contribution would be for clinician collaborators to aggressively recruit appropriate subjects to increase the power of O&P related studies.

Another approach to be explored would be having professional researchers coordinate studies with interested clinicians, perhaps into the utility of available outcome measures. The academic researcher is well situated to finalize the protocol, obtain Institutional Review Board approvals, and analyze the data. The clinician has ready access to patients, expertise in assessing the effectiveness of the intervention, and an interest in supplementing subjective evaluations with more objective measures.

If a small pilot with 3 clinics applying a single outcome measure to one patient each proved successful, it would be logical to expand the trials to multiple centers across the country. Properly structured and implemented, this could result in aggregate data from 100 local clinical studies with n=1. Secondary benefits would include the active engagement of 100 clinicians in a scientific study, and the long-term interest that could result in accelerated change into a clinical culture that values scientific research.

Several practical means to involve clinicians in differing geographical locations with research were identified. Mechanisms might include both synchronous and asynchronous e-Meetings using online resources, email discussions, and audio or multimedia meetings. The successful implementation of advanced distance learning

technologies at several of our O&P schools would facilitate such efforts. A similar approach could be used to educate and mentor both residents and interested certifies in research methods.

Goal III: Facilitate increased inter-disciplinary contributions

The group consensus confirmed the original AERTI recommendations and strategies toward achieving this goal. The positive impact of prior grant efforts to increase awareness of the field among potential entrants from related fields and the independent decision by the field to move to an entry-level masters program were noted, along with the general enhancements to the research-related curriculum within existing entry-level programs. There was unanimous agreement that these successful strategies should be continued into the future.

Two additional strategies were proposed to expand the positive effect of cross-disciplinary mentorship and interaction:

- Fostering partnerships with seasoned multidisciplinary educators to mentor O&P faculty
- Refining the current time requirements for supervised clinical experiences to encourage greater participation by established faculty and researchers

<u>Strategies</u>

1. *Foster a partnership with seasoned educators, regardless of discipline, to mentor O&P faculty*

Like many other health professions, O&P faculty have traditionally been recruited from clinician ranks but most have little formal training in pedagogical principles. Mentoring by experienced educators, particularly those with formal training in modern teaching theory would be helpful to existing faculty. Because most college and university settings have many such experts on staff, this is a resource that should be locally available.

2. *Refine the current time requirements for supervised clinical experiences to encourage greater participation by established faculty and researchers*

While the group acknowledged that the National Commission on Orthotic and Prosthetic Education is in the process of refining these requirements in connection with the new master's level standards, there was widespread agreement that residency requirements could present a formidable barrier to interested academic faculty or researchers from related fields who desire to become competent as entry-level clinicians. It would be preferable if options to complete the necessary supervised clinical experience on a part-time or intermittent-full time basis were formally established. The group felt that clinically qualified faculty with a strong

background in related fields would be more likely to conduct and disseminate research in a manner that fostered application of the results in daily clinical care.

Summary:

A multinational, multidisciplinary group of clinical and academic experts reviewed the AERTI report and affirmed its fundamental goals and strategies, noting that significant progress has been made in the past five years toward "fostering advanced academic education and research within the field". Three days of discussion and debate resulted in consensus on specific strategies to advance the AERTI initiative that would facilitate the use of evidence in clinical practice, generate clinically relevant applied research, and increase inter-disciplinary contributions.

Appendix: Participant Biosketches

Timothy Michael Bach, BSc(Kin), MSc(Kin), PhD, FISPO, was born in Canada in 1953. He received Bachelor and Master of Science degrees from Simon Fraser University in Vancouver, Canada, and completed his PhD at La Trobe University in 1994. Dr. Bach is currently an Associate Professor in Biomechanics in the School of Human Biosciences at La Trobe University in Melbourne, Australia. He was Head of the National Centre for Prosthetics at La Trobe University from 1994 to 2001. Dr. Bach's research interests include the biomechanics of normal and amputee walking, the mechanical properties of muscle, electromyography and muscle fatigue, biomechanics of able-bodied and disabled sports, and reliability of clinical assessment techniques, particularly observational gait analysis. He also has a recreational interest in the biomechanics of swimming. Dr. Bach is a Fellow of the International Society for Prosthetics and Orthotics and member of the International Society for Biomechanics, and the Australia and New Zealand Society of Biomechanics. He is a member of the Editorial board of the journal *Prosthetics and Orthotics International.* Dr. Bach was a member of the Canadian national swimming team from 1971 to 1974 including the 1971 Pan American Games and 1972 Olympic Games teams. He was a member of the British Columbia provincial water polo team from 1974 to 1979. More recently he has taken up cricket and is a life member of the STC South Camberwell Cricket Club in Melbourne.

Stefania Fatone, Ph.D., B.P.O.(Hons.), is a Research Assistant Professor in the Department of Physical Medicine and Rehabilitation at Northwestern University. Dr. Fatone qualified as a prosthetist/orthotist and completed her Ph.D. at La Trobe University in Melbourne, Australia. She has clinical and teaching experience in O&P, as well as experience in clinical gait analysis. Dr. Fatone conducts research at the Northwestern University Prosthetics Research Laboratory and Rehabilitation Engineering Research Program. Her research examines the effects of prostheses and orthoses on human locomotion in order to increase understanding, establish efficacy, and improve effectiveness of prosthetic and orthotic interventions for people with disabilities.

Mark D. Geil, PhD, is Associate Professor and Director of the biomechanics program at Georgia State University in Atlanta. Dr. Geil's research on the locomotion biomechanics of persons with lower limb loss has established insight into the modeling of prosthesis material properties, dynamic alignment of lower limb prosthetic components, and amputee anthropometric measurement. Dr. Geil also addresses clinically applied issues such as rehabilitation protocols in children with limb loss or dysfunction and evidence-based practice. Dr. Geil chairs the Academy's Research Education Committee and is co-Principal Investigator of the Academy's grant from the Department of Education.

Brian J. Hafner, PhD, is an Assistant Professor in the University of Washington (UW) Prosthetics-Orthotics Division. Dr. Hafner's research interests include the

assessment of performance, function, and quality-of-life in persons with amputation and the associated influence of orthotic and prosthetic intervention on clinical outcomes and the of development ecologically valid outcome measures and instruments suited to measuring interventions outside of the laboratory environment. His teaching responsibilities include courses related to critical evaluation of the literature, literature review, research designs, outcome measures, evidence-based practice, and engineering concepts. Dr. Hafner is also a Board Member for the Orthotic and Prosthetic Education and Research Foundation (OPERF).

Donald E. Katz, CO, LO, FAAOP, is an Assistant Administrator at Texas Scottish Rite Hospital for Children (TSRHC), Dallas, TX. He earned his BS degree from the University of Texas Southwestern Medical Center's Prosthetic and Orthotic program, after attending the University of Texas at Austin. He is a Fellow with the Academy, an Associate Fellow with the Scoliosis Research Society, and a past president of both the national Academy and the Texas Chapter of the Academy. Mr. Katz was the recipient of the Academy's Award for Research in 1997, and is a multiple winner of the Honorary Thrandhardt Lecture Award. He has published original research in the journal of *Spine*, the *Journal of Pediatric Orthopaedics*, the *Journal of Prosthetics and Orthotics*, the journal of *Gait and Posture*, and the *Journal of Bone and Joint Surgery*.

Géza F. Kogler, PhD, CO, LO, LPed(IL) is a Research Scientist in the School of Applied Physiology at Georgia Institute of Technology. He is the Director of the Clinical Biomechanics Laboratory and also serves as an instructor for the orthotic and prosthetic masters and doctoral programs. Dr. Kogler received his Ph.D. in bioengineering/biomechanics from the University of Strathclyde in Glasgow Scotland (1998) and his baccalaureate degree from Wayne State University in Detroit (1982). His orthotic prosthetic education is from Northwestern University Prosthetics and Orthotics (1983) and Florida International University. Dr. Kogler has received research awards from the International Society of Biomechanics, International Society of Prosthetics and Orthotics and the American Biomechanics. His current research interests are powered orthotic systems, foot biomechanics, and orthoses for the lower extremity and the foot. He has written several book chapters and numerous scientific papers. In addition to his research interests he has been involved in orthotic prosthetic education on the international and national level serving as a consultant for the first Masters of Science Program at Georgia Tech where he proposed the curriculum and strategic plan. At the baccalaureate level he designed the curriculum for O&P baccalaureate program at St. Petersburg College and the orthotics curriculum for Florida International University.

John Michael, MEd, CPO/L, is a Licensed and Certified Prosthetist-Orthotist who has practiced as a clinician and educator in a variety of private sector and university settings over the past 30 years, published more than fifty peer reviewed articles and text chapters, and lectured widely in the US, Canada, and abroad on a variety of prosthetic and orthotic topics. He has served as an editor and contributor to the *Atlas of Orthoses*, the *Atlas of Limb Prostheses*, and the basic text titled *Orthotics &*

Prosthetics. Mr. Michael is active in a number of professional societies and disability groups and has been a member of the Academy (AAOP), the Canadian Association of Prosthetists and Orthotists (CAPO), and the International Society for Prosthetics and Orthotics (ISPO) since the 1970's. He has previously served as President of the Academy, as an official consultant to the American Academy of Orthopaedic Surgeons (AAOS), and as an advisor to the National Institutes of Health (NIH). He is a Chair Emeritus of the US National Member Society of ISPO, was named as a Fellow of that organization in 1990, and has served as the ISPO Honorary Secretary since 2007. He is a recipient of the AAOP's 1992 "Outstanding Clinician Award," the 1997 "Distinguished Practitioner Award," the 2007 "Outstanding Researcher Award," and was named a Fellow of the Academy in 1998. Formerly an Assistant Clinical Professor and Director of the Department of Prosthetics and Orthotics at Duke University Medical Center in North Carolina, Mr. Michael is now adjunct faculty at the Georgia Institute of Technology and President of "CPO Services, Inc.," an independent clinical consulting firm located in the Chicago area.

Christopher Morris MSc DPhil, is a Research Fellow in the Department of Public Health and Wolfson College, University of Oxford, and Principal Orthotist at the Nuffield Orthopaedic Centre. He has broad interests across health services research, including evidence-based practice in orthotics, measurement issues in childhood disability, qualitative research, and the appraisal and use of patient reported outcome measures. Dr. Morris' postdoctoral research involved the development of the Oxford Ankle Foot Questionnaire for Children. He edited and wrote much of the book *Paediatric Orthotics* which was published in the series *Clinics in Developmental Medicine*.

Mark D. Muller, CPO, FAAOP, graduated from S.U.N.Y. at Stony Brook in 1993 with a Bachelor's degree in Material Science and Engineering. He began his prosthetic and orthotic career by volunteering at Eastern O&P Labs on Long Island, NY where he soon became the lead Prosthetic Technician. In 1995, Mr. Muller completed both the Orthotic and Prosthetic Certificate programs at Northwestern University. Immediately after, he became an instructor of Orthotic Education for Northwestern. He then became a clinician for the La Jolla, CA office of SCOPe in 1997. Within three years he was elevated to Office Manager while maintaining a full clinical load in O&P. Mr. Muller then pursued his engineering and education passion by joining Össur in 2000. Over the next few years he worked in both the Technical Services and R&D departments. He was later elevated to manager of the Technical Services Department implementing numerous educational and clinical projects including the very successful online education platform of the Össur Academy. In January, 2006 Mr. Muller joined the Cal State Dominguez Hills Prosthetics and Orthotics program as an instructor of Prosthetic Education. He is currently the lead Prosthetic Instructor concentrating his teaching responsibilities to Normal and Pathological Gait, Biomechanics, Transtibial and Transfemoral prosthetic application and theory. Mr. Muller has served on the American Academy of Orthotists and Prosthetists' Board of Directors since 2006. He is currently the Vice President, the Chair of the Education Development Council, and a member of several committees within the

Academy. He lives in Mission Viejo, CA, with his wife Kate DeYoung-Muller, CPO, and their three sons.

Sam Phillips, PhD, CP, FAAOP, is a researcher at the James A. Haley HSR&D/RR&D Center of Excellence, Maximizing Rehabilitation Outcomes. Previously, he was the Dean of the College of Orthotics and Prosthetics at St. Petersburg College. He founded and developed the program starting in 2005, gaining CAAHEP accreditation and growing it to the largest O&P degree program in the country. He completed this doctoral research at Rutgers University in the prosthetics laboratory developing a prosthetic hand system based on myokinetic signals as an alternative to electromyographic techniques. Clinically, he had many years of experience in prosthetics at Kessler Medical Institute for Rehabilitation, Moss Rehabilitation Institute for Rehabilitation, and Union Memorial Hospital. Current research interests include development and evaluation of new technology, outcome measures for orthotics and prosthetics, and novel manufacturing techniques.

Phil Stevens, M.Ed., CPO, FAAOP, is a graduate of the University of Washington's prosthetics and orthotics program. After completing his orthotic residency in Hartford, Connecticut, he spent several years practicing within the Texas Medical Center in Houston Texas. While in Texas, he completed his prosthetic residency and secured a masters degree in Allied Health Education and Administration from the University of Houston. He has published numerous articles in peer reviewed journals as well as industry trade magazines and presents regularly at Academy functions. He currently serves on the Academy's Board of Directors, the Clinical Content Committee, and the Research Education Committee.

Chris Robinson, CO, MBA, is a graduate of the University of Iowa holding a bachelors of science in sports medicine. Upon completion of his bachelor's degree he worked as a clinical instructor in Athletic Training at North Central College while pursuing his masters of business administration. Chris then attended the orthotic and prosthetic certificate programs at Northwestern University and completed subsequent residencies at Scheck & Siress in Chicago, IL providing care at several facilities including RUSH University Medical Center, Shriners Hospital for Children and La Rabida Childrens Hospital. In 2008, he assumed his current role as a faculty member at Northwestern University.