DREW RONALD ENGLES, M.D.

PRACTICE

AKRON CHILDREN'S HOSPITAL

Akron, OH

Department of Orthopedic Surgery

September 1, 2015 – Present

Practice limited to pediatric hand, upper extremity and reconstructive microvascular surgery. Consultant - hand and upper extremity clinic. Consultant - University of Akron Department of Athletics.

SUMMIT HAND CENTER

Akron, OH

Crystal Clinic, Inc.

March 15, 2001 – August 31, 2015

Practice limited to surgery of the upper extremity and reconstructive microvascular surgery. Attending physician at Summa Health System, Akron General Medical Center, Medina General Hospital and Children's Hospital Medical Center of Akron.

HAND CARE ASSOCIATES

Carol Stream, IL

Orthopaedic Associates of Dupage, Ltd.

September 1997 – February 28, 2001

Practice limited to surgery of the upper extremity and reconstructive microvascular surgery. Attending physician at Central Dupage Hospital in Winfield, IL and Edward Hospital in Naperville, IL. Consulting physician at Marianjoy Rehabilitation Hospital, Wheaton, IL. Team physician St. Francis high school, Wheaton, IL.

PROFESSIONAL TRAINING

THE INDIANA HAND CENTER

Indianapolis, IN

Fellowship in Hand and Microvascular Surgery

August 1, 1996 – July 31, 1997

One year fellowship devoted to training in upper extremity and microvascular reconstructive surgery. Full exposure to congenital, rheumatoid, traumatic, degenerative and neuromuscular disorders of the hand, wrist, elbow and shoulder. Experience in replantation, free tissue transfer, and flap coverage.

AKRON GENERAL MEDICAL CENTER

Akron, OH

Residency in Orthopaedic Surgery

July 1, 1991 – June 30, 1996

Five-year residency in orthopaedic surgery. Experience includes rotations at Akron General Medical Center, Children's Hospital Medical Center of Akron and Summit Hand Center. ACLS and ATLS Certification. Member: AGMC Medical Library Committee, AAOS Resident Member.

EDUCATION

INDIANA UNIVERSITY SCHOOL OF MEDICINE

Indianapolis, IN May 15, 1991

M.D.

Medical Sciences Program (1987-1989) with emphasis on research and teaching. <u>Awards</u>: AMA Research Scholars Award (AMA Research and Education Foundation), Foundation Medical Scholarship (Anna Rott Fund), Academic Achievement Award in Research. <u>Activities</u>: Intramural Basketball, Tutor – I.U. Department of Athletics. Member: AMA.

HARVARD UNIVERSITY

Cambridge, MA

A.B. cum laude

June 11, 1987

<u>Field of Concentration:</u> Biology. Extensive course work in ancient and classical art and archaeology.

<u>Awards:</u> Dean's List – four consecutive years, Harvard College Scholarship 1985-86 and 1986-87, N.Y.C. Touchdown Club Scholar Athlete Award 1983. <u>Activities:</u> Varsity Football, Varsity Track & Field, Frosh

Football, House Basketball, Squash and Softball, Institute of Politics Study Group, Vice President Crimson Merchandising, Research Asst. – Dept. of Botany. <u>Member:</u> Harvard Varsity Club, New York Academy of Sciences.

ACADEMIC EXPERIENCE

NORTHEASTERN OHIO UNIVERSITIES COLLEGE OF MEDICINE

Rootstown, OH

<u>Clinical Instructor of Orthopaedic Surgery</u> – involved with the instruction of medical students on clinical rotations, gross anatomy dissections, and sessions on physical diagnosis. Summer 1994 – Spring 1996

INDIANA UNIVERSITY

Bloomington, IN

<u>Associate Instructor of Anatomy</u> – responsibilities included biweekly lectures as well as the demonstration of human anatomy through the use of human cadavers, models and prosected organs. Other duties entailed designing practical exams, proctoring and grading. Fall 1988 – Spring 1989.

MONROE COUNTY COMMUNITY SCHOOL CORPORATION

Bloomington, IN

<u>Substitute Teacher</u> – served as a substitute teacher at junior and senior high schools in several disciplines. Five-year certificate #0153189. Spring 1988.

RESEARCH EXPERIENCE

AKRON GENERAL MEDICAL CENTER - Calhoun Research Laboratory

Akron, OH

Orthopaedic Research Laboratory – assisted in designing experimental protocol to study helical geometry of soft tissue components in an analytical model. Designed pull out study for soft tissue bone anchors. Summer 1994 – Spring 1996.

I.U. SCHOOL OF MEDICINE – Department of Surgery

Indianapolis, IN

<u>Pediatric Surgery Section</u> – projects included: development of combined immunotherapy & chemotherapy protocol for treating murine neuroblastoma, long term follow-up on surgical treatment for Hirschsprung's disease, assisted in small bowel transplant in rats. Summer 1990.

I.U. SCHOOL OF MEDICINE – Medical Sciences Program

Bloomington, IN

<u>Pharmacology Section</u> – determined the effects of inhalational anesthetics in the Swiss Webster mouse. Summer 1988.

U.M.D.N.J. - Robert Wood Johnson Medical School

Piscataway, NJ

<u>Department of Environmental and Community Medicine</u> – studied the effects of Dioxin (TCDD) on glucuronosyl transferase in hepatic microsomes. Summer 1986.

PUBLICATIONS

Steroid UDP-Glucuronyl Transferase (UDPGT) Activity and Antiestrogenic Effects in TCDD Treated Guinea Pigs and Hamsters. T.H. Umbreit, D. Engles, E.J. Hesse and M.A. Gallo; <u>The Toxicologist</u> 7:158 (1987).

Effect of Inhalation Anesthetics on the UDP – Glucuronic Acid Pathway in Mouse Liver. J.B. Watkins and D. R. Engles; The Toxicologist 9:8 (1989).

Species comparison of steroid UDP-glucuronyl transferase: correlation to TCDD sensitivity. T.H. Umbreit, **D. Engles**, A. Grossman and M.A. Gallo; <u>Toxicology Letters</u> 48:29-34 (1989).

An Early Dynastic Cemetery at Kafr Ghattati. D.R. Engles; <u>Journal of the American Research Center in Egypt</u> Vol. XXVII:71-87 (1990).

Effect of Volatile Anesthetics on the Hepatic UDP-Glucuronic Acid Pathway in Mice. J.B. Watkins, D.R. Engles and L.V. Beck; <u>Biochemical Pharmacology</u> Vol. 40 4:731-735 (1990).

Hirschsprung's Disease: Evaluation of Mortality and Long Term Function in 260 Cases. F.J. Rescorla, A.M. Morrison, D. Engles, K.W. West and J.L. Grosfeld; <u>Archives of Surgery</u> Vol. 127:734-742 (1992).

Familial Hirschprung's Disease: 20 Cases in 12 Kindreds. S.A. Engum, M. Petrites, F.J. Rescorla, J.L. Grosfeld, A.M. Morrison, D. Engles; Journal Pediatric Surgery, Oct. 28 (10): 1286-90 (1993).

Fixation of Complex Elbow Fractures, Part I. H. Hastings and **D. Engles**; <u>Hand Clinics</u> Vol. 13 4:703-719 (1997).

Fixation of Complex Elbow Fractures, Part II. H. Hastings and **D. Engles**; <u>Hand Clinics</u> Vol. 13 4:721-735 (1997).

Fixation of Complex Elbow Fractures. H. Hastings and D. Engles; Hand Prints 15:63 (1998).

Carpometacarpal Joints (Excluding Thumb), M.I. Boyer and D. Engles, Surgery of the Arthritic Hand and Wrist, A.P.C. Weiss and H. Hastings (Ed.s) Lippencott, Williams & Wilkens; Philadelphia, 2001.

Resistance to Activated Protein C and Digital Thrombosis. J.A. Rodgers, D. Engles, R.S. Idler; <u>Iowa Orthopaedic Journal</u> 22:90-3 (2002).

Flexor Tendon Repair and Rehabilitation – State of the Art. M.I. Boyer, J.W. Strickland, **D. Engles**, K. Sachar, F.J. Leversedge; <u>Journal Bone & Joint Surgery</u>, 84A (9): 1684-706 (2002).

Flexor Tendon Repair and Rehabilitation – State of the Art: <u>Instructional Course Lectures 2003</u>: 52: 137-161. M.I. Boyer, J.W. Strickland, **D. Engles**, K. Sachar, F.J. Leversedge.

Use of Cannulated Screws in Hand and Wrist Surgery, D. Engles, <u>Atlas of Minimally Invasive Hand and Wrist Surgery</u>, J.T. Capo and V. Tan (Ed.s), Informa Healthcare; New York, 2008

Reconstruction after Flexor Tendon Injury – State of the Art: <u>Instructional Course Lectures 2009</u>: 58:61-72. **D. Engles**, E. Diao, J.G. Seiler 3rd, J. Taras

Suppurative Flexor Tenosynovitis from Tsumakurella and Trichosporon: Case Report and Literature Review, R.R. Watkins D. Engles, West Virginia Medical Journal; 105:16-18 (2009).

Fractures and Dislocations: Wrist, R.P. Calfee, R. Berger, P.K. Beredjaklian, D.R. Engles, J.A. Greenberg, J.E. Isaacs, C. McDaniel, T.D. Rosental, P. Blazer and O. Pate, <u>ASSH Manual of Hand Surgery</u> W.C. Hammert, R.P. Calfee, D.J. Bozentka and M.I. Boyer (Ed.s) Lippincott, Williams & Wilkins; Philadelphia, 2010.

Bone Grafting and Bone Graft Substitutes, D.R. Engles and A.J. Schoenfeld, <u>ASSH Manual of Hand Surgery</u>, W.C. Hammert, R.P. Calfee, D.J. Bozentka and M.I. Boyer (Ed.s) Lippincott, Williams & Wilkins; Philadelphia, 2010.

Cartilage Grafting N. Agrawal, S. Yari, **D. Engles** and E.M. Reece, <u>Seminars in Plastic Surgery</u> 33:200-203 (2019).

PRESENTATIONS

"Anesthesia Alters Glucuronidation." J.B. Watkins and D.R. Engles. 1989 Indiana State Medical Association Annual Meeting; Indianapolis, IN.

- "Effect of Inhalation Anesthetics on the UDP-Glucuronic Acid Pathway in Mouse Liver." J.B. Watkins and D.R. Engles. 1989 National Student Research Forum; Galveston, TX. April 1989.
- "Ankle Arthrodesis: Utilization of the Ilizarov External Fixation Method in Complex Cases." D.R. Engles and D.B. Kay. 1993 American Academy of Orthopaedic Surgeons Specialty Day American Orthopaedic Foot and Ankle Society, 23rd Annual Meeting; San Francisco, CA.
- "Ankle Arthrodesis: Utilization of the Ilizarov External Fixation Method in Complex Cases." D.R. Engles and D.B. Kay. 1993 Mid-America Orthopaedic Association 11th Annual Meeting; Hilton Head, SC. April 1993.
- "Observations on the British Health Care System." D. Engles. Harvard Club of Akron, Spring Luncheon Meeting, Akron, OH. June 1995.
- "Necrotizing Fascitis." D. Engles. Akron General Medical Center, Department of Internal Medicine Lecture Series; Akron, OH. September 1995.
- "Differentiating Between Cervical Radiculopathy and Peripheral Compression Neuropathy." D. Engles. Senior Orthopaedic Presentation, Children's Hospital Medical Center of Akron; Akron, OH. April, 1996.
- "Athletic Injuries of the Hand and Wrist." D. Engles, Northeast Ohio Sports Medicine Institute Monthly Meeting; Montrose, OH. May 1996.
- "Functional Assessment of Latissimus Dorsi and Teres Major Transfer for Obstetrical Palsies." D. Engles, A. Mih, and K. Brady. 13th Annual Tri-State Hand Conference, Rudd Heart and Lung Center; Louisville, KY. May 1997.
- "Functional Assessment of Latissimus Dorsi and Teres Major Transfer in Obstetrical Palsies." D. Engles, A. Mih and K. Brady. **Chicago Hand Society**; Chicago, IL September 1997.
- "Necrotizing Fascitis." D. Engles. **Tri-Annual Meeting Indianapolis Hand Society**, Indianapolis, IN May 1999.
- "Hand Infections." D. Engles. Chicago Medical Society, Chicago IL, February, 2000
- "The Management of the Mangled Hand." D. Engles. **TMH Center for Rehabilitation,** Cortland, OH March, 2001.
- "Skeletal Fixation of Elbow Fractures." D. Engles. Frank Forshew Memorial Hand and Upper Extremity Symposium, Akron, OH May, 2001.
- "Hand and Wrist Joint Reconstruction." D. Engles. Excellence In Orthopaedics: Multidisciplinary Conference on Total Joint Replacement Summa Health System, Akron, OH September 1, 2001
- "Flexor Tendon Injury and Reconstruction: State of the Art." M. Boyer, J. Strickland, D. Engles, K. Sachar, F. Leversedge. **Instructional Course Lecture 171, American Academy of Orthopaedic Surgeons,** Dallas, TX February, 2002.
- "Surgical Intervention of Finger Injuries." D. Engles. **Introduction to Traumatic Finger Injuries.** Ravenna, OH November 2002.
- "Novel Approach To Extensor Tenolysis." D. Engles. **Indianapolis Hand Society.** Tucson, AZ October 2002.

- "Upper Extremity Arthroplasty." D. Engles. Frank Forshew Memorial Hand and Upper Extremity Symposium. Akron, OH November 2002.
- "Flexor Tendon Injury and Reconstruction: State of the Art." M. Boyer, J. Strickland, D. Engles, K. Sachar, F. Leversedge. **Instructional Course Lecture 367, American Academy of Orthopaedic Surgeons,** New Orleans, LA February 2003.
- "Considerations in Carpal Instability for the Allied Health Professional." D. Engles. **Kentuckiana Association of Hand Health Professionals 2003 Fall Symposium,** Chicago, IL September 2003.
- "Clinical Controversies II Tennis Elbow: Facts, Myths, Voodoo, and Controversies." D. Engles. American Society for Surgery of the Hand 58th Annual Meeting, Chicago, IL September 2003.
- "Flexor Tendon Injury and Reconstruction: State of the Art." M. Boyer, J. Strickland, D. Engles, K. Sachar, F. Leversedge, Instructional Course Lecture 233, American Academy of Orthopaedic Surgeons Annual Meeting, San Francisco, CA March 2004.
- "Elbow Fracture Dislocations." D. Engles. Carpe Diem Hand Club Annual Meeting, Jackson Hole, WY June 2004.
- "Tendon Surgery in 2004: A Homage to Richard Smith." Precourse #5 "Complications." D. Engles, American Society for Surgery of the Hand 59th Annual Meeting, New York, NY September 2004.
- "Hand and Wrist Injuries in Athletes". D. Engles. Akron General Sports & Physical Therapy 11th Annual Practical Approach to Sports Medicine Symposium, Akron, OH, December 2004.
- "Flexor Tendon Injury and Reconstruction: State of the Art." M. Boyer, J. Strickland, D. Engles, K. Sachar, F. Leversedge, Instructional Course Lecture 178, American Academy of Orthopaedic Surgeons Annual Meeting, Washington DC February 2005.
- "Complex Elbow Fracture/Dislocation: Diagnosis and Management of the Terrible Triad". D. Engles. 2005-New Technology in Upper Extremity Surgery: The Cutting Edge, Cleveland Orthopaedic and Spine Hospital, Lutheran Hospital, Cleveland, OH June 2005.
- "Isolated Radial Head Dislocations". D. Engles. **Carpe Diem Hand Club Annual Meeting.** Half Moon Bay, CA July 2005.
- "Distal Radius What are the Real Issues., Does Fixation and Approach Type Matter?" D. Engles. American Society for Surgery of the Hand Specialty Day Program 2006, Controversies and Complications in Upper Extremity Surgery. Chicago, IL March 2006.
- "Complex Elbow Fracture Dislocation: Diagnosis and Management of the Terrible Triad" D. Engles **T.B. Quigley Sports Medicine Society Annual Meeting** Bonita Springs FL January 2006
- "Flexor Tendon Injury and Reconstruction: State of the Art." D. Engles (Moderator), E. Diao, J. Seiler, J. Tavas. Instructional Course Lecture 365, American Academy of Orthopaedic Surgeons Annual Meeting, Chicago, IL March 2006.
- "Elbow Contracture Release", D. Engles. New Technology in Upper Extremity Surgery: The Cutting Edge, Cleveland Orthopaedics and Spine Hospital, Lutheran Hospital, Cleveland, OH May 2006.
- "Flexor Tendon Injury and Reconstruction: State of the Art." D. Engles (Moderator), E. Diao, J. Seiler, J. Taras. Instructional Course Lecture 407, American Academy of Orthopaedic Surgeons Annual Meeting, San Diego, CA March 2007.

- "Carpal Instability," D. Engles. 2007 New Technology in Upper Extremity Surgery: The Cutting Edge, Cleveland Orthopaedics and Spine Hospital, Lutheran Hospital, Cleveland, OH June 2007.
- "Novel Approach to Periarticular Injuries" D Engles The Elbow: Current Surgical Treatment of Arthritis, Instability, Stiffness and Fractures American Society for Surgery of the Hand Preconference (Course Co-Chair) Seattle, WA September 2007
- "Fractures" D Engles (Moderator) The Elbow: Current Surgical Treatment of Arthritis, Instability, Stiffness and Fractures American Society for Surgery of the Hand Pre-conference (Course Co-Chair) Seattle WA, September 2007
- "Scaphoid Fixation", D. Engles. **Treatment Options for Difficult Fractures Advanced Technology Symposium**, Cleveland, OH November 2007.
- "Flexor Tendon Injury and Reconstruction State of the Art 2008". D. Engles (Moderator), E. Diao, J. Seiler, J. Taras. Instructional Course Lecture, American Academy of Orthopaedic Surgeons Annual Meeting, San Francisco, CA March 2008
- "Zen and the Art of Flexor Tendon Surgery" J. Taras, D. Engles, E. Diao, J.G. Seiler Instructional Course Lecture IC02 American Society for Surgery of the Hand Annual Meeting Chicago IL Sept 2008
- "Vascularized Carpal Bone Grafts." D. Engles, **2008 New Technology in Upper Extremity Surgery: The Cutting Edge, Cleveland Clinic Foundation Center for Continuing Education and Lutheran Hospital,** Cleveland, OH May 2008.
 2009
- "Vascularized Carpal Bone Grafts" D. Engles, **T.B. Quigley Sports Medicine Society Annual Meeting** Naples, FL February 2009
- "Why Build an Orthopaedic Hospital?" D. Engles, Carpe Diem Hand Club 10th Annual Meeting Maui, HI July 2009
- "Tendon Transfers to Restore Shoulder Function" D Engles, **ASSH Master Series: Tendon Repair and Reconstruction**. Burr Ridge IL October 2009
- "Use of Cannulated Screws in Surgery of the Upper Extremity" D. Engles, 2010 New Technology in Upper Extremity Surgery: The Cutting Edge, Cleveland Clinic Foundation Center for Continuing Education and Lutheran Hospital, Cleveland, OH May 2010
- "Tendon Transfers to Restore Shoulder Function" D. Engles, Carpe Diem Hand Club Annual Meeting, Southampton, NY July 2010
- "Use of Cannulated Screws in Surgery of the Upper Extremity" D. Engles, **T.B. Quigley Harvard Sports Medicine Society Annual Meeting**, Naples, FL April 2011
- "Use of Cannulated Screws in Surgery of the Upper Extremity" D. Engles, **Carpe Diem Hand Club Annual Meeting**, Farmington, PA August 2011
- "Atypical Athletic Injuries of the Upper Extremity" D. Engles, **T.B. Quigley Harvard Sports Medicine Society Annual Meeting**, Fountain Hills, AZ April 2013
- "Panel on Nerve Repair 5-minute Drill" D. Engles (Moderator), W. Hammert, H. Hoyen, P. Evans, 2013 New Technology in Upper Extremity Surgery: The Cutting Edge, Cleveland Clinic Foundation Center for Continuing Education and Lutheran Hospital, Cleveland, OH May, 2013

- "External Fixation and Distraction for Recalcitrant PIP Joint Contracture" D. Engles, **2013 New Technology in Upper Extremity Surgery: The Cutting Edge, Cleveland Clinic Foundation Center for Continuing Education and Lutheran Hospital**, Cleveland, OH May, 2013
- "Atypical Athletic Injuries of the Upper Extremity" D. Engles, Carpe Diem Hand Club Annual Meeting, Key Largo, FL July 24-27, 2013
- "Forearm Pain in the Throwing Athlete" D. Engles, 14th Annual New Technology in Upper Extremity Surgery: The Cutting Edge with Advancing Translational Research. Cleveland Clinic Foundation Center for Continuing Education and Lutheran Hospital, Cleveland, OH May, 2014
- "What's so Bad with the Shotgun Approach?" D. Engles, 15th Annual New Technology in Upper Extremity Surgery: The Cutting Edge with Advancing Translational Research. Cleveland Clinic Foundation Center for Continuing Education and Lutheran Hospital, Cleveland OH June, 2015
- "What's so Bad with the Shotgun Approach?" D. Engles, Carpe Diem Hand Club 16th Annual Meeting, Santa Barbara, CA July, 2015
- "Surgical Conditions of the Hand/Wrist" D. Engles, **Sports Medicine Update: Building Young Athletes Safe and Healthy X** Akron, OH March, 2016
- "The Shotgun Approach to the PIP Joint" D. Engles, **T. B. Quigley Harvard Sports Medicine Society Annual Meeting,** Austin, TX May, 2016
- "DRUJ Instability following Pediatric Distal Radius Fractures" D. Engles, **Pediatric Hand Study Group Annual Meeting**, Philadelphia, PA February 2016
- "Top Ten Pediatric Hand Conditions" **5th Annual Akron Pediatric Orthopaedic Resident Review Course. The Austen Bioskills Lab** Akron, OH October, 2017
- "Surgery of the Elbow in the Throwing Athlete" D. Engles, **Sports Medicine Update: Building Young Athletes Safe and Healthy XII** Fairlawn, OH March, 2018
- "Surgery in the Pediatric and Adolescent Throwing Athlete" D. Engles ,**T. B. Quigley Harvard Sports Medicine Society Annual Meeting**, Miami, FL April, 2018
- "Genetic Disorders in Hand Surgery" D. Engles, Carpe Diem Hand Club 19th Annual Meeting, Charleston, SC July, 2018
- "Top Ten Pediatric Hand Conditions" 6th Annual Akron Pediatric Orthopaedic Resident Review Course. The Austen Bioskills Lab Akron, OH October, 2018
- "DRUJ Instability following Pediatric Distal Radius Fractures" D. Engles, ASSH Visiting Hand Fellows Symposium. Cleveland Clinic Foundation Center for Continuing Education and Lutheran Hospital, Cleveland, OH September, 2019

INTERNATIONAL STUDY

THE ROYAL INFIRMARY OF EDINBURGH PRINCESS MARGARET ROSE ORTHOPAEDIC HOSPITAL

Edinburgh, Scotland Fairmilehead, Scotland

<u>Visiting Resident</u> – studied with Mr. Geoffrey Hooper, F.R.C.S., attending both outpatient hand surgery clinics and operative sessions. Presented a series of lectures on physical diagnosis to the medical students at PMR Hospital. Fall 1994.

EDITORIAL EXPERIENCE

Journal of Hand Surgery

Reviewer, October 2013 – present.

COURSE ATTENDANCE

<u>Basic Microvascular Course</u>. Indiana University School of Medicine, Department of Surgery; Indianapolis, IN August 25-29, 1990.

<u>Management of the Multiply Injured Patient</u>. American Academy of Orthopaedic Surgeons; Baltimore, MD April 9-11, 1992.

<u>The Dallas Orthotic and Prosthetic Course</u>. Department of Orthopaedic Surgery, The University of Texas Southwestern Medical Center at Dallas; Dallas, TX October 15-17, 1992.

AOFAS 1993 Specialty Day Program. American Orthopaedic Foot and Ankle Society; San Francisco, CA February 21, 1993.

<u>AAOS Orthopaedic Review Course</u>. American Academy of Orthopaedic Surgeons, 60th Annual Meeting; San Francisco, CA February 22, 1993.

Mid-America Orthopaedic Meeting, 11th Annual Meeting. Mid-America Orthopaedic Association; Hilton Head, SC. April 28-May 2, 1993.

<u>59th AO/ASIF Basic Course</u>. Swiss Association for the Study of Internal Fixation (AO/ASIF); Davos, Switzerland December 12-17, 1993.

<u>Trauma of the Upper Extremity</u>. Mayo Foundation, Division of Education; Phoenix, AZ April 14-16, 1994.

<u>Residents and Fellows Conference</u>. American Society for Surgery of the Hand; Cincinnati, OH October 25-26, 1994.

ASSH 49TH Annual Meeting. American Society for Surgery of the Hand; Cincinnati, OH October 26-29, 1994.

<u>The Clinical and Pathological Basis for Disease</u>. Departments of Orthopedics and Pathology, CWRU School of Medicine; Concord, OH October 14-19, 1996.

<u>ATLS Student Course</u>. Committee on Trauma, American College of Surgeons; Akron, OH January 19-20, 1996.

ASSH 1996 Specialty Day Program. American Society for Surgery of the Hand; Atlanta, GA February 25, 1996.

<u>Southwestern Orthopaedic Surgery Review</u>. University of Texas Southwestern Medical Center at Dallas; Dallas, TX May 10-12, 1996.

<u>Basic Microvascular Course</u>. Indiana University School of Medicine, Section of Plastic Surgery; Indianapolis, IN August 19-23, 1996.

ASSH 1997 Specialty Day Program. American Society for Surgery of the Hand, San Francisco, CA February 16, 1997.

<u>Advanced Microvascular Course</u>. Indiana University School of Medicine, Section of Plastic Surgery; Indianapolis, IN April 24-25, 1997.

Joint Replacement 1997. Duke University Medical Center; Pinehurst, NC May 28-31, 1997.

<u>Diagnosing and Treating Physician-Patient Communication Breakdowns</u>. Illinois State Medical Society; Rosemont, IL October 28, 1998.

Spirituality & Healing in Medicine. Harvard Medical School; Chicago, IL March 20-22, 1999.

Tri-Annual Meeting Indianapolis Hand Society. Indiana Hand Center; Indianapolis, IN May 20-23, 1999.

<u>Current Concepts: Master Techniques in Hand Surgery</u>. American Society for Surgery of the Hand; Boston, MA September 2, 1999.

ASSH 54TH Annual Meeting. American Society for Surgery of the Hand; Boston, MA September 2-4, 1999.

Pediatric Trauma Update. Edward Hospital Trauma Program; Naperville, IL September 28, 1999.

<u>2000 Comprehensive Review Course in Hand Surgery</u>. American Society for Surgery of the Hand; Dallas, TX July 28-30, 2000.

ASSH 2001 Specialty Day Program. American Society for Surgery of the Hand, San Francisco, CA March 3, 2001.

<u>Challenges in the Management of Osteoarthritis: A Case-Based Discussion.</u> Foundation for Better Healthcare, Bath, OH September 12, 2001.

<u>The Elbow: Operative Techniques and Treatment Strategies.</u> American Society for Surgery of the Hand; Baltimore, MD October 4, 2001.

ASSH 56th Annual Meeting, American Society for Surgery of the Hand; Baltimore, MD October 4-6, 2001.

<u>Disorders of The Pediatric Forearm, Wrist and Hand</u>. American Society for Surgery of the Hand. Phoenix, AZ October 3, 2002.

ASSH 57TH Annual Meeting. American Society for Surgery of the Hand. Phoenix, AZ October 4-6, 2002.

AAOS Annual Meeting, American Academy of Orthopaedic Surgeons, New Orleans, LA February 6-8, 2003.

ASSH 58th Annual Meeting. American Society for Surgery of the Hand, Chicago, IL September 17-19, 2003.

<u>AAOS Annual Meeting</u>, American Academy of Orthopaedic Surgeons, San Francisco, CA March 10-12,2004.

ASSH 59th Annual Meeting. American Society for Surgery of the Hand, New York, NY September 9-11, 2004.

AAOS Annual Meeting, American Academy of Orthopaedic Surgeons, Washington, DC February 23-27, 2005.

ASSH 60th Annual Meeting, American Society for Surgery of the Hand, San Antonio, TX September 22-24, 2005.

Annual Meeting 2006.T.B Quigley Sports Medicine Society, Bonita Springs, FL January 26-28, 2006

AAOS Annual Meeting. American Academy of Orthopaedic Surgeons, Chicago, IL March 22-24, 2006.

New Technology in Upper Extremity: The Cutting Edge, Lutheran Hospital – The Castele Learning Center, Cleveland, OH June 2, 2006.

Annual Meeting 2007, T.B Quigley Sports Medicine Society, Palm Beach, FL January 2007

ASSH 2007 Specialty Day Program, American Society for Surgery of the Hand, San Diego, CA March 2007.

AAOS Annual Meeting. American Academy of Orthopaedic Surgeons, San Diego, CA March 2007.

<u>New Technology in Upper Extremity, The Cutting Edge</u>. Lutheran Hospital – The Castele Learning Center, Cleveland, OH May 31, 2007.

ASSH 62nd Annual Meeting. American Society for Surgery of the Hand, Seattle, WA September 26-28, 2007

<u>Treatment Options for Difficult Fractures: Advanced Technology Symposium.</u> Cleveland, OH November 17, 2007.

AAOS Annual Meeting. American Academy of Orthopaedic Surgeons, San Francisco, CA March 2008

ASSH 63rd Annual Meeting, American Society for Surgery of the Hand Chicago, IL September 2008

<u>New Technology in Upper Extremity Surgery, The Cutting Edge</u>. Lutheran Hospital – The Castele Learning Center, Cleveland, OH, May 1, 2008.

Annual Meeting 2009. T.B Quigley Sports Medicine Society, Naples, FL February 2009.

Annual Meeting 2009, Carpe Diem Hand Club Maui, HI July 22-26, 2009.

ASSH Master Series: Tendon Repair and Reconstruction, American Society for Surgery of the Hand, Burr Ridge, IL October 16-17, 2009.

New Technology in Upper Extremity Surgery, The Cutting Edge. Cleveland Orthopaedic and Spine Hospital – The Castele Learning Center, Cleveland, OH 2010.

Annual Meeting 2010. Carpe Diem Hand Club, Southampton, NY July 2010.

ASSH 65th Annual Meeting. American Society for Surgery of the Hand, Boston, MA October 2010.

Annual Meeting 2011. T.B. Quigley Harvard Sports Medicine Society, Naples, FL April 1-2, 2011.

Annual Meeting 2011. Carpe Diem Hand Club, Farmington, PA August 3-6, 2011.

ASSH 66th Annual Meeting. American Society for Surgery of the Hand, Las Vegas, NV September 6-10, 2011.

ASSH 67th Annual Meeting. American Society for Surgery of the Hand, Chicago, IL September 5-9, 2012.

ASSH 68th Annual Meeting. American Society for Surgery of the Hand, San Francisco, CA October 2, 2013.

Annual Meeting 2013 Carpe Diem Hand Club, Key Largo, FL July 24-27, 2013

14th Annual New Technology in Upper Extremity Surgery: The Cutting Edge with Advancing Translational Research Cleveland Clinic Foundation Center for Continuing Education and Lutheran Hospital, Cleveland, OH, May 5, 2014.

ASSH 69th Annual Meeting. American Society for Surgery of the Hand, Boston, MA September 17-20, 2014.

15th Annual New Technology in Upper Extremity Surgery: The Cutting Edge with Advancing Translational Research Cleveland Clinic Foundation Center for Continuing Education and Lutheran Hospital, Cleveland, OH June 2015

Annual Meeting 2015 Carpe Diem Hand Club, Santa Barbara, CA July 2015

ASSH 70^{hh} Annual Meeting American Society for Surgery of the Hand, Seattle, WA September 10-12, 2015

<u>Sports Medicine Update: Building Young Athletes – Safe and Healthy X</u> Akron Children's Hospital Akron, OH March 4, 2016

Annual Meeting 2016. T.B. Quigley Harvard Sports Medicine Society, Austin, TX May 5-8, 2016

ASSH 71st Annual Meeting American Society for Surgery of the Hand, Austin, TX September 27-October 1, 2016

Annual Meeting 2017 Pediatric Hand Study Group Philadelphia, PA February 25-26, 2017

<u>Annual Meeting 2017</u>. T.B. Quigley Harvard Sports Medicine Society, Tucker's Point, Bermuda April 20-22, 2017

<u>Sports Medicine Update: Building Young Athletes – Safe and Healthy XII</u> Akron Children's Hospital Fairlawn, OH March 2, 2018

Annual Meeting 2018 Pediatric Hand Study Group, Columbus, OH April 13-14, 2018

Annual Meeting 2018 T.B. Quigley Harvard Sports Medicine Society, Miami, FL April 18-20, 2018

ASSH 73rd Annual Meeting American Society for Surgery of the Hand, Boston, MA September 13 -15, 2018

MEMBERSHIP

American Academy of Orthopaedic Surgeons 2000 - present

American Society for Surgery of the Hand 2001- present

Harvard Club of Chicago

Chicago Society for Surgery of the Hand 1998-2001

Thomas B. Quigley Harvard Sports Medicine Society

Harvard Club of Northeast Ohio (Schools & Scholarships Committee 2002- present, Trustee 2004-present, President July 2008 – June 2010, Co-chair, Akron Area Schools & Scholarships Committee 2016 - 2019)

Akron Art Museum (Co-chair 2014 Auction benefiting the Akron Art Museum, Board of Directors 2014 – present, Vice President, 2015 - 2018, Executive Vice President, 2018 - 2019)

LICENSURE

Ohio Medical License - Current through January 1, 2021

Diplomate National Board of Medical Examiners

American Board of Orthopaedic Surgeons - Recertified through December 31, 2029

Certificate of Added Qualification in Hand Surgery – Recertified through December 31, 2029