

TODD F. RITZMAN, M.D., FAAOS, FAOA

CURRICULUM VITAE

Pediatric Orthopaedic Surgery & Scoliosis

Department Chair

Director of Spine Center of Excellence

Co-Director, Pediatric Orthopedic & Scoliosis Fellowship

Department of Orthopaedic Surgery

Akron Children's Hospital

One Perkins Square

Akron, Ohio 44308

EDUCATION / TRAINING

Wheaton College / Wheaton, Illinois	B.S.	1992-1996	Biology
The Ohio State University College of Medicine / Columbus, Ohio	M.D.	1996-2000	Medicine
Northwestern University McGaw Medical Center / Chicago, Illinois	Surgical Internship	2000-2001	Orthopaedic Surgery
Cleveland Clinic Foundation / Cleveland, Ohio	Residency	2001-2006	Orthopaedic Surgery
San Diego Children's Hospital / San Diego, California	Fellowship	2006-2007	Pediatric Ortho & Scoliosis

RESEARCH AND/OR PROFESSIONAL EXPERIENCE

Licensure

USMLE Step 1 – Passed

USMLE Step 2 – Passed

USMLE Step 3 – Passed

Board Certification

American Board of Orthopaedic Surgery – July 23, 2009. Recertification through Dec 2029.

Professional Society Memberships

American Academy of Orthopaedic Surgeons – Fellow

Pediatric Orthopaedic Society of North America

American Orthopaedic Association – Fellow

Honors

1994 Scholarship, Outstanding Pre-medical Student, Wheaton College, Wheaton, IL

1993-5 GTE Division III Academic All-Region Football Team, Wheaton College

1995 Captain, Varsity Football Team, Wheaton College

1996 *Magna Cum Laude*, Wheaton College, Wheaton, IL

- 1996 Scholastic Honor Society, Wheaton College, IL
- 1998 William Craig Orr Scholarship in Medicine, Ohio State University College of Medicine, Columbus, OH
- 2000 *Sigma Phi* National Medical Honor Society, Ohio State University College of Medicine, Columbus, OH
- 2000 *Alpha Omega Alpha* Honor Society, Ohio State University College of Medicine, Columbus, OH
- 2000 John B. Roberts, M.D. Excellence in Orthopaedics Award, Ohio State University College of Medicine, Columbus, OH
- 2000 The College of Medicine Achievement Award for Academic Excellence, Ohio State University College of Medicine, Columbus, OH
- 2002 Graduate Level One of the Year Award, Cleveland Clinic Foundation, Cleveland, OH
- 2005 AOA/Zimmer Resident Leadership Program Nominee / Participant
- 2005 First Place, Cleveland Clinic Department of Orthopaedic Surgery Annual Research Day Presentation
- 2005 First Place, Cleveland Orthopaedic Society, Resident Essay Contest
- 2006 AOA Emerging Leaders Program
- 2014 Nominee, Best Basic Science Poster, Scoliosis Research Society Annual Meeting
- 2015-20 Best Doctors, The Top Physicians Selected by their Peers, Akron Life Magazine
- 2018-20 Best Doctors, The Top Physicians Selected by their Peers, Cleveland Magazine

Leadership Activities

- 2001-2 Assistant Team Physician, Villa Angela Saint Joseph's High School Football, Euclid, OH
- 2003-6 Team Physician, Solon High School Football, Wrestling, and Hockey, Solon, OH
- 2003 Resident Representative, Basic Science Curriculum Committee, Dept. of Orthopaedic Surgery, Cleveland Clinic Foundation, Cleveland, OH
- 2005 Cleveland Clinic Foundation Lerner College of Medicine, Anatomy Proctor
- 2004-6 Resident Representative, Resident Education Committee, Dept. of Orthopaedic Surgery, Cleveland Clinic Foundation, Cleveland, OH
- 2007-13 Akron Children's Hospital, Trauma Committee
- 2011-19 Akron Children's Hospital, GME Committee member
- 2011-19 Akron Children's Hospital, CME Committee member
- 2013 Akron Children's Hospital, Leadership Academy Steering Committee
- 2010-12 Committee Member, Center for Biomaterials in Medicine, Austen BioInnovation Institute of Akron
- 2011- Medical Director, Apto Orthopedics. Joint Venture Akron Children's Hospital and Austen BioInnovation Institute of Akron.
- 2012- Clinical Assistant Professor, Department of Orthopedic Surgery, Northeast Ohio Medical University
- 2012-13 POSNA Research Committee, Member
- 2013 POSNA Research Committee, Spine Grant Review Panel Leader
- 2013 Course Director, 1st Annual Akron Pediatric Orthopedic Resident Review Course
- 2014 Course Director, 2nd Annual Akron Pediatric Orthopedic Resident Review Course
- 2014- Member, Summa Orthopaedic Residency Clinical Competency Committee
- 2014- Interim Board President, Apto Orthopedics. Joint Venture Akron Children's Hospital and Austen BioInnovation Institute of Akron.
- 2014- Member, School Board, Chapel Hill Christian School, Cuyahoga Falls, Ohio
- 2014-15 Participant, Akron Children's Hospital Leadership Academy

- 2015-16 Course Faculty. OrthoPediatics Sales Training Course. Akron Children's Hospital Simulation Center. Akron, Ohio
- 2015-16 POSNA Resident Newsletter Publications Committee Member
- 2015- Board Chair, Apto Orthopaedics Corp.
- 2015 Course Director, 3rd Annual Akron Pediatric Orthopedic Resident Review Course
- 2016- Member, Surgical Services Governance Council, Akron Children's Hospital
- 2016 Physician Performance Evaluation Committee, Akron Children's Hospital
- 2016 Course Director, 4th Annual Akron Pediatric Orthopedic Resident Review Course
- 2017-19 AAOS, Pediatric Subspecialty OSAE Exam Writer Committee
- 2017 Course Director, 5th Annual Akron Pediatric Orthopedic Resident Review Course
- 2017- Surgeon Director, The Austen Bioskills Lab (TABL), Akron Children's Hospital
- 2017- Co-Director, Cleveland Clinic Foundation/Akron Children's Hospital Joint Pediatric Orthopedic & Scoliosis Fellowship
- 2017- Manuscript Reviewer, Journal of Pediatric Orthopedics
- 2018- Board of Directors, OrthoPediatics Foundation for Education & Research
- 2018- Member, POSNA Long term planning committee
- 2018 Course Director, 6th Annual Akron Pediatric Orthopedic Resident Review Course
- 2018- Member, Innovation Council, Akron Children's Hospital
- 2019 Golden Mallet Educator of the Year, Allegheny General Hospital Department of Orthopedic Surgery.
- 2019 Course Director, 7th Annual Akron Pediatric Orthopedic Resident Review Course
- 2019 Member, Research Directors Meeting, Akron Children's Hospital Research Institute
- 2019- Member, Perioperative Leadership Team, Akron Children's Hospital
- 2019- Member, Medical Staff Executive Committee, Akron Children's Hospital
- 2020 Co-Lead, COVID-19 Provider Labor Pool, Akron Children's Hospital
- 2020 Co-Lead, COVID-19 Remobilization Plan, Akron Children's Hospital
- 2020 Course Director, 8th Annual Akron Pediatric Orthopedic Resident Review Course

Research & Academic Experience

Presentations & Invited Lectures

1. **Ritzman, T**, Seth, A, Sears, B, Litsky, A. Evaluation of Nitinol wire for use as orthopaedic cerclage. Abstract accepted and presented at Sixth World Biomaterials Conference. Kamuela, HI. June, 2000. Abstract accepted and presented at AOA / OREF Conference. St. Louis MO. February, 2000.
2. Knothe, UR, Steck, R, **Ritzman, T**, Dines, M, Knothe Tate, ML. Cellular level, real-time, in vivo and in situ imaging of bone structure and function. Abstract and poster presentation, ShowCASE, Case Western Reserve University, Cleveland, OH. April, 2004.
3. **Ritzman, TF**, Knothe Tate, ML, Wieling, R, Schneider, E, Knothe, UR. Novel surgical procedure shown to be efficacious for regeneration of bone in massive, diaphyseal bone defects. Abstract accepted for poster presentation at the 51st meeting of the Orthopaedic Research Society, Washington, DC, February, 2005.
4. **Ritzman, TF**, Upasani, V, Bastrom, T, Pawelek, J, Betz, R, Newton, PO. Spontaneous correction of unfused curve in selective posterior fusion of adolescent idiopathic scoliosis. E-Poster Presentation at 14th International Meeting on Advanced Spine Techniques. Paradise Island, Bahamas. July 11-14, 2007.
5. **Ritzman, TF**, Upasani, V, Bastrom, T, Pawelek, J, Betz, R, Newton, PO. Return of Shoulder Girdle Function after Anterior versus Posterior Adolescent Idiopathic Scoliosis

- Surgery. Podium presentation at 42nd Scoliosis Research Society Annual Meeting. Edinburgh, Scotland. September 5-8, 2007.
6. **Ritzman, TF**, Robertson C, Mahar A, Newton P, *Effects of Varying Rod Size and Material Properties on the Stability of Segmental and Non-Segmental Posterior Spinal Fusion Constructs*, Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, March 2-5-2008, coauthor.
 7. **Ritzman, TF**, Upasani VV, Bastrom TP, Betz RR, Lonner BS, Newton PO. *Return of Compensatory Curve Spontaneous Derotation After Selective Scoliosis Fusions*, Pediatric Orthopaedic Society of North America Annual Meeting, Albuquerque, New Mexico, May 1-3, 2008.
 8. **Ritzman, TF**, Upasani VV, Pawelek JB, Betz RR, Newton PO. *Return of Shoulder Girdle Function After Anterior Versus Posterior AIS Surgery*, Pediatric Orthopaedic Society of North America Annual Meeting, Albuquerque, New Mexico, May 1-3, 2008.
 9. **Ritzman, TF**, Dwek J, Newton PO. *Anatomy of the Iliac Column for Iliac Bolt Fixation in Pediatric Neuromuscular Scoliosis* (e-poster), Pediatric Orthopaedic Society of North America Annual Meeting, Albuquerque, New Mexico, May 1-3, 2008.
 10. **Ritzman, TF**. Instructor. American Academy of Orthopaedic Surgeons/Pediatric Orthopaedic Society of North America, **Surgical Techniques for Managing Pediatric Sports Injuries**, Orthopaedic Learning Center, Rosemont, IL. June 20, 2008.
 11. Update on Management of Scoliosis: Current Indications for Casting, Bracing, and Surgery. Grand Rounds, Akron Children's Hospital. March 25, 2009.
 12. Rapid Fire Adolescent Idiopathic Scoliosis Case Presentation: Selecting Fusion Levels. Akron Children's Hospital Orthopedic Visiting Professor Lecture. October 30, 2009.
 13. Faculty Lecture. Lower extremity long bone fractures in children & adolescents. National Association of Orthopedic Nurses Northeast Ohio Annual Meeting. April 16, 2011.
 14. Faculty lecture. Spondylolysis and Spondylolisthesis in Childhood and Adolescence. Annual Akron Children's Hospital Sports Medicine Update. Akron, OH. March 2, 2012
 15. Faculty Lecture. Pediatric and Adolescent Spinal Deformity. National Association of Orthopedic Nurses Northeast Ohio Annual Meeting. April 27, 2013.
 16. Kempainen JW, Morscher M, Gothard DM, Adamczyk MJ, **Ritzman TF**. *Evaluation of limited screw-density pedicle screw constructs in posterior fusions for adolescent idiopathic scoliosis*. Podium presentation 2013 Pediatric Orthopedic Society of North America Annual Meeting. Toronto, CA. May 2013.
 17. Faculty Lecture. Staying out of trouble in pediatric orthopedics. Pediatric Orthopedic Update for the Primary Care Physician. Akron Children's Hospital. January 22, 2014.
 18. Kempainen JW, Tan JS, **Ritzman TF**. *Multilevel, adjacent thoracic Ponte osteotomies efficacy in increasing multiplanar spinal flexibility – a human cadaveric biomechanical evaluation*. e-Poster presentation. 49th Annual Meeting Scoliosis Research Society. Anchorage, Alaska. September 2014.
 19. Brighton, BK, Abzug, JM, Ho CA, **Ritzman TF**. The Difficult Pediatric Supracondylar Humerus Fracture: Tips and Techniques to Avoid Complications. Instructional Course Lecture 308. American Academy of Orthopedic Surgeons 2015 Annual Meeting. March 26, 2015. Las Vegas, NV.
 20. Update on Management of Scoliosis: Current Indications for Casting, Bracing and Surgery. Lecture, Annual Akron Children's Hospital Pediatrics Update. March 15, 2015, Akron, OH.
 21. Faculty Lecture. Early Onset Scoliosis and congenital scoliosis. Spinal Column Realignment and Growth Sparing Options: New Directions. Henderson, NV. February 26-27. 2016.
 22. Faculty Lecture. Differential Rod Bending. Spinal Column Realignment and Growth Sparing Options: New Directions. Henderson, NV. February 26-27. 2016.

23. The Mangled Lower Extremity: Decision Making & Treatment. Trauma Grand Rounds, Akron Children's Hospital. July 2016.
24. Faculty Lecture, Lateral Condyle Fractures. 1st Annual Pediatric Orthopedic Surgical Techniques Lab. Memphis, TN. Sept 30-Oct 1, 2016.
25. Faculty Lecture, Idiopathic Scoliosis Correction Strategies. 1st Annual Pediatric Orthopedic Surgical Techniques Lab. Memphis, TN. Sept 30-Oct 1, 2016.
26. Case Based Review General Pediatric Orthopedics. Allegheny General Hospital Department of Orthopedic Surgery Visiting Professorship. November 21, 2016.
27. Faculty Lecture. The importance of sagittal balance in Adolescent Idiopathic Scoliosis deformity surgery. Regional ½ day Scoliosis Cadaveric Skills Lab, The Austen BioSkills Lab, Akron Children's Hospital. March 23, 2017.
28. Faculty Lecture, Lateral Condyle Fractures. 2nd Annual Pediatric Orthopedic Surgical Techniques Lab. Memphis, TN. Sept 28-29, 2017.
29. Faculty Lecture, Idiopathic Scoliosis Correction Strategies. 2nd Annual Pediatric Orthopedic Surgical Techniques Lab. Memphis, TN. Sept 28-29, 2017.
30. Faculty Lecture. What's New in Pediatric Orthopedics? Advances in Scoliosis Treatment. Pediatric Orthopedic Update for the Primary Care Physician. Akron Children's Hospital. November 10, 2017
31. Faculty Lecture. The Orthopedic Spinal Physical Exam. Pediatric Orthopedic Update for the Primary Care Physician. Akron Children's Hospital. November 10, 2017
32. Faculty Lecture. What's New in Pediatric Orthopedics? Advances in Scoliosis Treatment. National Association of Orthopedic Nurses Northeast Ohio Annual Meeting. The Austen BioSkills Lab, Akron Children's Hospital. April 15, 2017.
33. Eichenseer, P, Jones, K, **Ritzman, T.** Evaluation of screw trajectory and safety corridors for pelvic instrumentation in a cerebral palsy population. ePoster #151. EPOSNA Annual Meeting. May 3-6, 2017. Barcelona, Spain.Gra
34. Ganley, T, Hennrikus, W, **Ritzman TF**, Jones, K. POSNA QSVI Webinar: Keeping Our Kids Safe in Our Operating Rooms. Feb 13, 2018. Presenter.
35. Faculty Lecture, Lateral Condyle Fractures. 3rd Annual Pediatric Orthopedic Surgical Techniques Lab. Memphis, TN. Sept 28-29, 2018.
36. Faculty Lecture, Idiopathic Scoliosis Correction Strategies. 3rd Annual Pediatric Orthopedic Surgical Techniques Lab. Memphis, TN. Sept 28-29, 2018.
37. Lab Leader. Cadaveric Pedicle Screw Instrumentation. 6th Annual Akron Pediatric Orthopedic Resident Review Course. The Austen BioSkills Lab, Akron Children's Hospital. Oct 18, 2018.
38. Faculty Lecture. Other Neurologic Disorders. 6th Annual Akron Pediatric Orthopedic Resident Review Course. The Austen BioSkills Lab, Akron Children's Hospital. Oct 18, 2018.
39. Faculty Lecture. Basics of Plate Fixation. Orthopedic Nuts&Bolts, The Austen Bioskills Lab. Akron Children's Hospital. January 12, 2019.
40. Faculty Lecture. Evaluation & Treatment of Back Pain in the Adolescent Athlete. Annual Akron Children's Hospital Sports Medicine Update. Akron, OH. March 1, 2019.
41. Faculty Lecture. Early Onset Scoliosis. Faculty Lecture. What's New in Pediatric Orthopedics? Advances in Scoliosis Treatment. National Association of Orthopedic Nurses Northeast Ohio Annual Meeting. Akron Children's Hospital. April 13, 2019.
42. Faculty Lecture, Lateral Condyle Fractures. 4th Annual Pediatric Orthopedic Surgical Techniques Lab. Memphis, TN. October 4-5, 2019.
43. Faculty Lecture, Idiopathic Scoliosis Correction Strategies. 4th Annual Pediatric Orthopedic Surgical Techniques Lab. Memphis, TN. October 4-5, 2019.

44. Interactive Case Discussion Leader. Adolescent Idiopathic Scoliosis Interactive Case Series. 7th Annual Akron Pediatric Orthopedic Resident Review Course. The Austen BioSkills Lab, Akron Children's Hospital. Oct 17, 2019.
45. Faculty Lecture. Adolescent Idiopathic Scoliosis. 7th Annual Akron Pediatric Orthopedic Resident Review Course. The Austen BioSkills Lab, Akron Children's Hospital. Oct 17, 2019.
46. The sagittal plane in Adolescent Idiopathic Scoliosis. St. Christopher's Hospital for Children Department of Orthopedic Surgery. November 14, 2019.
47. Adolescent Idiopathic Case Series: Interactive Decision Making. St. Christopher's Hospital for Children Department of Orthopedic Surgery. November 15, 2019.

Publications

1. **Ritzman, TF**, Parker, RD Thermal Capsulorrhaphy of the Shoulder. *Current Opinions in Orthopaedics* 13(4):288-291, 2002.
2. **Ritzman, TF**, Iannotti, JP. Proximal Humerus Malunions. Chapter 19. *Complex Shoulder Surgery: Open and Arthroscopic Approaches – 2nd Edition*. Lippincott, New York. Editor: Warner, JP, Flatow, EL, Iannotti, JP.
3. **Ritzman, TF**, Iannotti, JP. Complications of Proximal Humerus Fractures. *Disorders of the Shoulder: Diagnosis and Management – 2nd Edition*. Lippincott, New York. Editor: Iannotti, JP, Williams, GR.
4. Knothe Tate, ML, **Ritzman, TF**, Schneider, E, Knothe UR. Testing of new one stage surgical procedure exploiting the periosteum for the repair of long-bone defects. *Journal of Bone and Joint Surgery (Am)*. 2007 Feb; 89(2):307-16.
5. **Ritzman, TF**, Upasani VV, Pawelek JB, Betz RR, Newton PO. *Return of Shoulder Girdle Function After Anterior versus Posterior Adolescent Idiopathic Scoliosis Surgery*. *Spine*. 2008 Sept. 15;33(20):2228-35
6. **Ritzman, TF**, Upasani VV, Bastrom TP, Betz RR, Lonner BS, Newton PO. *Comparison of Compensatory Curve Spontaneous Derotation after Selective Thoracic or Lumbar Fusions in Adolescent Idiopathic Scoliosis*. *Spine*. 2008 Nov. 15;33(24):2643-2647.
7. Bono KT, Rubin MD, Jones KC, Riley PM, **Ritzman TF**, Schrader WC, Fleissner P, Steiner RP, Morscher MA, Adamczyk MJ. *A prospective comparison of computer-navigated and fluoroscopic-guided in situ fixation of slipped capital femoral epiphysis*. *J Pediatric Orthop*. 2013 Mar;33(2):128-34.
8. Tank JC, Weiner DS, Jacquet R, Childs D, **Ritzman TF**, Horne WI, Steiner R, Morscher MA, Landis WJ. The effects of hypothyroidism on the proximal femoral physis in miniature swine. *J Orthop Res*. 2013 Dec; 31(12):1986-91.
9. Kempainen JW, Morscher MA, Gothard MD, Adamczyk MJ, **Ritzman TF**. Evaluation of limited Screw-Density Pedicle Screw Constructs in Posterior Fusions for Adolescent Idiopathic Scoliosis. *Spine Deformity*. *Spine Deformity* 2016;4(1):33-39.
10. Baratela W, Weiner DS **Ritzman TF**. Chapter 6: Diastrophic Dysplasia: Spinal involvement in Diastrophic Dysplasia. *Accepted for publication in The Diagnosis and Management of Skeletal Dysplasias*. Bober, M & Mackenzie, W, editors.
11. Wingfield JJ, Ho CA, Abzug JM, **Ritzman TF**, Brighton BK. Open Reduction Techniques for Supracondylar Humerus Fractures in Children. *J Am Acad Orthop Surg* 2015;23:e72-80. December 2015.
12. Abzug JM, Ho CA, **Ritzman TF**, Brighton BK. Transphyseal Fracture of the Distal humerus. *J Am Acad Orthop Surg*. 24(2):e39-44. February 2016.
13. Wingfield JJ, Ho CA, Abzug J, **Ritzman TF**, Brighton B. Open reduction Techniques for Supracondylar Humerus Fractures in Children. *Instr Course Lect*. 2016;65:361-370.

14. Bouton D, Ho CA, Abzug J, Brighton B, **Ritzman TF**. The Difficult Supracondylar Humerus Fracture: Flexion-type Injuries. *Instr Course Lect.* 2016;65:371-378.
15. Abzug J, Ho CA, **Ritzman TF**, Brighton B. Transphyseal Distal Humerus Fractures. *Instr Course Lect.* 2016;65:379-384.
16. Brighton B, Abzug J, Ho CA, **Ritzman TF**. Current Strategies for the Management of Pediatric Supracondylar Humerus Fractures: Tips and Techniques for Successful Closed Treatment. *Instr Course Lect.* 2016; 65:353-360.
17. Gao Y, Yanyi X, Land A, Harris J, Policastro G, Childers E, **Ritzman T**, Bundy J, Becker M. Sustained Release of Recombinant Human Growth Hormone from Bioresorbable Poly(ester urea) Nanofibers. *ACS Macro Letters.* 2017, 6, 875-880.
18. Jones, KJ, **Ritzman, TF**. Perioperative Safety: Keeping our Children Safe in the Operating Room. *Orthopedic Clinics of North America.* 49(2018):465-476.

Invited Visiting Professorships

1. Visiting Professor. Allegheny General Hospital Department of Orthopedic Surgery. Pittsburgh, PA. November 21-22, 2016
2. Visiting Professor. St. Christopher's Hospital for Children Department of Orthopedic Surgery. Philadelphia, PA. November 14-15, 2019

Grants Received

1. Cleveland Clinic Foundation Research Programs Council Award (Grant No. 07316) – *Principal Investigator*, \$25,000. Treatment of massive bone defects exploiting the osteogenic potential of periosteum combined with bone transport.
2. AO Research Fund Award (Grant No. O2-K83) – *Co-Investigator*, \$36,000. Treatment of massive bone defects exploiting the osteogenic potential of periosteum combined with bone transport.
3. AO Research Fund Award (Grant No. O4-K3) – *Co-Investigator*, \$80,000. Unraveling endogenous mechanisms of bone regeneration through quantification of the interplay between bone cells and their environment.
4. Ohio Third Frontier Technology Validation and Start-Up Fund: Apto Orthopedics Noninvasive Device for Growing Rod Adjustment. *Co-Investigator*, \$100,000.
5. Summa Health Systems Robert F. Kepley, MD Orthopaedic Fellow Grant. *Co-Investigator*, \$50,000. Physeal Stimulation via Growth Hormone Eluting Pegs.
6. NIH SBIR/STTR R41 Grant. Apto Orthopaedics Corporation. Non-invasively Adjustable Implant for Treatment of Early Onset Scoliosis. *Co-Investigator*. 2014. \$222,908.

Patents Received

1. Noninvasive Device for Adjusting Set Screws, **Ritzman, TF**, Fening SD (U.S. Patent US9949761B2)
2. Noninvasive Device for Adjusting Fastener, **Ritzman, TF**, Fening SD (U.S. Patent US20130150889A1)
3. Distraction Osteogenesis System, **Ritzman TF**, Fening SD (U.S. Patent 20180132900)