

DONITA I. BYLSKI-AUSTROW, Ph.D.

Cincinnati Children's Hospital Medical Center
Department of Orthopaedics
3333 Burnet Avenue
Cincinnati, Ohio 45229-3039
(513) 475-6655

EDUCATION:

Ph.D.	The University of Michigan, Ann Arbor	Bioengineering 1986
M.S.E.	The University of Michigan, Ann Arbor	Applied Mechanics 1983
M.S.	The University of Michigan, Ann Arbor	Bioengineering 1981
B.S.E.	The University of Michigan, Ann Arbor	Mechanical Engineering 1978

APPOINTMENTS / EXPERIENCE:

2007 **Research Associate Professor**, Adjunct, Orthopaedic Surgery, University of Cincinnati, Cincinnati OH

2003- **Director, Biomechanics Research**, Cincinnati Children's Hospital Medical Center, Cincinnati OH

2004- **Instructor**: Joint Biomechanics (BME 624), Department of Biomedical Engineering, University of Cincinnati

2003- **Research Assistant Professor**, Adjunct, Biomedical Engineering, University of Cincinnati, Cincinnati OH

2002-2006 **Research Assistant Professor**, Adjunct, Orthopaedic Surgery, University of Cincinnati, Cincinnati OH

1996- **Director of Biomechanics Research**. Division of Orthopedic Surgery, Cincinnati Children's Hospital Medical Center, Cincinnati OH.

1995-96 **Research Associate**. Division of Orthopaedic Surgery, Cincinnati Children's Hospital Medical Center, Cincinnati OH.

1989-92 **Research Assistant Professor**. Noyes-Giannestras Biomechanics Laboratories, Department of Aerospace Engineering and Engineering Mechanics, University of Cincinnati.

1986-88 **Postdoctoral Research**. Noyes-Giannestras Biomechanics Laboratories, Department of Aerospace Engineering and Engineering Mechanics, University of Cincinnati.

1984-1986 **Doctoral Research**. Bioengineering Program and Division of Orthopaedic Surgery, The University of Michigan, Ann Arbor.

1981-83 **Research Assistant**. Bioengineering Program and Department of Radiologic Physics and Engineering, The University of Michigan, Ann Arbor.

1980-81 **Research Assistant**. Bioengineering Program and Department of Obstetrics and Gynecology, The University of Michigan, Ann Arbor.

1979-80 **Product Engineer**. Division of Automotive Safety Research, Ford Motor Company, Dearborn, Michigan.

1977-78 **Engineer**. Division of Advanced Vehicles Development, Ford Motor Company, Dearborn, Michigan

AWARDS AND HONORS:

2004 National Science Foundation: Cincinnati Creates Companies
 2004 Cincinnati Children's Technology Validation Fund, "Spine Staple"
 2003 Best Clinical Research Scoliosis Research Society, Russell S. Hibbs Award,
 "Endoscopic Spinal Hemiepiphysiodesis Modifies Spine Growth"
 2002 Best Poster Award, Japan Spine Research Society, "The Nuchal Ligament
 Restrains Cervical Spine Flexion"
 2003 Patent, US: Spinal Correction System
 2005 Patents, Continuations and International: Spinal Correction System
 1984-86 Horace H. Rackham Fellowships,
 1976-78 Ford Foundation Scholarships

GRANTS / SUPPORT

2005-2006 Scoliosis Research Society
 Scoliosis Research Society Small Exploratory Grant
 Mechanobiology of Growth: In Vivo Growth Plate Pressure
 \$10,000 PI: D.I. Bylski-Austrow, Co-PIs Eric Wall, Alvin Crawford

2004-2005 National Science Foundation: Cincinnati Creates Companies
 SpineForm, LLC: Scoliosis Correction by Spinal Hemiepiphysiodesis
 \$40,000 PI: Joseph Reynolds, EPrime LLC (co-PI: D. Bylski-Austrow)

2004-2006 CCHMC Trustee Grant
 Cincinnati Childrens Hospital Medical Center
 Mechanobiology of Vertebral Growth
 \$100,000 PI: D.I. Bylski-Austrow

2004-2005 CCHRF Technology Validation Fund
 Cincinnati Children's Research Foundation
 Scoliosis Correction by Spinal Hemiepiphysiodesis
 \$50,000 PI: Eric J. Wall; co-PI: D.I. Bylski-Austrow, EPrime, LLC

2005-2006 UOREF
 University of Cincinnati
 Mechanical Methods to Hasten Bone Maturation in Limb Lengthening
 \$5,000 PI: Diane VonStein (co-PI: D. Bylski-Austrow)

2005-2006 UOREF
 University of Cincinnati
 Pedical Screws: Effect of Wall Perforation on Pedicle Strength
 \$5,000 PI: Gerard Librodo (co-PI: D. Bylski-Austrow)

2004 Capital Equipment Grant
 Ethicon EndoSurgery to Cincinnati Children's Biomechanics Laboratory
 Materials Test System and related equipment

\$50,000+ PI: D.I. Bylski-Austrow

2002-2008 CCHMC Invest in Excellence
Scoliosis Correction by Spinal Hemiepiphysiodesis
\$957,766 Eric J. Wall and D.I. Bylski-Austrow

2002 University Orthopaedic Research and Education Foundation
Differential Expression of Growth Plate Chondrocytes in Scoliosis
\$5000 PI: J. Straughen; co-PI: D.I. Bylski-Austrow

2001-2002 DePuy AcroMed, Inc.
Spinal Hemiepiphysiodesis
\$87,000 CCHMC (E.J. Wall and D.I. Bylski-Austrow) and Ethicon Endo-Surgery

2001 University Orthopaedic Research and Education Foundation
In Vivo Growth Plate Forces
\$5000 PI: D. Bylski-Austrow

1995 - 2002 Ethicon Endo-Surgery, Inc.
Endoscopic Spine Surgery: Endoscopic Discectomy; Spinal Hemiepiphysiodesis, Forces
of Growth, Nuchal Ligament Mechanics
(PI: E.J. Wall; co-PI D.I. Bylski-Austrow)
Research and laboratory support
\$100,000+

PATENT:

Serial number: 60/142,707
Filed: 7 July 1999
Granted: 8 June 2004
Title: Spinal Correction system
Inventors: E.J. Wall and D.I. Bylski-Austrow
Licensed: May 2004 to EPrime, LLC

COMMITTEES:

UC Biomedical Engineering Undergraduate Curriculum Committee.
July 6, 2005 – July 6, 2007. Purpose: Address issues relating to the academic curriculum of the
biomedical engineering undergraduate degree program.

Masters Thesis Committee:, Frank E. Sauser. Dr. Ian Papautsky, Chairman, Dr. Chong H. Ahn.
University of Cincinnati Electrical and Computer Engineering,. November 2003 - February 24,
2005. “Packaging of Pressure Microsensors for Clinical Application.” Purpose: Design and
fabricate MEMS compressive stress sensors for in vivo application in the spine.

PhD Committee, John P. Holden, ES Grood, Chair, University of Cincinnati Department of
Aerospace Engineering and Engineering Mechanics. 1988-1992, “Direct Measurement of In
Vivo Forces in the Anterior Cruciate Ligament During Activity: Studies in a Quadruped Model.”

PhD Committee, John F. Cummings: ES Grood, Chair, 1989-90, The University of Cincinnati Department of Aerospace Engineering and Engineering Mechanics. "The Effects of Initial Graft Size and Laxity on the Biomechanics of Anterior Cruciate Ligament Reconstruction in a Caprine Model."

PROFESSIONAL MEMBERSHIPS:

Orthopaedic Research Society
 American Society of Biomechanics
 American Society of Mechanical Engineers
 American Association for the Advancement of Science
 Biomedical Engineering Society
 CCHMC Women's Faculty Association

REVIEWER:

Journal of Biomechanics
 Journal of Biomechanical Engineering
 Journal of Orthopaedic Research

TEACHING:

- Course: UC BME 624 Biomechanics of Human Joints, winter quarter, Jan –Mar, 2004, and 2006.
- Biomechanics Basic Science lecture series to UC Orthopaedic Residents, Annual, November 10, 2003, October 13, 2004, and September 28, 2005.
- Hypothesis Driven Research Lunch and Learn Series for Cincinnati Children's Orthopaedic Residents and Fellows. July 13, 2005, and biannually 2002-2005

MENTORING:

- WISE Summer REWU Fellowship in the Summer Research Program in Science and Engineering. Jessica Miller. June 2006 – September 2006.
- Summer Undergraduate Research Program (SURF), Chris Caulfield. June 2006 – July 2006.
- WISE Summer REWU Fellowship in the Summer Research Program in Science and Engineering. Andrea Montgomery. June 2005 – September 2005.
- Summer Undergraduate Research Program (SURF), Ahilan Sivaganesan. June 2005 – July 2005.
- Physician Scientist Training Program, UC Biomedical Engineering, David Sheyn. June – August, 2004.
- Summer Undergraduate Research Program (SURF), Jonathan Henkel. May 12, 2004 – September 15, 2004.
- Summer Medical Student Research, Nicole McDonald. Summer 2004.
- Physician Scientist Training Program, UC Biomedical Engineering, Joel Straughen. June – August, 2002.

- International Research Fellow, Katsushi Takeshita, MD, 1999-2000: “Biomechanical Function of the Nuchal Ligament,” PhD University of Tokyo, 2002.
- Master’s Committee, Frank E. Sauser, Univ. Cincinnati Electrical and Computer Engineering, 2003-2005.
- PhD Committee, John P. Holden, University of Cincinnati Aerospace Engineering and Engineering Mechanics, 1987-1992
- PhD Committee, John F. Cummings, University of Cincinnati Aerospace Engineering and Engineering Mechanics, 1989-1990

CO-OPERATIVE EDUCATION, PROFESSIONAL PRACTICE STUDENTS:

- Biomedical Engineering student Alison Grimaldi. August 11, 2003 – March 2004.
- Mechanical Engineering student Brad Kleinman January 7, 2002 – March 15, 2002.
- Mechanical Engineering student Eric Pohlmeier. January 4, 1999 – March 26, 1999.
- Mechanical Engineering student Erik Peterson. January 3, 2000 – March 24, 2000, June 12, 2000 – September 19, 2000.
- Mechanical Engineering student Patty Ryan. Winter quarter 2000.

CONTINUING EDUCATION:

- UC Colleges of Business, Engineering and Medicine: Cincinnati Creates Companies, Facilitator: Charles Matthews, PhD., Winter 2004.
- Negotiating Translational and Clinical Research Regulatory Complexities, Translational Research Trials Office, CCHMC, 14 April 2004.
- Regional Faculty Development Conference, New Horizons in Faculty Development, CCHMC, September 17-18, 2004.
- Translating Lab Skills Into Business Leadership, Ohio Valley Affiliates for Life Sciences, by The Leadership Edge, 16 Nov 2004.

PEER-REVIEWED PUBLICATIONS:

Kriewall, T.J., Akkas, N., **Bylski, D.I.**, Melvin, J.W., and Work, B.A.: Mechanical Behavior of Fetal Dura Mater under Large Axisymmetric Inflation. J. Biomech Eng, 105: 71-76, 1983.

Chenevert, T.L., **Bylski, D.I.**, Carson, P.L., et.al: Ultrasonic Computed Tomography of the Breast: Improvement of Image Quality by Use of Cross- Correlation Time-of-Flight and Phase-Insensitive Attenuation Measurements. Radiology, 152: 155- 159, 1984.

Bylski, D.I., Kriewall, T.J., Akkas, N., and Melvin, J.W.: Mechanical Behavior of Fetal Dura Mater Under Large Deformation Biaxial Tension. J. Biomechanics, 19:19-26, 1986.

Bylski-Austrow, D.I., Grood, E.S., Hefzy, M.S., Holden, J.P., Butler, D.L.: Anterior Cruciate Ligament Replacements: A Mechanical Study of Femoral Attachment Location, Flexion Angle at Tensioning, and Initial Tension. J Orthop Res, 8: 522-531, 1990.

Gibbons, M.J.; Butler, D.L.; Grood, E.S.; **Bylski-Austrow, D.I.**; Levy, M.S.; Noyes, F.R.:

Effects of Gamma Irradiation on the Initial Mechanical and Material Properties of Goat Bone-Patellar Tendon-Bone Allografts. J. Orthop Res, 9: 209-218, 1991.

Bylski-Austrow, D.I., Malumed, J., Meade, T., Grood, E.S.: Knee Joint Contact Pressure Decreases After Chronic Meniscectomy Relative to the Acutely Meniscectomized Joint: A Mechanical Study in the Goat. J. Orthop Res, 11: 796-804, 1993.

Bylski-Austrow, D.I., Goldstein, S.A., Kayner, D.C., and Matthews, L.S.: Displacements of the Menisci Under Joint Load: An In Vitro Study in Human Knees. J. Biomechanics 27:421-431, 1994.

Holden, J.P., Grood, E.S., Korvick, D.L., Cummings, J.F., Levy, M.S., Butler, D.L., **Bylski-Austrow, D.I.**: In Vivo Forces in the Anterior Cruciate Ligament: Direct Measurement During Walking and Trotting in a Quadruped. J. Biomechanics 27:517-526, 1994.

Bush-Joseph, C.A., Cummings, J.F., Buseck, M., **Bylski-Austrow, D.I.**, Butler, D.L., Noyes, F.R., Grood, E.S.: Effect of Tibial Attachment Location on the Healing of the Anterior Cruciate Ligament Freeze Model. J. Orthop Res, 14:534-541, 1996.

Wall, E.J., **Bylski-Austrow, D.I.**, Shelton, F.S., Crawford, A.H., Kolata, R.J., Baum, D.S.: Endoscopic Discectomy Increases Thoracic Spine Flexibility as Effectively as Open Discectomy: A Mechanical Study in a Porcine Model. Spine 23:9-16, 1998.

Bylski-Austrow, D.I., Wall, E.J., Rupert, M.P., Roy, D.R., Crawford, A.H. Growth Plate Forces in Adolescent Human Knees: Radiographic and Mechanical Study of Epiphyseal Staples. J. Pediatric Orthopaedics, 21:817-823, 2001.

Takeshita, K., **Bylski-Austrow, D.I.**, Peterson, T.K., Crawford, A.H., Nakamura, K. The Nuchal Ligament Restrains Cervical Spine Flexion. Spine 29: E388-393, 2004

Wall, E.J., **Bylski-Austrow, D.I.**, Kolata, R.J., Crawford, A.H. Endoscopic Mechanical Spinal Hemiepiphysiodesis Modifies Spine Growth. Spine 30:10:1148-1153 May 2005.

BOOK CHAPTER

Carson, P.L., Scherzinger, A.L., Bland, P.H., Meyer, C.R., Schmitt, R.M., Chenevert, T.L., Bookstein, F.L., **Bylski, D.I.**, and Silver, T.M. Ultrasonic Computed Tomography Instrumentation and Human Studies. In: Ultrasonic Examination of the Breast, pp. 187-199. Edited by J. Jellins and T. Kobayashi. New York: John Wiley and Sons, Ltd., 1983.

ABSTRACTS:

Bylski, D.I., Kriewall, T.J., Akkas, N., and Melvin, J.W. Mechanical Behavior of Fetal Dura Mater in Axisymmetric Biaxial Tension. Proc. 8th Am Soc Biomechanics, Tucson, AZ, Oct 3-5, 1984.

Haughton, J., Drake, K., **Bylski, D.I.**, Matthews, L.S., and Goldstein, S.A. A New Dynamic Pressure Transducer. In Proc. 9th American Society of Biomechanics, Ann Arbor, MI, Oct 2-

4, 1985.

Bylski, D.I., Goldstein, S.A., Kayner, D.C., and Matthews, L.S. Experimental Determination of Meniscal Mechanics in Intact Knee Joints. In Proc 32nd Orthop Res Soc, New Orleans, LA, Feb17-20, 1986.

Ciarelli, M.J., **Bylski, D.I.**, Goldstein, S.A., Gordon, J.D., Wojtys, E.M, Matthews, L.S.: Effects of Partial Meniscectomy and Ligament Resection on Meniscal Displacement and Strain Patterns in Cadaver Knees. In Proc of the 33rd Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, Jan. 19-22, 1987.

Bylski, D.I.: Correlation of Meniscal Failure Patterns with Meniscal Displacements and Surface Strains Measured In Situ. Biomechanics in Sport - A 1987 Update. Edited by Rekow, Thacker, Erdman, New York: American Society of Mechanical Engineers, 1987.

Haimes, J.L., Grood, E.S., **Bylski, D.I.**, Noyes, F.R.: The Effect of ACL and MCL Sectioning on Tibial Displacement with Applied Valgus Moment. In Proceedings of the 34th Annual meeting of the Orthopaedic Research Society, Atlanta, BA, Feb 1-4, 1988.

Haimes, J.L., Grood, E.S., Bylski-Austrow, D.I., Noyes, F.R. Limits of Movement in the Human Knee. Proceedings of 35th Annual meeting of the Orthopaedic Research Society, Las Vegas, NE, Feb 6-9, 1989.

Bylski, D.I., Grood, E.S., Holden, J.P., Hefzy, M.S., Butler, D.L.: Tension in Anterior Cruciate Ligament Replacements: Effects of Femoral Attachment Site, Applied Graft Tension, and Initial Flexion Angle, In Proc of the 35th Annual Meeting of the Orthopaedic Research Society, Las Vegas, NE, Feb 6-9, 1989.

Bylski-Austrow D, Goldstein S, Ciarelli M, Matthews L. In Situ Meniscal Displacements Measured in Human Knees. Federation of American Societies for Experimental Biology. 73rd Annual Meeting, New Orleans, LA, March 19-23, 1989.

Bush-Joseph, C.A., Buseck, M.S., Cummings, J.F., Grood, E.S., Noyes, F.R., **Bylski-Austrow, D.I.**, VanGinkel, L.A.: The Healing Response and Structural Properties of the ACL Following Freezing and Repositioning of the Tibial Insertion. In Proceedings of the 36 Annual Meeting of the Orthopaedic Research Society, New Orleans, LA, Feb 5-8, 1990.

Bylski-Austrow, D.I., Malumed, J., Meade, T., Schafer, J.A.; Cummings, J.F.; Grood, E.S.: Effect of Medial Meniscectomy on Joint Contact Pressure: A mechanical study of joint remodeling in the goat, In Proceedings of the 37th Annual Meeting of the Orthopaedic Research Society, Anaheim, CA, Mar 4-7, 1991.

Lorry, B.S., Grood, E.S., Bohanan, B.S., **Bylski-Austrow, D.I.**: An In Vitro Test System for Conducting Multi-Axial Load-Displacement Tests on Diarthroidal Joints. A.S.M.E. Applied Mechanics and Biomechanics Summer Conf, Columbus OH, 1991.

Cummings, J.F., Holden, J.P., Grood, E.S., Butler, D.L, **Bylski-Austrow, D.I.**, Wroble, R.R.: In Vivo Patellar Tendon Forces and Rotational Joint Position: Measurement in a Caprine Model. A.S.M.E. Biomechanics Symposium, Vol. AMD-120, 1991.

- Holden, J.P., Korvick, D.L., Grood, E.S., Cummings, J.F., **Bylski-Austrow, D.I.**: In Vivo Forces in the Anterior Cruciate Ligament During Walking and Trotting in a Quadruped. The 2nd North American Congress on Biomechanics, Aug. 24-28, 1992.
- Wall, E.J., **Bylski-Austrow, D.I.**, Shelton, F.S., Crawford, A.H., Kolata, R.J., Baum, D.S., and Griffin, M.J.: Spine Flexibility after Open versus Endoscopic Discectomy. In the Proceedings of the Pediatric Orthopaedic Society of North America, Phoenix, AZ, May 13-15, 1996.
- Wall, E.J., **Bylski-Austrow, D.I.**, Shelton, F.S., Crawford, A.H., Kolata, R.J.: Spine Flexibility after Open versus Endoscopic Discectomy. A Mechanical Study in a Porcine Model. In the Proceedings of 31st Annual Meeting of Scoliosis Research Society, Ontario, Canada, Sept 25-28, 1996.
- Bylski-Austrow, D.I.**, Shelton, F.S., Wall, E.J., Crawford, A.H., Kolata, R.J., Griffin, M.J.: Spine Flexibility after Open Versus Endoscopic Discectomy. A Mechanical Study in a Porcine Model. In the Proceedings of the 43rd Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, Feb9-13, 1997.
- Wall, E.J., **Bylski-Austrow, D.I.**, Rupert, M.P., Crawford, A.H., Roy, D.R. Determination of Growth Plate Forces in Human Knees. In the Proceedings of the Annual Meeting of the Pediatric Orthopaedic Society of North America, Cleveland, Ohio, May 7-9, 1998.
- Jeffers, K., Wall, E.J., **Bylski-Austrow, D.I.** Fracture Fixation of the Lateral Humeral Condyle. In the Proceedings of the Annual Meeting of the Pediatric Orthopaedic Society of North America, Cleveland, Ohio, May 7-9, 1998.
- Bylski-Austrow, D.I.**, Wall, E.J., Kolata, R.J., Briggs, L.L., Crawford, AH. Endoscopic Nonfusion Spinal Hemiepiphysiodesis. Preliminary studies in a porcine model. In the Proceedings of the Biannual Meeting of the International Research Society for Spinal Deformities, Burlington, Vermont, June 27 - July 1, 1998. Published in *Research into Spinal Deformities 2*: Ed. I.A.F. Stokes: IOS Press, Washington DC,
- Bylski-Austrow, D.I.**, Wall, E.J., Rupert, M.P., Roy, D.R., Crawford, A.H. Growth Plate Forces in Adolescent Human Knees: Radiographic and Mechanical Study of Epiphyseal Staples. In the Proceedings of the 45th Annual meeting of the Orthopaedic Research Society, Anaheim, CA, Feb. 1-4, 1999.
- Bylski-Austrow, D.I.**, Wall, E.J., Kolata, R.J., Ballard E.T., Crawford, AH. Endoscopic Nonfusion Spinal Hemiepiphysiodesis. Preliminary studies in a porcine model. In the Proceedings of the 6th Annual International Meeting on Advanced Spine Techniques / Scoliosis Research Society, Vancouver BC, Canada, July 8-10, 1999.
- Wall, E.J., **Bylski-Austrow, D.I.**, Kolata, R.J., Ballard, E.T., Crawford, AH. Endoscopic Nonfusion Spinal Hemiepiphysiodesis. Preliminary studies in a porcine model. In the Proceedings of the Annual Meeting of the American Academy of Pediatrics, Washington DC, Oct. 9-11, 1999.

- Wall, E.J., **Bylski-Austrow, D.I.**, Kolata, R.J., Ballard, E.T., Crawford, AH. Endoscopic Mechanical Spinal Hemiepiphysiodesis for Correction of Idiopathic Scoliosis. In the Proceedings of the 14th Annual meeting of the North American Spine Society, Chicago, IL Oct 20-23, 1999.
- Bylski-Austrow, D.I.**, Wall, E.J., Kolata, R.J., Ballard, E.T., Crawford, AH. Endoscopic Mechanical Spinal Hemiepiphysiodesis Modifies Spine Growth. In the Proceedings of the 46th Annual meeting of the Orthopaedic Research Society, Orlando, FL, Mar 12-15, 2000.
- Wall, E.J., **Bylski-Austrow, D.I.**, Kolata, R.J., Ballard, E.T., Crawford, AH. Endoscopic Mechanical Spinal Hemiepiphysiodesis Modifies Spine Growth. In the Proceedings of the Pediatric Orthopaedic Society of North America, Vancouver, BC, May 1-4, 2000.
- Bylski-Austrow, D.I.**, Wall, E.J., Kolata, R.J., Ballard, E.T., Crawford, AH. Endoscopic Mechanical Spinal Hemiepiphysiodesis Modifies Spine Growth. In the Proceedings of the International Meeting on Advanced Spine Techniques, Barcelona, Spain, July 5-8, 2000.
- Wall, E.J., **Bylski-Austrow, D.I.**, Kolata, R.J., Ballard, E.T., Crawford, AH. Endoscopic Mechanical Spinal Hemiepiphysiodesis Modifies Spine Growth. In the Proceedings of the Scoliosis Research Society 35th Annual Meeting, Cairns, Australia, October 18-21, 2000.
- Bylski-Austrow, D.I.**, Wall, E.J., Kolata, R.J., Briggs, L., Crawford, AH. Endoscopic Mechanical Spinal Hemiepiphysiodesis Modifies Spine Growth. In the Proceedings of the Academy of Surgical Research, Cincinnati, OH, October 20-21, 2000.
- Wall, E.J., **Bylski-Austrow, D.I.**, Kolata, R.J., Ballard, E.T., Crawford, AH. Endoscopic Mechanical Spinal Hemiepiphysiodesis Modifies Spine Growth. American Academy of Orthopaedic Surgeons, San Francisco, CA, Feb 28-Mar 4, 2001.
- Takeshita, K, **Bylski-Austrow, D.I.**, Peterson, E.T.K., Nakamura, K, Crawford, A.H. The Nuchal Ligament Restrains Cervical Spine Flexion. 36th Annual Meeting Scoliosis Research Society, Cleveland OH, Sept 19-22, 2001.
- Takeshita, K, **Bylski-Austrow, D.I.**, Peterson, E.T.K., Nakamura, K, Crawford, A.H. The Nuchal Ligament Restrains Cervical Spine Flexion. 48th Annual Orthopaedic Research Society, Dallas TX, Feb 10-13, 2002.
- Takeshita, K, **Bylski-Austrow, D.I.**, Peterson, E.T.K., Crawford, A.H, Nakamura, K. The Nuchal Ligament Restrains Cervical Spine Flexion. Cervical Spine Research Society. Miami, FL, Dec 5, 2002.
- Wall E.J., **Bylski-Austrow D.I.**, Kolata R.J, Crawford A.H. Endoscopic Mechanical Spinal Hemiepiphysiodesis Modifies Spine Growth. Pediatric Orthopaedic Society of North America, Amelia Island FL, May 1-4, 2003, p 92.
- Bylski-Austrow D.I.**, Crawford A.H., Ballard E.T. Structure of the Vertebral Growth Plate in Scoliosis. Pediatric Orthopaedic Society of North Am, Amelia Island FL, May, 2003, p. 131.

Wall E.J., **Bylski-Austrow D.I.**, Kolata R.J., Crawford A.H. Endoscopic Mechanical Spinal Hemiepiphysiodesis Modifies Spine Growth. 10th International Meeting of Advanced Spine Techniques, Rome Italy, July 10-12, 2003.

Wall E.J., **Bylski-Austrow D.I.**, Kolata R.J., Crawford A.H. Endoscopic Mechanical Spinal Hemiepiphysiodesis Modifies Spine Growth. 38th Annual Meeting of the Scoliosis Research Society, Quebec City, September 10-13, 2003, p. 88-89. **Russell Hibb's Award for Clinical Research, First Place.**

Wall EJ, **Bylski-Austrow, D.I.**, Kolata, R.J., Glos, D.L., Crawford, A.H. Endoscopic Mechanical Spinal Hemiepiphysiodesis Modifies Spine Growth, Proc. 27th Annual Meeting of the American Society of Biomechanics, Toledo OH, Sept. 25-27, 2003.

Bylski-Austrow, D.I., Ballard, E.T., Glos, D.L., Crawford, A.H. Vertebral Growth Plate in Scoliosis: Convex vs. Concave Symmetry. Soc. for Pediatric Pathology, Cincinnati OH, Oct. 17-18, 2003.

Bylski-Austrow, D.I., Wall, E.J., Kolata, R.J., Glos, D.L., Crawford, A.H.. Endoscopic Mechanical Spinal Hemiepiphysiodesis Repeatedly Modifies Spine Growth. Proc. of the 50th Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, Mar 7-10, 2004.

Bylski-Austrow, D.I., Ballard, E.T., Glos, D.L., Crawford, A.H. Vertebral Growth Plate in Scoliosis: Convex vs. Concave Symmetry. Proc. of the 50th Annual Meeting of the Orthopaedic Research Society, San Francisco, Mar 2004.

Sauser, F.E., Glos, D.L., **Bylski-Austrow, D.I.**, Papautsky, I. Pressure sensors for in vivo measurements on spinal growth plates. IEEE Engineering in Medicine and Biology Conference, San Francisco, CA, September 1-4, 2004.

Bylski-Austrow, D.I., Wall, E.J., Ballard, E.T., Kolata, R.J., Glos, D.L., Sheyn, D., Crawford, A.H. Spinal Hemiepiphysiodesis Induces Physeal Histomorphometric Gradients. 51st Annual Meeting of the Orthopaedic Research Society, Washington DC, Feb 20-23, 2005.

Glos D.L., Sauser F.E., Papautsky, I., **Bylski-Austrow, D.I.** Intra-Annular Bilateral Spinal Compression: Novel MEMS Sensors. Annual Meeting of the ASB/ISB. Cleveland, Ohio, July 31-Aug 5, 2005.

McDonald N, Mehlman CT, Glos DL, **Bylski-Austrow DI**, Nail Fixation of Distal Third Pediatric Femoral Shaft Fractures: Retrograde Insertion Increases Stiffness in Bending But Not Axial Torsion, Orthopaedic Trauma Association, October 2005.

Bylski-Austrow DI, Crawford AH, Ballard ET, Wall EJ, Glos DL, Sheyn D. Vertebral Growth Plate Structure in Scoliosis. 40th Annual Meeting of the SRS. Miami, FL, October 27-30, 2005.

Bylski-Austrow DI; Glos DL; Sauser FE; Papautsky I; Dardzinski, BJ; Wall EJ; Crawford AH. In vivo bilateral intra-annulare compressive stresses using MEMS sensors. Proc. of the 52nd Annual Meeting of the Orthopaedic Research Society, Chicago, March 2006.

Mehlman CT; McDonald, N; Glos DL; **Bylski-Austrow DI**; Elastic nails: Insertion approach affects stiffness of fixed distal femur fractures. Proc. of the 52nd Annual Meeting of the Orthopaedic Research Society, Chicago, March 2006.

McDonald N, Mehlman CT, **Bylski-Austrow DI**, Glos DL. Nail fixation of Distal Third Pediatric Femur Fractures: Insertion Approach Affects. The 25th European Pediatric Orthopaedic Society Meeting. Dresden, Germany. April 5-8, 2006.

Wall EJ, **Bylski-Austrow DI**, Ballard ET, Glos DL, Stringer K, Montgomery A Spinal Hemiepiphysiodesis Decreases Growth Plate Height and Chondrocyte Size. Pediatric Orthopaedic Society of North America, San Diego CA, May 2-6, 2006.

Mehlman CT, McDonald N, Glos DL, **Bylski-Austrow DI**. Flexible Nail Fixation of Distal Third Femur Fractures: Antegrade vs Retrograde Insertion Affects Construct Stiffness. Pediatric Orthopaedic Society of North America, San Diego CA, May 2-6, 2006.

Bylski-Austrow DI; Wall EJ; Glos DL; Ballard ET; Stringer K; Crawford AH. Spinal Hemiepiphysiodesis Correlates with Physeal Histomorphometric Gradients. 6th Biennial Meeting of the International Society of Spinal Deformities Gent Belgium, 21-24 June 2006.

Bylski-Austrow DI; Glos DL; Sauser FE; Papautsky I; Crawford AH; Wall EJ Bilateral Intra-Annular Spinal Compressive Stresses *In Vivo*. 6th Biennial Meeting of the International Society of Spinal Deformities Gent Belgium, 21-24 June 2006.

Glos DL, Sauser FE, Jain V, Crawford AH, Wall EJ, **Bylski-Austrow DI**. In Vivo Compressive Stresses in the Disc Vary in Quadruped. Accepted to the 53rd Annual Meeting of the Orthopaedic Research Society, San Diego, February 2007.

PRESENTATIONS (National / International)

Mechanical Behavior of Fetal Dura Mater in Axisymmetric Biaxial Tension. 8th Annual Meeting of the American Society of Biomechanics, Oct. 1984.

Experimental Determination of Meniscal Mechanics in Intact Knee Joints. 32nd Annual Meeting of the Orthopaedic Research Society, Feb. 1986.

Correlation of Meniscal Failure Patterns with Meniscal Displacements and Surface Strains Measured In Situ. Am Society of Mechanical Engineers Winter Annual Meeting, Nov. 1987.

Meniscal Displacements under Joint Load: An In Vitro Study in Human Knees. 3rd Annual Meeting of the Meniscal Transplantation Study Group, American Academy of Orthopaedic Surgeons, Las Vegas, Feb. 1989.

Tension in Anterior Cruciate Ligament Replacements: Effects of Femoral Attachment Site, Applied Graft Tension, and Initial Flexion Angle. 35th Annual meeting of the Orthopaedic Research Society, Feb. 1989.

Medial Meniscectomy and Irradiated Meniscal Allografts: Preliminary Mechanical and Vascular Studies in the Goat. 4th Annual Meeting of the Meniscal Transplantation Study Group, American Academy of Orthopaedic Surgeons, New Orleans, Feb. 1990.

Effect of Medial Meniscectomy on Joint Contact Pressure: A mechanical study of joint remodeling in the goat. 37th Annual meeting of the ORS, Mar 1991.

Effect of Meniscal Allografts on Joint Contact Pressure: Mechanical and Histological Studies in the Goat. 5th Annual Meeting of the Meniscal Transplantation Study Group, American Academy of Orthopaedic Surgeons, Anaheim CA, Mar 1991.

Irradiated Meniscal Allografts: Mechanical and Histological Studies in the Goat. 38th Annual Meeting of the Orthopaedic Research Society, Feb. 1992.

Spine Flexibility after Open Versus Endoscopic Discectomy. A Mechanical Study in a Porcine Model. 31st Annual meeting of the Scoliosis Research Society, Sep. 1996.

Spine Flexibility after Open Versus Endoscopic Discectomy. A Mechanical Study in a Porcine Model. 43rd Annual meeting of the Orthopaedic Research Society, Feb. 1997.

Endoscopic Nonfusion Spinal Hemiepiphysiodesis. Preliminary studies in a porcine model. Biannual meeting of the International Research Society for Spinal Deformities, Burlington, Vermont, June 27 - July 1, 1998.

Growth Plate Forces in Adolescent Human Knees: Radiographic and Mechanical Study of Epiphyseal Staples. 45th Annual meeting of the Orthopaedic Research Society, Feb. 1-4, 1999.

Endoscopic Nonfusion Spinal Hemiepiphysiodesis. Preliminary studies in a porcine model. 6th Annual Meeting of the International Meeting on Advanced Spine Techniques (IMAST)/Scoliosis Research Society (SRS), Vancouver BC, Canada, July 8-10, 1999.

Endoscopic Mechanical Spinal Hemiepiphysiodesis Modifies Spine Growth. Presented at the 46th Annual Meeting of the Orthopaedic Research Society, Orlando, FL, Mar 12-15, 2000.

The Nuchal Ligament Restrains Cervical Spine Flexion. Scoliosis Research Society, Cleveland, Sept. 2001.

The Nuchal Ligament Restrains Cervical Spine Flexion. Orthopaedic Research Society, Dallas, TX, Feb. 10-13, 2002.

Structure of the Vertebral Growth Plate in Scoliosis. Pediatric Orthopaedic Society of N. America, Amelia Island FL, May 1-4, 2003, p. 131.

Vertebral Growth Plate in Scoliosis: Convex vs. Concave Symmetry. Society for Pediatric Pathology, Cincinnati OH, Oct. 17-18, 2003.

Endoscopic Mechanical Spinal Hemiepiphysiodesis Modifies Spine Growth. 50th Annual Meeting of the Orthopaedic Research Society, San Francisco CA, Mar 2004.

Vertebral Growth Plate in Scoliosis: Convex vs. Concave Symmetry. 50th Annual Meeting of the Orthopaedic Research Society, San Francisco CA, Mar 2004.

Vertebral Growth Plate in Scoliosis: Convex vs. Concave Symmetry. Accepted for presentation at the 51st Annual Meeting of the Orthopaedic Research Society, Washington DC, Feb 2005.

Intra-Annular Bilateral Spinal Compression: Novel MEMS Sensors. Annual Meeting of the ASB/ISB. Cleveland, Ohio, August 2005.

Spinal Hemiepiphysiodesis Correlates with Physeal Histomorphometric Gradients. 6th Biennial Meeting of the International Society of Spinal Deformities Gent Belgium, 21-24 June 2006.

INVITED PRESENTATION: Recent Local

New Technology for Management of Scoliosis. Second Annual Surgery Research Conference., Pediatric Surgery,. Cincinnati, Ohio, December 21, 2005.

Altering Skeletal Growth. Orthopaedic Grand Rounds, University of Cincinnati, 27 Sept 2006.

INVITED PRESENTATIONS: National / International

6th Biennial Meeting of the International Society of Spinal Deformities Mini-Symposium on Identification of progressive scoliosis and possibilities for Early Intervention: "Growth modulation and less invasive surgery". IRSSD Gent Belgium, 21 June 2006

Basic and Applied Science Foundations of Spinal Growth Modulation. Scoliosis Research Society Traveling Fellows, Cincinnati, 5 Sep 2006.

Spinal Hemiepiphysiodesis by Stapling: Growth Plate Histomorphometry of Staple Model and Scoliosis Patients; In Vivo Disc Compressive Stresses. 6th Annual Meeting of the Russell Hibbs Society. Monterey, California, 13-16 Sept 2006.