

CURRICULUM VITAE

YENER N. YENI

PERSONAL

Address: Bone and Joint Center

Henry Ford Hospital
Integrative Biosciences Center (iBio)
6135 Woodward
Detroit, MI 48202

Phone: (313) 556 7753
Fax: (313) 871 2607
E_mail: yeni@bjc.hfh.edu

PRIMARY SUBJECTS OF INTEREST

- **Medical:** Osteoporosis, Osteoarthritis, Stress Fractures, Fracture Healing, Spine, Hip.
- **Bioengineering:** Bone Mechanics, Skeletal Mechanobiology, Orthopaedic Biomechanics, Microtomography, Radiogrammetry, Instrumentation, Biomaterials, Ultrasound, Modeling, Image Analysis.
- **Solid Mechanics:** Composite Materials, Fracture Mechanics, Experimental Mechanics.

EDUCATION

- **B.Sc., Electrical and Electronics Engineering, Hacettepe University, Turkey, 1991.**
Senior Project: “Design and Implementation of a 5-Band Audio Equalizer”.
- **M.Sc., Engineering Sciences, Middle East Technical University, Turkey, 1994.**
Thesis Title: “Biomechanical Aspects of Osteoporosis: Effect of Medication on Biomechanical Properties of Rabbit Bones in Heparin Induced Osteoporosis and Ultrasonic Properties of Human Bones in Senile Osteoporosis”.
- **Ph.D., Mechanical Engineering (with certificate in Bioengineering), West Virginia University, 1998.**
Dissertation Title: “Fracture Mechanics of Human Cortical Bone: The Relationship of Geometry, Microstructure and Composition with the Fracture of the Tibia, Femoral Shaft and the Femoral Neck”.

NON-DEGREE EDUCATION AND TRAINING

- “Wavepak Vibrational Data Analysis Training”, Computational Systems Inc., Knoxville, Tennessee, June 21-24, 1993 (Certificated).
- “Dynamics of Systems and Applications Training”, METU Continuing Education Center, Ankara, Turkey, November 22-25, 1993 (Certificated).
- Summer School on “Biomechanical Aspects of Artificial Joints”, Centre International des Sciences Mecaniques (CISM), Udine, Italy, July 11-15, 1994 (Registration, lodging and stipend granted by CISM).
- Post-Baccalaureate student, Department of Biomedical Engineering, Drexel University, Philadelphia, Pennsylvania, September 1994 - January 1995.
- Basic Microsurgery, Henry Ford Health System, Detroit, Michigan, completed June 2004 (Certificated).
- “Introductory LS-DYNA”, LSTC Michigan, Troy, Michigan, July 28-29, 2008.
- Davidson Fellowship, Entrepreneurship in Digital Health, Henry Ford Innovation Institute, September 12, 2014 – June 4, 2015.
- “Introduction to Abaqus/CAE”, Simulia/Dassault Systemes, Dearborn, Michigan, November 30-December 1, 2015 (Certificated).
- “Introduction to Abaqus/Standard and Abaqus/Explicit”, Simulia/Dassault Systemes, Dearborn, Michigan, December 2-4, 2015 (Certificated).

POSITIONS

- *1990-1991:* Electronics Engineer, ANI Computer Ltd., Ankara, Turkey.

- 1991-1992: Electronics Engineer and Technical Service Manager, Data Computer Ltd., Ankara, Turkey.
- 1992 - September 1994: Teaching and Research Assistant, Department of Engineering Sciences, Middle East Technical University, Turkey.
- January 1995 - February 1998: Graduate Research Assistant, Departments of Mechanical and Aerospace Engineering and Orthopedics, West Virginia University.
- February 1998 - February 2000: Post Doctoral Fellow, Bone and Joint Center, Henry Ford Hospital, Detroit, MI.
- February 2000 – August 2001: Assistant Staff Investigator, Bone and Joint Center, Henry Ford Hospital, Detroit, MI.
- August 2001 – December 2002: Associate Staff Investigator, Bone and Joint Center, Henry Ford Hospital, Detroit, MI.
- January 2003 – June 2011: Head, Section of Biomechanics and Level 1 Senior Bioscientific Staff (**Assistant Scientist**), Bone and Joint Center, Henry Ford Hospital, Detroit, MI.
- October 2003 – present: Full-Time Affiliate Assistant Professor, Department of Biomedical Engineering, Wayne State University, Detroit, MI.
- July 2011 – February 2020: Head, Section of Biomechanics and Level 2 Senior Bioscientific Staff (**Associate Scientist**), Bone and Joint Center, Henry Ford Hospital, Detroit, MI.
- March 2021 – present: Head, Section of Biomechanics and Level 3 Senior Bioscientific Staff (**Senior Scientist**), Bone and Joint Center, Henry Ford Hospital, Detroit, MI.

AWARDS/HONORS

- 1st Place, Student Poster Competition, SAMPE Baltimore - Washington Chapter, Student Symposium, February 11, 1998.
Poster: Yeni, Y. N., Brown, C. U. and Norman, T. L., "The Influence of Microstructure and Composition on the Fracture Toughness of Human Cortical Bone", presented by C. U. Brown.
- Graduate Student Research Award, Musculoskeletal Research Center, West Virginia University, May 29, 1998.
- Alice L. Jee Memorial Young Investigator Travel Award, International Society of Musculoskeletal and Neuronal Interactions, 31st International Sun Valley Hard Tissue Workshop, Sun Valley, Idaho, August 6-10, 2001.
- Best poster, 21st Annual Meeting of the Orthopaedic Trauma Association, Ottawa, Ontario, Canada, October 20-22, 2005.
Poster: Dougherty, P., Kim, D-G., Meisterling, S. and Yeni, Y. N., "Proximal Tibia Locking Plates: Bicortical versus Unicortical Screw Placement", presented by P. Dougherty.
- Best poster, 8th Annual Research Symposium of Henry Ford Health System, Detroit, Michigan, May 12-13, 2011.
Poster: Oravec, D. J., Zael, R. R. and Yeni, Y., "The Effect of Endplates on Cancellous Bone Strain Distribution in Uniaxially Compressed Rat T5 Vertebrae as Assessed by Digital Volume Correlation".
- Best poster, 15th Annual Research Symposium of Henry Ford Health System, Detroit, Michigan, May 24-25, 2018.
Poster: Oravec, D., Zael, R., Rao, S., Flynn, M. J. and Yeni, Y. N., "Vertebral displacement measurement using tomosynthesis based digital volume correlation in vitro and in vivo".
- Best poster, 16th Annual Research Symposium of Henry Ford Health System, Detroit, Michigan, May 10, 2019.
Poster: Yeni, Y. N., Azad, S., Baumer, T., Oravec, D., Basheer, A., Bey, M. J., Bartol, S. W. and Chang,

V., "Dynamic Foraminal Dimensions During Neck Motion 6.5 Years After Fusion and Artificial Disc Replacement".

GRANTS

Active

Clinical Assessment of Vertebral Bone Quality Using Direct Biomechanical and Textural Analysis via Digital Tomosynthesis

FY18 DOD CDMRP Peer Reviewed Medical Research Program (PRMRP) Investigator-Initiated Research Award (W81XWH1910373, PR180156)

Award period: 09/15/2019 – 09/14/2022

Role on grant: Principal Investigator, 30% FTE

Partnering PI: SD Rao, Henry Ford Health System

Assessment of Bone Health via Digital Wrist Tomosynthesis in Mammography Setting

FY20 DOD CDMRP Peer Reviewed Medical Research Program (PRMRP) Investigator-Initiated Research Award (W81XWH2110530, PR200068)

Award period: 09/15/2021 – 09/14/2025

Role on grant: Principal Investigator, 30% FTE

Screening for Osteoporosis in Mammography Setting

National Institutes of Health (R01 AR078246A1)

Role on grant: Principal Investigator

Awarded, Declined due to overlap with above

Investigating the Multi-factorial Etiology of Rotator Cuff Pathology in Human Subjects

National Institutes of Health (K99 AR075876)

Award period: 09/01/2020 – 08/31/2022

Principal Investigator: Rebekah L. Lawrence, Henry Ford Health System

Role on grant: Co-mentor

Pending

None

Completed

A Clinically Viable Noninvasive Method for Direct Measurement of Mechanical Strains in Vertebral Bone

National Institutes of Health (R21 AR070363)

Award period: 04/01/2017 – 02/28/2019; NCE to 02/29/2020

Total Direct Cost: \$275,000

Role on grant: Principal Investigator, 25% FTE

Motion and Adjacent Segment Disease 5 Years After Cervical Fusion or Arthroplasty

Henry Ford Health System Mentored Physician Scientist Grant

Award period: 01/01/2016 – 12/31/2018

Total Direct Cost: \$501,693

Principal Investigator: V Chang, Henry Ford Health System

Role on grant: Primary Mentor

Diagnosis of Crystal-Based Arthropathies via Raman Spectroscopy

National Institutes of Health (1R01 AR057812-01A1)

Award period: 09/01/2011 - 08/31/2014; no cost extension to 08/31/2015

Role on grant: Sub-contract PI
Principal Investigator: O Akkus, Case Western Reserve University
Total Sub-contract Costs: \$145,251

Novel In Vitro Modification of Bone for an Allograft with Improved Toughness and Osteoconductivity
FY11 DOD CDMRP Discovery Award (PR11038)

Requested award period: 09/30/2012 – 03/30/2014; no cost extension to 03/30/2015
Total Direct Cost: \$125,000
Role on grant: Principal Investigator, 5% FTE

Digital Tomosynthesis-Based Microstructural Measures to Predict Vertebral Fragility (R21 AR059329)
National Institutes of Health

Award period: 8/1/2011-4/30/2013; no cost extension to 4/30/2014
Total Cost: \$402,875
Role on grant: Principal Investigator

Prediction of Vertebral Fractures Using Tissue Heterogeneity as a Measure of Bone Quality
Henry Ford Health System Competing Research Support

Award Period: 1/1/2011-12/31/2013
Total Costs: \$431,519 (up to 70% PI salary support + \$180,000)
Role on grant: Principal Investigator

Quantitative Analysis of Bone Microstructure using Tomosynthesis
FY10 DOD CDMRP Peer Reviewed Medical Research Program Concept Award (PR100729)

Award period: 09/30/2011 - 10/29/2012; extension to 10/29/2013
Total Cost: \$107,235
Role on grant: Principal Investigator

Viscoelastic deformation of bone matrix in postmenopause (R21 AG033714)
National Institutes of Health

Award Period: 5/01/2009-4/30/2012
Total Costs: \$334,150
Role on grant: Co-Investigator, 2% FTE
Principal Investigator: DG Kim, Ohio State University

Degradation and Recovery of Bone: OVX and Treatment (R01 AR50562)
National Institutes of Health

Award Period: 4/01/2005-3/31/2010
Direct Costs: \$1,100,000
Role on grant: Co-Investigator: 5% FTE (2 years), 10% FTE (3 years)
Principal Investigator: CM Les, Henry Ford Hospital

Contribution of creep to age related deformation of vertebral body
Mentored Scientist Award

Henry Ford Health System, 2007

Award Period: 01/01/2007-12/31/2009
Award amount: \$40K per year, 3 years + 50% FTE
Role on grant: Primary Mentor
Principal Investigator: Do-Gyoon Kim, Henry Ford Hospital

Tissue stress variability and strength in vertebral bone (R01 AR049343)
National Institutes of Health, Award Period: 1/10/03-12/31/07

Direct Costs: \$500,500

Role on grant: Principal Investigator, 30% full-time effort

New Ilizarov Technique for Pediatric Critical Care (R43 HD047493)

National Institutes of Health, Award Period: 05/01/06-6/19/07

Total cost: \$99,896

Role on grant: Principal Investigator (HFH-Subcontract): 10% FTE

Principal Investigator: M Pitkin, Poly-Orth International

Strength and Microstrain in Vertebral Trabecular Bone (R01 AR40776)

National Institutes of Health, Award Period: 07/01/1991-08/31/2004

Total award: \$ 859,451

Direct Costs: \$600,000

Role on grant: Co-Investigator: 10%

Principal Investigator: DP Fyhrie, Henry Ford Hospital

Mechanically Driven Release of Growth Factors in Bone

Junior Scientist Development Award

Henry Ford Health System, award Period: 07/01/2001-06/30/2003

Total direct cost: \$66,594

Role on grant: Principal Investigator, 50% effort

MEDIA COVERAGE

1. “Point of Service Testing May Improve Accuracy and Reduce Future Hospital Admissions in Gout and Pseudogout Patients”, News release and editorial coverage, American College of Roentgenology Annual Meeting, Boston, Nov 14-19, 2014.
*Singer, N., Li, B., **Yeni, Y.**, Barnboym, E., Lewis, S., Oravec, D., Haggins, D., and Akkus, O., “Raman Spectroscopy: Point of Service Diagnosis Is Sensitive and Specific-a Tool for Improving Accuracy and Reducing Future Hospital Admission”, paper no: L11.*
2. “DBT shows potential to assess bone health in women”, by Theresa Pablos, Associate Editor, News release and editorial coverage, AuntMinnie.com, 12/18/2020:
***Yeni, Y. N.**, Oravec, D., Drost, J., Bevins, N., Morrison, C. and Flynn, M. J. “Bone Health Assessment via Digital Wrist Tomosynthesis in the Mammography Setting Bone”, *BONE*, in press. doi: 10.1016/j.bone.2020.115804*
3. “DBT Bone Screening” in “AI in 2021 | CT + EMR | Bone DBT” By The Imaging Wire, 12/21/2020:
***Yeni, Y. N.**, Oravec, D., Drost, J., Bevins, N., Morrison, C. and Flynn, M. J. “Bone Health Assessment via Digital Wrist Tomosynthesis in the Mammography Setting Bone”, *BONE*, in press. doi: 10.1016/j.bone.2020.115804*

PUBLICATIONS

Book Chapters

1. Papaioannou, G., Demetropoulos, C. K., Anderst, W., **Yeni, Y.**, Fyhrie, D. and Tashman, S., 2004, “Menisci Radial Displacement Under Joint Load”. In “Scattering Theory and Biomedical Engineering Modeling and Applications”, Publisher: World Scientific, Editors: G. Dassios, D. I. Fotiadis, K. Kiriaki, C. V. Massalas.
2. Papaioannou, G., **Yeni, Y. N.**, 2006, “Joints, Biomechanics of”. In “Encyclopedia of Medical Devices and Instrumentation”, 2nd Edition, Publisher: Wiley Interscience, Editor: John Webster.

Journal Covers

1. Contrast Media & Molecular Imaging, 2007, 2 (1).

Peer-Reviewed Journal Papers

1. **Yeni, Y. N.**, Gunel, U., Korkusuz, F. and Akkas, N., 1995, “Ultrasonic Properties of Human Bones in Senile

- Osteoporosis” (in Turkish with English abstract), *Acta Orthopaedica and Traumatologica Turcica*, Vol. 29, pp. 294-298.
2. Akkas, N., **Yeni, Y. N.**, Turan, B., Delilbasi, E. and Gunel, U., 1997, “Effect of Medication on Biomechanical Properties of Rabbit Bones: Clinically Induced Osteoporosis”, *Clinical Rheumatology*, Vol. 16, No. 6, pp. 585-595. PMID: 9456011.
 3. **Yeni, Y. N.**, Brown, C. U., Wang, Z. and Norman, T. L., 1997, “The Influence of Bone Morphology on Fracture Toughness of the Human Femur and Tibia”, *BONE*, Vol. 21, No.5, pp. 453-459. PMID: 9356740.
 4. **Yeni, Y. N.**, Brown, C. U. and Norman, T. L., 1998, “The Influence of Bone Composition and Apparent Density on Fracture Toughness of the Human Femur and Tibia”, *BONE*, Vol. 22, No. 1, pp. 79-84. PMID: 9437517.
 5. Norman, T. L., **Yeni, Y. N.**, Brown, C. U. and Wang, Z., 1998, “Influence of Microdamage on Fracture Toughness of the Human Femur and Tibia”, *BONE*, Vol. 23, No. 2, pp. 303-306. PMID: 9737354.
 6. Kocamis, H., **Yeni, Y. N.**, Kirkpatrick-Keller, D. C. and Killefer, J., “Postnatal Growth of Broilers in Presence of *in ovo* Administration of Chicken Growth Hormone, 1999, *Poultry Science*, Vol. 78, No. 8, pp. 1219-1225. PMID: 10472850.
 7. Vashishth, D., Koontz, J., Qiu, S. J., Lundin-Cannon, D., **Yeni, Y. N.**, Schaffler, M. B. and Fyhrie, D. P., 2000, “In Vivo Diffuse Damage in Human Vertebral Cancellous Bone”, *BONE*, Vol. 26, No. 2, pp. 147-152. PMID: 10678409.
 8. Brown, C. U., **Yeni, Y. N.** and Norman, T. L., “Fracture Toughness is Dependent on Bone Location – A Study of the Femoral Neck, Femoral Shaft and the Tibial Shaft”, 2000, *Journal of Biomedical Materials Research*, Vol. 49, pp. 380-389. PMID: 10602071.
 9. **Yeni, Y. N.** and Norman, T. L., 2000, “Fracture Toughness of Human Femoral Neck: The Effect of Microstructure, Composition and Age”, *BONE*, Vol. 26, pp. 499-504. PMID: 10773590.
 10. **Yeni, Y. N.** and Norman, T. L., 2000, “Calculation of Porosity and Osteonal Cement Line Effects on the Effective Fracture Toughness of Cortical Bone in Longitudinal Crack Growth”, *Journal of Biomedical Materials Research*, Vol. 51, No. 3, pp. 504-509. PMID: 10880095.
 11. Kocamis, H., **Yeni, Y. N.**, Brown, C. U., Kenney, P. B., Kirkpatrick-Keller, D. C. and Killefer, J., 2000, “Effect of *in ovo* Administration of Insulin-Like Growth Factor-I on Composition and Mechanical Properties of Chicken Bone”, *Poultry Science*, Vol. 79, No. 9, pp. 1345-1350. PMID: 11020083.
 12. **Yeni, Y. N.**, Vashishth, D. and Fyhrie, D. P., 2001, “Estimation of Bone Matrix Apparent Stiffness Variation Caused by Osteocyte Lacunar Size and Density”, *Journal of Biomechanical Engineering*, Vol. 123, pp. 10-17. PMID: 11277294.
 13. **Yeni, Y. N.**, Hou, F. J., Vashishth, D. and Fyhrie, D. P., 2001, “Trabecular Shear Stress in Human Vertebral Cancellous Bone: Intra- and Inter-Individual Variations”, *Journal of Biomechanics*, Vol. 34, No. 10, pp. 1341-1346. PMID: 11522314.
 - 13.1. **Yeni, Y. N.**, Hou, F. J., Vashishth, D. and Fyhrie, D. P., 2004, Corrigendum to “Trabecular Shear Stress in Human Vertebral Cancellous Bone: Intra- and Inter-Individual Variations”, *Journal of Biomechanics*, Vol. 37, No. 10, pp. 1635-1637.
 14. **Yeni, Y. N.** and Fyhrie, D. P., 2001, “Finite Element Predicted Apparent Stiffness is a Consistent Predictor of Apparent Strength in Human Cancellous Bone Tested with Different Boundary Conditions”, *Journal of Biomechanics*, Vol. 34, No. 12, pp. 1649-1654. PMID: 11716868.
 15. **Yeni, Y. N.** and Fyhrie, D. P., 2002, “Fatigue Damage-Fracture Mechanics Interaction in Cortical Bone”, *BONE*, Vol. 30, No. 3, pp. 509-514. PMID: 11882466.
 16. **Yeni, Y. N.**, Schaffler, M. B., Gibson, G. and Fyhrie, D. P., 2002, “Prestress Due to Dimensional Changes

Caused by Mineralization: A Potential Mechanism for Microcracking in Bone”, *Annals of Biomedical Engineering*, Vol. 30, pp. 217-225. PMID: 11962773.

17. **Yeni, Y. N.**, Hou, F. J., Ciarelli, T., Vashishth, D. and Fyhrie, D. P., 2003, “Trabecular Shear Stresses Predict in vivo Linear Microcrack Density but not Diffuse Damage in Human Vertebral Cancellous Bone”, *Annals of Biomedical Engineering*, Vol. 31, No. 6, pp. 726-732. PMID: 12797623.
18. **Yeni, Y. N.** and Fyhrie, D. P., 2003, “A Rate-Dependent Microcrack-Bridging Model that Can Explain the Strain Rate Dependency of Cortical Bone Apparent Yield Strength”, *Journal of Biomechanics*, Vol. 36, No. 9, pp. 1343-1353. PMID: 12893043.
19. Dong, X., **Yeni, Y. N.**, Les, C. M. and Fyhrie, D. P., 2004, “Effects of end boundary conditions and specimen geometry on the viscoelastic properties of cancellous bone measured by dynamic mechanical analysis”, *Journal of Biomedical Materials Research*, Vol. 68A, pp. 573-583. PMID: 14762938.
20. **Yeni, Y. N.**, Christopherson, G. T., Turner, A. S., Les, C. M. and Fyhrie, D. P., 2004, “Apparent viscoelastic anisotropy as measured from non-destructive oscillatory tests can reflect the presence of a flaw in cortical bone”, *Journal of Biomedical Materials Research*, Vol. 69A, pp. 124-130. PMID: 14999759.
21. **Yeni, Y. N.**, Dong, X. N., Fyhrie, D. P. and Les, C. M., 2004, The Dependence Between the Strength and Stiffness of Cancellous and Cortical Bone Tissue for Tension and Compression: Extension of a Unifying Principle, *Bio-Medical Materials and Engineering*, Vol. 14, No. 3, pp. 303-310. PMID: 15299242.
22. Kim, D. G., Christopherson, G. T., Dong, X. N., Fyhrie, D. P. and **Yeni, Y. N.**, 2004, “The Effect Of Microcomputed Tomography Scanning And Reconstruction Voxelsize On The Accuracy Of Stereological Measurements In Human Cancellous Bone”, *BONE*, Vol. 35, No. 6, pp. 1375-1382. PMID: 15589219.
23. Akkus, O., **Yeni, Y. N.** and Wasserman, N., 2004, “Fracture Mechanics of Cortical Bone Tissue: A Hierarchical Perspective”, *Critical Reviews In Biomedical Engineering*, Vol. 32, No. 5-6, pp. 379-426. PMID: 15658930.
24. **Yeni, Y. N.**, Christopherson, G. T., Dong, X. N., Kim, D. G. and Fyhrie, D. P., 2005, The effect of microcomputed tomography voxelsize on the finite element model accuracy for human cancellous bone, *Journal of Biomechanical Engineering*, Vol. 127, pp. 1-8. PMID: 15868782.
25. Dong, X. N., **Yeni, Y. N.**, Zhang, B., Les, C. M., Gibson, G. J. and Fyhrie, D. P., 2005, “Matrix Concentration of Insulin-like Growth Factor I (IGF-I) is Negatively Associated with Biomechanical Properties of Human Tibial Cancellous Bone Within Individual Subjects”, *Calcified Tissue International*, 77 (1): 37-44. PMID: 15906016.
26. Zauel, R., **Yeni, Y. N.**, Bay, B. K., Dong, X. N., and Fyhrie, D. P., 2006, “Comparison of the linear finite element prediction of deformation and strain of human cancellous bone to 3D digital volume correlation measurements”, *Journal of Biomechanical Engineering*, Vol. 128, pp. 1-6. PMID: 16532610.
27. Kim, D. G., Dong, X. N., Cao, T., Baker, K. C., Shaffer, R. R. and Fyhrie, D. P., **Yeni, Y. N.**, 2006, “Evaluation Of Filler Materials Used For Uniform Load Distribution At Boundaries During Structural Biomechanical Testing Of Whole Vertebrae”, *Journal of Biomechanical Engineering*, Vol. 128, pp. 161-165. PMID: 16532630.
28. **Yeni, Y. N.**, Kim, D. G., Dong, X. N., Turner, A. S., Les, C. M. and Fyhrie, D. P., 2006, “Do sacrificial bonds affect the viscoelastic and fracture properties of bone?”, *Clinical Orthopaedics and Related Research*, 443:101-108. PMID: 16462432.
29. **Yeni, Y. N.**, Yerramshetty, J., Akkus, O., Pechey, C. and Les, C. M., 2006, “Effect of fixation and embedding media on Raman spectroscopy of bone tissue”, *Calcified Tissue International*, 78: 363-371. PMID: 16830201.
30. Dougherty, P. J., Silverton, C., **Yeni, Y.**, Tashman, S., and Weir, R., 2006, “Conversion of Temporary External Fixation to Definitive Fixation-Shaft Fractures”, *Journal of the American Academy of Orthopaedic*

Surgeons, 14: S124-S127. PMID: 17003183.

31. Sterba, W., Kim, D. G., Fyhrie, D. P., **Yeni, Y. N.**, Vaidya, R., 2007, "Biomechanical Analysis of Differing Pedicle Screw Insertion Angles", *Clinical Biomechanics*, 22: 385-391. PMID: 17208340.
32. **Yeni, Y. N.**, Shaffer, R. R., Baker, K. C., Dong, X. N., Grimm, M. J., Les, C. M. and Fyhrie, D. P., 2007, "The Effect Of Yield Damage On The Viscoelastic Properties Of Cortical Bone Tissue As Measured By Dynamic Mechanical Analysis", *Journal of Biomedical Materials Research*, Vol. 82A: 530-537. PMID: 17295254.
33. Kim, D. G., Hunt, C. A., Zael, R., Fyhrie, D. P. and **Yeni, Y. N.**, 2007, "The effect of regional variations of the trabecular bone properties on the compressive strength of human vertebral bodies", *Annals of Biomedical Engineering*, 35: 1907-13. PMID: 17690983.
34. Brown, S. L., Freytag, S. O., Barton, K. N., Flynn, M. J., Peck, D. J., Dragovic, A., Jin, R., **Yeni, Y. N.**, Fyhrie, D. P., Les, C. M., Zhu, G., Kolozsvary, A., Pitchford, W., Nathanson, S. D., Fenstermacher, J. D., Kim, J. H., 2007, "Reporter gene imaging using radiographic contrast from nonradioactive iodide sequestered by the sodium-iodide symporter", *Contrast Media & Molecular Imaging*, 2: 240-247. PMID: 18058866.
35. **Yeni, Y. N.**, Zelman, E. A., Divine, G. W., Kim, D. G., and Fyhrie, D. P., 2008, "Trabecular shear stress amplification and variability in human vertebral cancellous bone: relationship with age, gender, spine level and trabecular architecture", *BONE*, 42: 591-596. PMID: 18180212.
36. Dougherty, P. J., Kim, D. G., Meisterling, S., Wybo, C. D., **Yeni, Y.**, 2008, "Biomechanical comparison of bicortical versus unicortical screw placement of proximal tibia locking plates: a cadaveric model", *Journal of Orthopaedic Trauma*, 22: 399-403. PMID: 18594304.
37. Norman, T. L., Little, T. M., **Yeni, Y. N.**, 2008, "Cortical Bone Remodeling and In-Service Damage Accumulation", *Journal of Biomechanics*, 41: 2868-2873. PMID: 18703196.
38. Kiner, D. W., Wybo, C. D., Sterba, W., **Yeni, Y. N.**, Bartol, S. W., and Vaidya, R., 2008, "Biomechanical Analysis of Different Techniques in Revision Spinal Instrumentation: Larger Diameter Screws versus Cement Augmentation", *SPINE*, 33: 2618-2622. PMID: 19011543.
39. **Yeni, Y. N.**, Kim, D-G., Divine, G. W., Johnson, E. M. and Cody, D. D., 2009, "Human cancellous bone from T12-L1 vertebrae has unique microstructural and trabecular shear stress properties", *BONE*, 44: 130-136. PMID: 18848654.
40. Cheng, X., Haggins, D. G., York, R. H., **Yeni, Y. N.**, and Akkus, O., 2009, "Diagnosis of Crystals Leading to Joint Arthropathies by Raman Spectroscopy: Comparison with Compensated Polarized Imaging", *Applied Spectroscopy*, 63: 381-386. PMID: 19366502.
41. **Yeni, Y. N.**, Dong, X. N., Zhang, B., Gibson, G. J., and Fyhrie, D. P., 2009, "Cancellous Bone Properties and Matrix Content of TGF- β 2 and IGF-I in Human Tibia", *Clin Orthop Relat Res*, 467:3079-86. PMID: 19472023.
42. Yerramshetty, J. S., Kim, D-G. and **Yeni, Y. N.**, "Increased microstructural variability is associated with decreased structural strength but with increased measures of structural ductility in human vertebrae", *J Biomech Eng*. 2009: 131(9):094501. PMID: 19725698.
43. Bonifasi-Lista, C., Cherkaev, E. and **Yeni, Y. N.**, "Analytical approach to recovering bone porosity from effective complex shear modulus", *Journal of Biomechanical Engineering*, 2009;131(12): 121003. PMID: 20524726.
44. **Yeni, Y. N.** "Tissue Variability: An Important Quality of Bone", 2010, In "*On the Horizon From the ORS*" by *Arnoczky SP, Caballero O, Yeni YN*, the *Journal of the American Academy of Orthopaedic Surgeons*, 18(7):445-8. PMID: 20595137.

45. Nekkanty, S., Yerramshetty, J., Kim, D-G., Zael, R., Johnson, E., Cody, D. D. and **Yeni, Y. N.**, 2010, “Stiffness of the endplate boundary layer and endplate surface topography are associated with brittleness of human whole vertebral bodies”, *BONE*, 47: 783-789. PMID: 20633709.
46. Guan, F, Mao, H., Han, X., Wagner, C., **Yeni, Y. N.** and Yang, K. H., “Application of Optimization Methodology and Specimen-Specific Finite Element Models for Investigating Material Properties of Rat Skull”, 2011, *Annals of Biomedical Engineering*, 39: 85-95. PMID: 20652748.
47. Mao, H., Wagner, C., Guan, F, **Yeni, Y. N.** and Yang, K. H., “Material Properties of Adult Rat Skull”, 2011, *Journal of Mechanics in Medicine and Biology*, Vol. 11, No. 5, 1199–1212.
48. Kim, D-G., Shertok, D., Ching Tee, B. and **Yeni, Y. N.**, “Variability of Tissue Mineral Density can Determine Physiological Creep of Human Vertebral Cancellous Bone”, 2011, *Journal of Biomechanics*, 44:1660-5. PMID: 21481880.
49. **Yeni, Y. N.**, Zinno, M. J., Yerramshetty, J., Zael, R. and Fyhrie, D. P., 2011, “Variability of trabecular microstructure is age-, gender-, race- and anatomic site-dependent and affects stiffness and stress distribution properties of human vertebral cancellous bone”, *BONE*, 49:886-894. PMID: 21802536. PMCID: PMC3170516.
50. **Yeni, Y. N.**, Brown, C. U., Gruen, T. A. and Norman, T. L., 2013, “The Relationships between Femoral Cortex Geometry and Tissue Mechanical Properties”, *Journal of the Mechanical Behavior of Biomedical Materials*, 21: 9-16. PMID:23454364.
51. **Yeni, Y. N.**, Poisson, L. M. and Flynn, M. J., 2013, “Heterogeneity of bone mineral density and fatigue failure of human vertebrae”, *Journal of Biomechanics*, 46:1396-1399. PMID:23538003. PMCID:3628284.
52. **Yeni, Y. N.**, Wu, B., Huang, L. and Oravec, D., 2013, “Mechanical Loading Causes Detectable Changes in Morphometric Measures of Trabecular Structure in Human Cancellous Bone”, *Journal of Biomechanical Engineering*, 135 (5): 054505. doi:10.1115/1.4024136. PMID:24231966. PMCID:PMC3705850.
53. Yang, S., Li, B., Slipchenko, M. N., Akkus, A., Singer, N. G., **Yeni, Y. N.** and Akkus, O., 2013, “Laser Wavelength Dependence of Background Fluorescence in Raman Spectroscopic Analysis of Synovial Fluid from Symptomatic Joints”, *Journal of Raman Spectroscopy*, 44: 1089-1095. DOI 10.1002/jrs.4338. PMID:24058259. PMCID:PMC3775384.
54. Kim, W., Oravec, D., Nekkanty, S., Yerramshetty, J., Sander, E., Divine, G. W., Flynn, M. J. and **Yeni, Y. N.**, 2015, “Digital tomosynthesis (DTS) for quantitative assessment of trabecular microstructure in human vertebral bone”, *Medical Engineering & Physics*, 37(1):109-20. PMID: 25498138.
55. Oravec, D., Quazi, A., Xiao, A., Yang, E., Zael, R., Flynn, M. J. and **Yeni, Y. N.**, 2015, “Digital Tomosynthesis and High Resolution Computed Tomography as Clinical Tools for Vertebral Endplate Topography Measurements: Comparison with Microcomputed Tomography”, *BONE*, 81:300-305. PMID: 26220145.
56. Li, B., Singer, N. G., **Yeni, Y. N.**, Haggins, D. G., Barnboym, E., Oravec, D., Lewis, S. and Akkus, O., 2016, “A point of care Raman spectroscopy based device to diagnose gout and pseudogout: comparison with the clinical standard microscopic analysis”, *Arthritis & Rheumatology*, 68(7):1751-7. PMID: 26882173 DOI: 10.1002/art.39638.
57. Nelson, F., Bokhari, O., Oravec, D., Kim, W., Flynn, M., Lumley, C., McPhilamy, A. and **Yeni, Y. N.**, 2017, “The use of tomosynthesis in the global study of knee subchondral insufficiency fractures”, *Academic Radiology*, 24:175-183. PMID: 28010915.
58. Kim, W., Oravec, D., Divine, G., Flynn, M. J. and **Yeni, Y. N.**, 2017, “Effect of View, Scan Orientation and Analysis Volume on Digital Tomosynthesis (DTS) Based Textural Analysis of Bone”, *Annals of Biomedical Engineering*, 45: 1236-1246. PMID: 28083858.
59. Chang, V., Basheer, A., Baumer, T., Oravec, D., McDonald, C. P., Bey, M. J., Bartol, S. W. and **Yeni, Y.**

- N., 2017, “Dynamic height and width of cervical neural foramina during normal neck rotation and extension in asymptomatic volunteers”, *Surgical and Radiologic Anatomy*, 39 (10): 1069-1078. PMID: 28343254.
60. Buraimoh, M. A., Okoroha, K. R., Oravec, D. J., Peltz, C. D., **Yeni, Y. N.** and Muh, S. J., 2018, “A biomechanical comparison of subscapularis repair techniques in total shoulder arthroplasty: lesser tuberosity osteotomy versus subscapularis peel”, *Journal of Shoulder and Elbow Surgery Open Access*, 2(1): 8-12. PMID: 30675560.
61. **Yeni, Y. N.**, Baumer, T., Oravec, D., Basheer, A., McDonald, C. P., Bey, M. J., Bartol, S. W. and Chang, V., 2018, “Dynamic Foraminal Dimensions During Neck Extension and Rotation in Fusion and Artificial Disc Replacement: An Observational Study”, *The Spine Journal*, 18: 575-583. PMID: 28882520.
62. Li, B., Singer, N., Rosenthal, A., Unal, M., Haggins, D., **Yeni, Y. N.** and Akkus, O., 2018, “Chemical characterization of Maltese-cross birefringent particles in synovial fluid samples collected from symptomatic joints”, *Joint Bone Spine*, 85: 501-503. PMID: 28965940.
63. Oravec, D., Kim, W., Flynn, M. J. and **Yeni, Y. N.**, 2018, “The Relationship of Whole Human Vertebral Body Creep to Geometric, Microstructural, and Material Properties”, *Journal of Biomechanics*, 73: 92-98. PMID: 29599039.
64. **Yeni, Y. N.**, Kim, W., Oravec, D., Nixon, M., Divine, G. W. and Flynn, M. J., “Assessment of Vertebral Wedge Strength Using Cancellous Textural Properties Derived from DTS and Density Properties from DXA and HRCT”, 2018, *Journal of Biomechanics*, 79: 191-197. PMID: 30173933.
65. Oravec, D., Yaldo, O., Bolton, C., Flynn, M. J., Marnix van Holsbeeck, M. and **Yeni, Y. N.**, 2019, “Digital Tomosynthesis and Fractal Analysis Predict Prevalent Vertebral Fractures: A Preliminary In Vivo Study”, *American Journal of Roentgenology*, 213: W38-W44. PMID: 30973772.
66. Oravec, D., Flynn, M. J., Zael, R., Rao, S. and **Yeni, Y. N.**, 2019, “Digital Tomosynthesis Based Digital Volume Correlation: A Clinically Viable Noninvasive Method for Direct Measurement of Vertebral Biomechanics”, *Medical Physics*, 46: 4553-4562. PMID: 31381174.
67. **Yeni, Y. N.**, Baumer, T., Oravec, D., Basheer, A., Bey, M. J., Bartol, S. W. and Chang, V., 2020, “Correlation of Neural Foraminal Motion After Surgical Treatment of Cervical Radiculopathy with Long-term Patient Reported Outcome”, *Journal of Spine Surgery*, 6(1): 18-25. PMID: 32309642. doi: 10.21037/jss.2020.03.02
68. Azad, S., Oravec, D., Baumer, T., Schildcrout, A., White, P., Basheer, A., Bey, M. J., Bartol, S. W., Chang, V. and **Yeni, Y. N.**, 2020, “Dynamic Foraminal Dimensions During Neck Motion 6.5 Years After Fusion and Artificial Disc Replacement”, *PLoS One*, 15(8): e0237350. PMID: 32780779. <https://doi.org/10.1371/journal.pone.0237350>.
69. Oravec, D., Zael, R., Flynn, M. J. and **Yeni, Y. N.**, 2020, “Vertebral Stiffness Measured via Tomosynthesis-Based Digital Volume Correlation is Strongly Correlated with Reference Values from Micro-CT-Based DVC”, *Medical Engineering and Physics*, 84: 169-173. PMID: 32977915. <https://doi.org/10.1016/j.medengphy.2020.08.008>
70. Oravec, D., Drost, J., Zael, R., Flynn, M. J. and **Yeni, Y. N.**, 2021, “Assessment of Intravertebral Mechanical Strains and Cancellous Bone Texture Under Load using a Clinically Available Digital Tomosynthesis Modality”, *Journal of Biomechanical Engineering*, 143 (10): 101011. PMID: 34041529. doi: [10.1115/1.4051280](https://doi.org/10.1115/1.4051280).
71. **Yeni, Y. N.**, Oravec, D., Drost, J., Bevins, N., Morrison, C. and Flynn, M. J. “Bone Health Assessment via Digital Wrist Tomosynthesis in the Mammography Setting”, *BONE* 144 (2021) paper no: 115804. PMID: 33321264. doi: [10.1016/j.bone.2020.115804](https://doi.org/10.1016/j.bone.2020.115804).
72. **Yeni, Y. N.**, Dix, M. R., Xiao, A., Oravec, D. J. and Flynn, M. J., 2022, “Vertebral Endplate and Shell Thickness Measurement Using Digital Tomosynthesis”, *BONE*, 157:116341. PMID: 35092890. doi:

73. Oravec, D, Kim, W., Flynn, M. J. and **Yeni, Y. N.**, 2022, “The Relationship of Whole Human Vertebral Body Creep to Bone Density and Texture via Clinically Available Imaging Modalities”, *Journal of Biomechanics*, 135: 111021. PMID: 35245836. [doi: 10.1016/j.jbiomech.2022.111021](https://doi.org/10.1016/j.jbiomech.2022.111021).
74. **Yeni, Y. N.**, Dix, M. R, Xiao, A. and Oravec, D. J., “Uniaxial compressive properties of human lumbar 1 vertebrae loaded beyond compaction and their relationship to cortical and cancellous microstructure, size and density properties”, *Journal of the Mechanical Behavior of Biomedical Materials*, *in press*.

Reviewed Conference Papers / Abstracts

1. Turan, B., **Yeni, Y. N.**, Gunel, U., Delilbasi, E., Irfanoglu, B. and Akkas N., 1994, “Biomechanical Characteristics of Osteoporotic Bones in Rabbits: An Experimental Study”, *Proceedings of The Second Biennial European Joint Conference on Engineering Systems Design and Analysis*, London, England, July 4-7, ASME PD Vol. 64-4, pp. 91-95.
2. Yazar, T., Korkusuz, F. and **Yeni, Y.**, 1994, “Screw Pull-Out Tests for the Ibn-i Sina Transpedicular Spinal Instrument”, *Abstract Book, 3rd International Congress on Spine Surgery*, Antalya, Turkey, October 2-6.
3. Akkas, N., **Yeni, Y.**, Gunel, U., Delilbasi, E. and Turan B., 1994, “Effect of Medication on Biomechanical Properties of Rabbit Bones: Clinically Induced Osteoporosis”, *Proceedings of the 8th International Conference on Biomedical Engineering* (eds: J. C. H. Goh and A. Nather), Singapore, December 7-10, pp. 198-200.
4. **Yeni, Y. N.**, Brown, C. U. and Norman, T. L., 1996, “The Influence of Biochemical and Morphological Constituents of Human Bone on Microdamage”, *Advances in Bioengineering*, ASME BED-Vol. 33, pp. 309-310.
5. **Yeni, Y. N.**, Brown, C. U. and Norman, T. L., 1997, “The Influence of Microstructure and Composition on the Fracture Toughness of Human Cortical Bone”, *Proceedings of the 1997 Bioengineering Conference*, June 11-15, Sun River, Oregon, ASME BED-Vol. 35, pp. 189-190.
6. **Yeni, Y. N.** and Norman, T. L., “Hydroxyapatite Crystal Perfection Influences the Fracture Toughness of Human Cortical Bone”, *Transactions of the 44th Annual Meeting of Orthopaedic Research Society*, March 16-19, 1998, New Orleans, Louisiana, p. 961.
7. Brown, C. U., **Yeni, Y. N.** and Norman, T. L., “The Microstructure of Human Bone Influences Fracture Toughness Similar to Fiber-Reinforced Composites”, presented at the Society for the Advancement of Materials and Process Engineering (SAMPE) Student Symposium, 43rd International SAMPE Symposium and Exhibition, May 31-June 4, 1998, Anaheim, California.
8. Brown, C. U., **Yeni, Y. N.** and Norman, T. L., 1998, “Fracture Toughness of the Femoral Neck, Femoral Shaft, and Tibial Shaft in Aged Bone”, *Advances in Bioengineering*, ASME BED-Vol. 39, pp. 279-280.
9. **Yeni, Y. N.**, Brown, C. U. and Norman, T. L., 1998, “Fracture Toughness of Cortical Bone from the Femur Correlates with Radiogrammetrical Parameters in the Elderly”, *Advances in Bioengineering*, ASME BED-Vol. 39, pp. 273-274.
10. **Yeni, Y. N.**, Grimm, M. J., Saad, A. M., Schaffler, M. B. and Fyhrie, D. P., “Microdamage in Cortical Bone Increases Attenuation of Ultrasonic Shear Waves”, *Transactions of the 45th Annual Meeting of Orthopaedic Research Society*, February 1-4, 1999, Anaheim, California, p. 764.
11. **Yeni, Y. N.** and Norman, T. L., “A Formulation of the Influence of Osteons on the Fracture Toughness of Cortical Bone in Longitudinal Crack Growth”, *Proceedings of the 23rd Annual Meeting of the American Society of Biomechanics*, October 21-23, 1999, Pittsburgh, PA, pp. 154-155.
12. **Yeni, Y.**, Vashishth, D. and Fyhrie, D., “Effect of Osteocyte Lacunae on the Apparent Matrix Stiffness of Bone”, *Transactions of the 46th Annual Meeting of the Orthopaedic Research Society*, March 12-15, 2000, Orlando, Florida, p. 745.

13. **Yeni, Y.**, Hou, F., Vashishth, D. and Fyhrie, D., “Trabecular Shear Stress in Human Vertebral Cancellous Bone”, Transactions of the 46th Annual Meeting of the Orthopaedic Research Society, March 12-15, 2000, Orlando, Florida, p. 32.
14. Bay, B. K., Smith, T., Fyhrie, D. and **Yeni, Y.**, “Mechanical Strain Stimulus Does Not Explain Postovariectomy Maintenance of Bone Balance in the Rat Proximal Tibial Epiphysis”, Proceedings of the 12th Conference of the European Society of Biomechanics, August 27-30, 2000, Dublin, Ireland, p. 34.
15. **Yeni, Y. N.** and Fyhrie, D. P., “Finite Element Predicted Apparent Stiffness is a Consistent Predictor of Apparent Strength in Human Cancellous Bone Tested with Different Boundary Conditions”, Abstract Supplement for the 2000 Annual Fall Meeting of the Biomedical Engineering Society, October 12-14, 2000, Seattle, Washington, Annals of Biomedical Engineering, Vol. 28, Suppl. 1, p. S7.
16. Fyhrie, D., **Yeni, Y.**, Lin, D. Li and Gibson, G., “Mechanical Stress Driven Release of TGF Beta2 from Mineralized Cancellous Bone”, Transactions of the 47th Annual Meeting, Orthopaedic Research Society, February 25-28, 2001, San Francisco, California, p. 239.
17. **Yeni, Y. N.** and Fyhrie, D. P., “Fatigue Damage and Crack Growth Parameters in Bovine Cortical Bone”, Proceedings of the 2001 SEM Annual Conference & Exposition on Experimental and Applied Mechanics, June 4-6, Portland, Oregon, pp. 92-95.
18. **Yeni, Y. N.** and Fyhrie, D. P., Collagen-Bridged Microcrack Model for Cortical Bone Tensile Strength, 2001 Summer bioengineering Conference, the American Society of Mechanical Engineers, June 27-July 1, Snowbird, Utah, Advances in Bioengineering, ASME BED-Vol. 50, pp. 293-294.
19. **Yeni, Y. N.**, Vashishth, D. and Fyhrie, D. P., Variations in Apparent Strength and Stiffness of Human Vertebral Cancellous Bone are Consistent with Trabecular Shear Stress Distribution Statistics Along the Spine, 2001 Summer bioengineering Conference, the American Society of Mechanical Engineers, June 27-July 1, Snowbird, Utah, Advances in Bioengineering, ASME BED-Vol. 50, pp. 19-20.
20. **Yeni, Y. N.**, Patel, B., Gibson, G. J. and Fyhrie, D. P., Relief of Mineralization Pre-Strains on Collagen Causes Strains Equivalent to Toe-in Strains Observed in Tensile Testing of Demineralized Bone, 2001 Summer Bioengineering Conference, the American Society of Mechanical Engineers, June 27-July 1, Snowbird, Utah, Advances in Bioengineering, ASME BED-Vol. 50, pp. 285-286.
21. **Yeni, Y. N.** and Fyhrie, D. P., Collagen-Bridged Microcrack Model for Cortical Bone Tensile Strength, 31st International Sun Valley Hard Tissue Workshop, Sun Valley, Idaho, August 6- 10, 2001, Journal of Musculoskeletal and Neuronal Interactions, Vol. 2, No. 1, pp. 103.
22. Fyhrie, D. P., Hou, F. J. and **Yeni, Y. N.**, Trabecular Von Mises Stresses Predict In Vivo Microcrack Density In Human Vertebral Cancellous Bone, Annual Fall Meeting of the Biomedical Engineering Society, October 4-7, 2001, Durham, NC, Annals of Biomedical Engineering, Vol. 29, Suppl. 1, p. S33.
23. Fyhrie, D., Hou, F., Ciarelli, T., Vashishth, D. and **Yeni, Y. N.**, Linear Microcracks But Not Diffuse Damage Are Predicted By Von Mises Stress In Human Vertebral Cancellous Bone, Transactions of the 48th Annual Meeting, Orthopaedic Research Society, February 10-13, 2002, Dallas, Texas, p. 0014.
24. **Yeni, Y. N.** and Fyhrie, D. P., Fatigue Damage Reduces The Resistance To Crack Growth For Post-Fatigue Fracture In Cortical Bone, Transactions of the 48th Annual Meeting, Orthopaedic Research Society, February 10-13, 2002, Dallas, Texas, p. 0550.
25. **Yeni, Y. N.** and Fyhrie, D. P., Post-Fatigue Behavior Can Be Predicted By A Single Rule In Cortical Bone, Transactions of the 48th Annual Meeting, Orthopaedic Research Society, February 10-13, 2002, Dallas, Texas, p. 0549.
26. **Yeni, Y. N.** and Fyhrie, D. P., Osteocyte Density Correlates With Trabecular Shear Stresses In Human Vertebral Cancellous Bone, Transactions of the 48th Annual Meeting, Orthopaedic Research Society, February 10-13, 2002, Dallas, Texas, p. 0556.

27. **Yeni, Y. N.** and Fyhrie, D. P., Viscoelastic Microcrack-Bridging Can Explain The Strain Rate Dependency Of Cortical Bone Apparent Strength, Transactions of the 48th Annual Meeting, Orthopaedic Research Society, February 10-13, 2002, Dallas, Texas, p. 0018.
28. **Yeni, Y. N.**, Christopherson, G. T. and Fyhrie, D. P., Post-Yield Energy Absorption Of Cancellous Bone Is Predictable From Viscoelastic Properties of Undamaged Tissue, Transactions of the 48th Annual Meeting, Orthopaedic Research Society, February 10-13, 2002, Dallas, Texas, p. 0087.
29. Fyhrie, D. P., **Yeni, Y. N.**, Vashishth, D. and Les, C. M., The Mechanism and Significance of the Correlation Between Bone Strength and Stiffness, Proceedings of the IV World Congress of Biomechanics, August 4-9, 2002, Calgary, Canada, Symposium 5163.
30. Dong, X. N., **Yeni, Y. N.**, Christopherson, G. T., Les, C. M., Turner, A. S. and Fyhrie, D. P., The Influence Of Sacrificial Bonds On Viscoelastic Properties Of Cortical Bone, Transactions of the 49th Annual Meeting, Orthopaedic Research Society, February 2-5, 2003, New Orleans, Louisiana, p. 53.
31. Dong, X. N., **Yeni, Y. N.** and Fyhrie, D. P., Dynamic Mechanical Analysis Of Cancellous Bone: The Effect Of Specimen Geometry And End Boundary Conditions, Transactions of the 49th Annual Meeting, Orthopaedic Research Society, February 2-5, 2003, New Orleans, Louisiana, p. 425.
32. **Yeni, Y. N.**, Fyhrie, D. P. and Les, C. M., The Dependence Between The Strength And Stiffness Of Cortical Bone Is Similar For Tension And Compression, Transactions of the 49th Annual Meeting, Orthopaedic Research Society, February 2-5, 2003, New Orleans, Louisiana, p. 22.
33. **Yeni, Y. N.**, Gibson, G. J., Yang, M., Zhang, B. B., Spence, C., Les, C. M. and Fyhrie, D. P., Differences In The Localization And Accessibility Between Transforming Growth Factor Beta 1, Beta 2 And Vascular Endothelial Growth Factor In Bone Matrix Suggest Different Roles For These Molecules In Mechanobiology Of Bone, Transactions of the 49th Annual Meeting, Orthopaedic Research Society, February 2-5, 2003, New Orleans, Louisiana, p. 402.
34. **Yeni, Y. N.**, Christopherson, G. T., Turner, A., Les, C. M., and Fyhrie, D. P., Presence Of A Flaw Increases The Apparent Viscoelastic Anisotropy As Measured From Non-Destructive Oscillatory Tests In Cortical Bone, Transactions of the 49th Annual Meeting, Orthopaedic Research Society, February 2-5, 2003, New Orleans, Louisiana, p. 1091.
35. **Yeni, Y. N.**, Hou, F. J., Ciarelli, T., Vashishth, D. and Fyhrie, D. P., Weak And Nonsignificant Correlations Of In Vivo Diffuse Damage With Mechanical Properties, Tissue Architecture And Trabecular Stress Distributions In Human Vertebral Cancellous Bone: A Direct Association Between In Vivo Diffuse Damage And Mechanical Properties Is Not Supported, Transactions of the 49th Annual Meeting, Orthopaedic Research Society, February 2-5, 2003, New Orleans, Louisiana, p. 413.
36. **Yeni, Y. N.**, Patel, B., Fyhrie, D. P. and Cody, D. D., Permanent Deformation Of Human Vertebral Bodies Is Spine Level-Dependent And Associated With Residual Viscoelastic Properties, Transactions of the 49th Annual Meeting, Orthopaedic Research Society, February 2-5, 2003, New Orleans, Louisiana, p. 1091.
37. Dong, X. N., **Yeni, Y. N.**, Zhang, B., Gibson, G. and Fyhrie, D. P., Bone Mass, Strength and Stiffness are Reduced in Human Tibial Cancellous Bone Tissue with High TGF- β 2 Content, Proceedings of the ASME 2003 Summer Bioengineering Conference (Eds: LJ Soslowky, TC Skalak and GA Livesay), June 25-29, Sonesta Beach Resort in Key Biscayne, Florida, pp. 379-380.
38. Papaioannou, G., Demetropoulos, C.K., Anderst, W., **Yeni, Y.**, Fyhrie, D., Tashman, S., "Menisci Radial Displacement Under Joint Load", 6th Conference in Scattering Theory and Biomedical Engineering Modeling and Applications", 19-26th September 2003- Ioannina, Greece.
39. Fyhrie, D. P., **Yeni, Y. N.** and Dong, X. N., Strain Amplification in Cancellous Bone, 2003 BMES Annual Fall Meeting, October 1-4, Nashville, Tennessee.
40. **Yeni, Y. N.**, Zhang, B., Fyhrie, D. P. and Gibson, G. J., Damaging Mechanical Loads Release Sequestered Transforming Growth Factor Beta-1 From Human Cancellous And Cortical Bone Matrix, Transactions of

the 50th Annual Meeting, Orthopaedic Research Society, March 7-10, 2004, San Francisco, California, p. 73.

41. **Yeni, Y. N.**, Christopherson, G. T., Dong, X. N and Fyhrie, D. P., The Effect Of Scanning And Reconstruction Voxelsize Of Microtomography Images And End Boundary Conditions On The Finite Element-Calculated Apparent Stiffness And Trabecular Stress Distributions In Human Cancellous Bone, Transactions of the 50th Annual Meeting, Orthopaedic Research Society, March 7-10, 2004, San Francisco, California, p. 98.
42. Dong, X. N., **Yeni, Y. N.**, Les, C. M., Turner, A. S. and Fyhrie, D. P., Are Sacrificial Bonds Divalent Calcium Cross-Links Between Collagen Molecules?, Transactions of the 50th Annual Meeting, Orthopaedic Research Society, March 7-10, 2004, San Francisco, California, p. 386.
43. Dong, X. N., **Yeni, Y. N.**, Zhang, B., Gibson, G. J. and Fyhrie, D. P., TGF β 1 And TGF β 2 Concentration In Tibial Cancellous Bone Matrix Correlate With Tissue Density, Strength And Modulus And Are Predicted By Mechanical Strain, Transactions of the 50th Annual Meeting, Orthopaedic Research Society, March 7-10, 2004, San Francisco, California, p. 499.
44. Fyhrie, D. P., **Yeni, Y. N.**, Bay, B. K., Dong, X. N. and Zael, R., Comparison Of 3D Experimental And Finite Element Estimation Of Cancellous Bone Deformation And Strain, Transactions of the 50th Annual Meeting, Orthopaedic Research Society, March 7-10, 2004, San Francisco, California, p. 501.
45. Zael, R., **Yeni, Y. N.**, Christopherson, G. T., Cody, D. D and Fyhrie, D. P., Segmentation Algorithm For Accurate 3D Representation Of Microcomputed Tomographic Images Of Human Vertebral Bodies, Transactions of the 50th Annual Meeting, Orthopaedic Research Society, March 7-10, 2004, San Francisco, California, p. 1018.
46. **Yeni, Y. N.**, Dong, X. N., Cao, T., Baker, K. C., Schaffer, R. R. and Fyhrie, D. P., Evaluation Of Filler Materials Used For Uniform Load Distribution At Boundaries During Structural Biomechanical Testing Of Whole Vertebrae, Transactions of the 50th Annual Meeting, Orthopaedic Research Society, March 7-10, 2004, San Francisco, California, p. 1116.
47. Papaioannou, G., Anderst, W., Fyhrie, D., **Yeni, Y.** and Tashman, S., Menisci Displacement Under Joint Load: A Subject Specific Finite Element Study With *In-Situ* Validation, Transactions of the 50th Annual Meeting, Orthopaedic Research Society, March 7-10, 2004, San Francisco, California, p. 1238.
48. Kim, D. G., Christopherson, G. T., Dong, X. N., Fyhrie, D. P. and **Yeni, Y. N.**, "The Effect Of Micro-CT Voxelsizes On The Accuracy Of Stereological Measurements In Cancellous Bone", Proceedings of the Annual Fall Meeting of the Biomedical Engineering Society, October 13-16, 2004, Philadelphia, PA, p. 937.
49. Kim, D. G., Fyhrie, D. P. and **Yeni, Y. N.**, "The effect of tissue density distribution on human vertebral cancellous bone strength", Proceedings of the Annual Fall Meeting of the Biomedical Engineering Society, October 13-16, 2004, Philadelphia, PA, p. 1035.
50. **Yeni, Y. N.** and Mahfouz, F. M., "Monotonic And Dynamic Structural Testing Of Zebrafish (*Danio Rerio*) Vertebrae", Transactions of the 51st Annual Meeting, Orthopaedic Research Society, February 20 - 23, 2005, Washington, DC, p. 27.
51. Fyhrie, D. P., Zael, R. R., Ciarelli, T. E. and **Yeni, Y. N.**, "Bone Microcrack Number And Orientation Are Strongly Affected By Heterogeneity Of Tissue Mineralization In Models Of Fracture Toughness Specimens", Transactions of the 51st Annual Meeting, Orthopaedic Research Society, February 20 - 23, 2005, Washington, DC, p. 123.
52. Dong, X. N., **Yeni, Y. N.**, Zhang, B., Les, C. M., Gibson, G. J. and Fyhrie, D. P., "The Matrix Concentration Of IGF-I In Cancellous Bone Of Proximal Human Tibiae Is Predicted By Trabecular Level Stress And Architectural Parameters", Transactions of the 51st Annual Meeting, Orthopaedic Research Society, February 20 - 23, 2005, Washington, DC, p. 190.

53. **Yeni, Y. N.** and Norman, T. L., “Stress-State Adaptation Of Human Femur Increases Its Effective Fracture Toughness”, Transactions of the 51st Annual Meeting, Orthopaedic Research Society, February 20 - 23, 2005, Washington, DC, p. 217.
54. **Yeni, Y. N.**, Dong, X. N., Hunt, C. A., Kim, D-G. Pechey, C., Les, C. M., Turner, A. S. and Fyhrie, D. P., “Nondestructive Viscoelastic Measurements Predict Cortical Bone Strength”, Transactions of the 51st Annual Meeting, Orthopaedic Research Society, February 20 - 23, 2005, Washington, DC, p. 336.
55. **Yeni, Y. N.** and Norman, T. L., “Fracture Toughness Of Human Femoral Neck Cortical Bone Is Reduced With Age And With Increased Osteon Eccentricity”, Transactions of the 51st Annual Meeting, Orthopaedic Research Society, February 20 - 23, 2005, Washington, DC, p. 660.
56. **Yeni, Y. N.**, Shaffer, R. R., Baker, K. C., Dong, X. N., Les, C. M., Turner, A. S. and Fyhrie, D. P., “The Effect Of Yield Damage On The Viscoelastic Properties Of Cortical Bone Tissue As Measured By Dynamic Mechanical Analysis”, 51st Annual Meeting, Orthopaedic Research Society, February 20 - 23, 2005, Washington, DC, p. 667.
57. Dong, X. N., **Yeni, Y. N.**, Zhang, B., Les, C. M., Gibson, G. J. and Fyhrie, D. P., “Associations Between IGF-I Matrix Concentration And Biomechanical Properties Of Cancellous Bone From Proximal Human Tibiae”, Transactions of the 51st Annual Meeting, Orthopaedic Research Society, February 20 - 23, 2005, Washington, DC, p. 675.
58. Kim, D-G., Hunt, C. A., Zael, R., Fyhrie, D. P. and **Yeni, Y. N.**, “Prediction Of Fresh And Embalmed Human Cancellous Bone Strength From Micro-CT Based Finite Element Models Using Inhomogeneous Tissue Modulus”, Transactions of the 51st Annual Meeting, Orthopaedic Research Society, February 20 - 23, 2005, Washington, DC, p. 681.
59. **Yeni, Y. N.**, Kim, D-G. and Fyhrie, D. P., “Microcomputed Tomography-Based Large Scale Finite Element Modeling Of Human Cortical Bone Tissue”, Transactions of the 51st Annual Meeting, Orthopaedic Research Society, February 20 - 23, 2005, Washington, DC, p. 685.
60. Zael, R., Fyhrie, D. P. and **Yeni, Y. N.**, “Segmentation Algorithm With Improved Connectivity For Accurate 3D Representation Of Microcomputed Tomographic Images Of Human Vertebral Bodies”, Transactions of the 51st Annual Meeting, Orthopaedic Research Society, February 20 - 23, 2005, Washington, DC, p. 1260.
61. Kim, D-G., Hunt, C. A., Zael, R., Fyhrie, D. P. and **Yeni, Y. N.**, “Prediction Of Human Vertebral Body Strength Using Microcomputed Tomography-Based Finite Element Models From Cancellous Centrum With And Without The Cortical Shell”, Transactions of the 51st Annual Meeting, Orthopaedic Research Society, February 20 - 23, 2005, Washington, DC, p. 1268.
62. Kim, D-G., Hunt, C. A., Zael, R., Fyhrie, D. P. and **Yeni, Y. N.**, “The Effect Of Regional Variations Of The Trabecular Bone Properties On The Compressive Strength Of Human Vertebral Bodies”, Transactions of the 51st Annual Meeting, Orthopaedic Research Society, February 20 - 23, 2005, Washington, DC, p. 1271.
63. **Yeni, Y. N.** and Zael, R., “Microcomputed tomography-based finite element model of cancellous bone using rate-dependent moduli”, Proceedings of the Annual Fall Meeting of the Biomedical Engineering Society, September 28-October 1, 2005, Baltimore, MD, p. 951.
64. Dougherty, P., Kim, D-G., Meisterling, S. and **Yeni, Y. N.**, “Proximal Tibia Locking Plates: Bicortical versus Unicortical Screw Placement”, 21st Annual Meeting of the Orthopaedic Trauma Association, October 20-22, 2005, Ottawa, Ontario, Canada, poster #61.
65. **Yeni, Y. N.**, Grimm, M. J. and Fyhrie, D. P., “Viscoelastic energy dissipation at high frequencies increases in fatigue-damaged bone: implications for toughening”, Transactions of the 52nd Annual Meeting, Orthopaedic Research Society, March 19-22, 2006, Chicago, Illinois, p. 1761.

66. **Yeni, Y. N.**, Kim, D-G., Dong, X. N., Pechey, C., Les, C. M. and Fyhrie, D. P., “Do sacrificial bonds affect the viscoelastic and fracture properties of undemineralized human cortical bone tissue?”, Transactions of the 52nd Annual Meeting, Orthopaedic Research Society, March 19-22, 2006, Chicago, Illinois, p. 1762.
67. Pechey, C. L., Qiu, S., **Yeni, Y. N.** and Les, C. M., “Short-term bone ischemia/reperfusion alters rat tibial structural viscoelastic properties”, Transactions of the 52nd Annual Meeting, Orthopaedic Research Society, March 19-22, 2006, Chicago, Illinois, p. 1763.
68. **Yeni, Y. N.** and Zael, R., “Fracture resistance of bone is affected by rate-dependent microdamage processes in computational models”, Transactions of the 52nd Annual Meeting, Orthopaedic Research Society, March 19-22, 2006, Chicago, Illinois, p. 1764.
69. Kim, D-G. and **Yeni, Y. N.**, “Monotonic and viscoelastic properties of human vertebral shell tissue are associated with hard tissue physical properties”, Transactions of the 52nd Annual Meeting, Orthopaedic Research Society, March 19-22, 2006, Chicago, Illinois, p. 1765.
70. Kim, D-G., Turri, J., Zael, R., Johnson, E., Cody, D. D. and **Yeni, Y. N.**, “Accurate micro-CT-based FE-prediction of human vertebral cancellous bone stiffness and strength using segmentation methods without defatting or an external reference”, Transactions of the 52nd Annual Meeting, Orthopaedic Research Society, March 19-22, 2006, Chicago, Illinois, p. 1784.
71. Kim, D-G., Hunt, C. A., Zael, R., Fyhrie, D. P. and **Yeni, Y. N.**, “Specimen-specific tissue modulus improves the finite element prediction of modulus and strength for human vertebral cancellous bone”, Transactions of the 52nd Annual Meeting, Orthopaedic Research Society, March 19-22, 2006, Chicago, Illinois, p. 1785.
72. Dougherty, P., Kim, D-G., Meisterling, S. W. and **Yeni, Y. N.**, “Proximal Tibia Locking Plates: Bicortical versus Unicortical Screw Placement”, Annual Meeting of the American Academy of Orthopaedic Surgeons, March 22-26, 2006, Chicago, Illinois, poster COMSS7.
73. Dong, X. N., **Yeni, Y. N.** and Fyhrie, D. P., “Intra- and inter-individual variations of shear stress in human tibial cancellous bone”, The 43rd Annual Technical Meeting of the Society of Engineering Science, August 13-16, 2006, University Park, Pennsylvania.
74. **Yeni, Y. N.**, Zelman, E. A., Divine, G. W., Kim, D-G. and Fyhrie, D. P., “Trabecular shear stress amplification and variability in human vertebral bone”, Transactions of the 53rd Annual Meeting, Orthopaedic Research Society, February 11-14, 2007, San Diego, California, p. 287.
75. **Yeni, Y. N.**, Zelman, E. A. and Kim, D-G., “Does indentation measure elastic, viscoelastic and post-yield properties of the subchondral bone plate in human knee?”, Transactions of the 53rd Annual Meeting, Orthopaedic Research Society, February 11-14, 2007, San Diego, California, p. 1363.
76. Kim, D-G. and **Yeni, Y. N.**, “The role of physiological creep in fracture properties of human vertebral cancellous bone”, Transactions of the 53rd Annual Meeting, Orthopaedic Research Society, February 11-14, 2007, San Diego, California, p. 1373.
77. **Yeni, Y. N.**, Kim, D-G., Anderst, W. and Tashman, S., “Changes in the bony tissues of the knee related to alterations in joint kinematics”, Transactions of the 53rd Annual Meeting, Orthopaedic Research Society, February 11-14, 2007, San Diego, California, p. 1818.
78. **Yeni, Y. N.**, Basho, R., Wybo, C., Dougherty, P. J., Gritsanov, A. and Pitkin, M., “Double-Needle Ilizarov External Fixator vs Hoffman II”, Proceedings of the Fourth International Meeting of the US-Russian Program in Prosthetics and Rehabilitation, June 18, 2007, Stoughton, Massachusetts, pp. 4-6.
79. **Yeni, Y. N.** and Zael, R. R., “Micro-CT-based large scale finite element modeling of compressive and torsional properties of human cortical bone”, Proceedings of the ASME Summer Bioengineering Conference, June 20-24, 2007, Keystone, Colorado, Paper No. 176482.
80. **Yeni, Y. N.**, Kim, D-G., Zael, R. R., Johnson, E. M. and Cody, D. D., “Micro-CT-based large scale linear

finite element models predict the strength of human thoracic and lumbar vertebral bodies”, Proceedings of the ASME Summer Bioengineering Conference, June 20-24, 2007, Keystone, Colorado, Paper No. 176699.

81. **Yeni, Y.**, Basho, R., Wybo, C., Dougherty, P., Gritsanov, A., Shukeylo, Y., Popkov, V., Utechin, A. and Pitkin, M., “Comparative Study on a New Double-Needle Ilizarov External Fixator vs. Hoffmann II Apparatus”, Twelfth Russian National Congress “People & Health”, November 27-December 1, 2007, St Petersburg, Russia.
82. **Yeni, Y. N.**, Kim, D-G., Divine, G. W., Johnson, E. M. and Cody, D. D., “Variation of cancellous tissue microstructure and trabecular shear stresses with vertebral level in human spine: Is the tissue at T12-L1 unique?”, Transactions of the 54th Annual Meeting, Orthopaedic Research Society, March 2-5, 2008, San Francisco, California, p. 272.
83. Yerramshetty, J. S., Kim, D-G., Needleman, R., Leco, K., Wu, W. and **Yeni, Y. N.**, “Structural properties of cortical bone are affected in TIMP-2 and TIMP-3 null mice”, Transactions of the 54th Annual Meeting, Orthopaedic Research Society, March 2-5, 2008, San Francisco, California, p. 345.
84. Norman, T. L., Chen, X., Noble, G., Porter, D., Kish, V., Pechey, C., Les, C. M. and **Yeni, Y. N.**, “Fracture Toughness is More Sensitive to Bone Remodeling Parameters than Strength and Toughness”, Transactions of the 54th Annual Meeting, Orthopaedic Research Society, March 2-5, 2008, San Francisco, California, p. 925.
85. Yerramshetty, J. S., Kim, D-G. and **Yeni, Y. N.**, “Within-Vertebra Variability of Cancellous Microstructure is Strongly Correlated with Vertebral Strength”, Transactions of the 54th Annual Meeting, Orthopaedic Research Society, March 2-5, 2008, San Francisco, California, p. 936.
86. Norman, T. L., Carter, J. and **Yeni, Y. N.**, “Diffuse Damage Area Accumulation in Human Cortical Bone is Cortex Dependent”, Transactions of the 55th Annual Meeting, Orthopaedic Research Society, February 22-25, 2009, Las Vegas, Nevada, p. 674.
87. Kim, D-G. and **Yeni, Y. N.**, “Increasing Variability of Mineralization Reduces Strength of Cancellous Bone”, Transactions of the 55th Annual Meeting, Orthopaedic Research Society, February 22-25, 2009, Las Vegas, Nevada, p. 685.
88. **Yeni, Y. N.**, Zinno, M., Yerramshetty, J. and Fyhrie, D. P., “Within-bone Variability of Human Vertebral Trabecular Microstructure is Age, Gender and Vertebra-Dependent and Affects Stress Distribution Properties Independently from Average Bone Volume”, Transactions of the 55th Annual Meeting, Orthopaedic Research Society, February 22-25, 2009, Las Vegas, Nevada, p. 710.
89. **Yeni, Y. N.**, Zinno, M., Vashishth, D. and Fyhrie, D. P., “Trabecular Stress and Microstructural Variability are Associated with Osteocyte Density in Human Vertebral Cancellous Bone”, Transactions of the 55th Annual Meeting, Orthopaedic Research Society, February 22-25, 2009, Las Vegas, Nevada, p. 716.
90. **Yeni, Y. N.**, Yerramshetty, J., Kim, D-G., Johnson, E. and Cody, D. D., “The Increases in FE Stiffness and Bone Stress Variability Due to a Simulated Change from Compliant (Disc) to Stiff (Bone) Endplate Boundary Layer are Strongly Associated with Structural Measures of Vertebral Brittleness”, Transactions of the 55th Annual Meeting, Orthopaedic Research Society, February 22-25, 2009, Las Vegas, Nevada, p. 756.
91. Kim, D-G., Shertok, D. and **Yeni, Y. N.**, “Rate of Physiological Creep of Cancellous Bone can be Estimated by Variability of Mineralization”, Transactions of the 55th Annual Meeting, Orthopaedic Research Society, February 22-25, 2009, Las Vegas, Nevada, p. 1762.
92. Cheng, X, Haggins, D. G., **Yeni, Y. N.** and Akkus, O., “Raman-Based Identification of Crystals in Synovial Samples from Patients with Gouty Symptoms”, Transactions of the 55th Annual Meeting, Orthopaedic Research Society, February 22-25, 2009, Las Vegas, Nevada, p. 2119.
93. Yerramshetty, J. S., Kim, D-G. and **Yeni, Y. N.**, “Increased microstructural variability is associated with decreased structural strength but with increased measures of structural ductility in human vertebrae”,

Proceedings of the ASME Summer Bioengineering Conference, June 17-21, 2009, Lake Tahoe, California, SBC2009- 206824: p.1-2.

94. Nekkanty, S., Yerramshetty, J., Kim, D-G. and **Yeni, Y. N.**, "Endplate Topography is Associated with the Brittleness of Human Whole Vertebral Bodies", Transactions of the 56th Annual Meeting, Orthopaedic Research Society, March 6-9, 2010, New Orleans, Louisiana, p. 634.
95. Ciarelli, T. and **Yeni, Y. N.**, "Statistical Distribution Properties of Femoral Neck Cancellous Bone Microstructure are Different Between Females with a Hip Fracture and Non-fracture Controls with Equal Bone Mass", Transactions of the 56th Annual Meeting, Orthopaedic Research Society, March 6-9, 2010, New Orleans, Louisiana, p. 601.
96. Oravec, D. J., Zael, R. R. and **Yeni, Y. N.**, "The Effect of Endplates on Cancellous Bone Strain Distribution in Uniaxially Compressed Rat T5 Vertebrae as Assessed by Digital Volume Correlation", Transactions of the 57th Annual Meeting of the Orthopaedic Research Society, January 13-16, 2011, Long Beach, California, p. 668.
97. Nekkanty, S., Divine, G. W., Flynn, M. J. and **Yeni, Y. N.**, "Digital Tomosynthesis-Based Textural Measures Predict Vertebral Strength", Transactions of the 57th Annual Meeting of the Orthopaedic Research Society, January 13-16, 2011, Long Beach, California, p. 670.
98. Xia, Y., Oravec, D., Mittelstaedt, D., Badar, F., **Yeni, Y.** and Matyas, J., "Depth-dependent Ion Concentrations in Healthy and Lesioned Articular Cartilage by μ CT and μ MRI", Transactions of the 57th Annual Meeting of the Orthopaedic Research Society, January 13-16, 2011, Long Beach, California, p. 1609.
99. Huang, L., Shetty, T., Raza, S., Nekkanty, S. and **Yeni, Y. N.**, "Effect of Osteoid on Trabecular Surface Strains in Human Cancellous Bone as Estimated from Microcomputed Tomography-Based Large Scale Finite Element Analysis", 58th Annual Meeting, Orthopaedic Research Society, February 4-7, 2012, San Francisco, California, p. 367.
100. **Yeni, Y. N.**, Wu, B., Huang, L. and Oravec, D., "Mechanical Loading Causes Detectable Changes in Microstructural Heterogeneity of Cancellous Bone", 58th Annual Meeting, Orthopaedic Research Society, February 4-7, 2012, San Francisco, California, p. 1375.
101. **Yeni, Y. N.** and Oravec, D., "Is Microstructural Heterogeneity Accounted for by Plate/Rod-Likeness of Trabeculae in Vertebral Cancellous Bone?", 58th Annual Meeting, Orthopaedic Research Society, February 4-7, 2012, San Francisco, California, p. 1141.
102. Oravec, D. J., Zael, R. R. and **Yeni, Y. N.**, "The role of endplates in strain distributions and microstructural organization within the vertebral shell and cancellous centrum of a rat T5 vertebra during loading", 58th Annual Meeting, Orthopaedic Research Society, February 4-7, 2012, San Francisco, California, p. 1142.
103. Steel, E. M., Pechey, C. L., Ruehlman, D., MacLeay, J. M., Turner, A. S., Fyhrie, D. P., **Yeni Y.** and Les, C. M., "The Relationship Between Material Stiffness and Fracture Toughness in Ovine Compact Bone at Fast Fracture Exists for Sham but not OVX and is Rescued with Estrogen Replacement Therapy", 58th Annual Meeting, Orthopaedic Research Society, February 4-7, 2012, San Francisco, California, p. 540.
104. **Yeni, Y. N.**, Poisson, L. M. and Flynn, M. J., "Heterogeneity of bone mineral density and fatigue failure of human vertebrae", Proceedings of the ASME Summer Bioengineering Conference, June 20-23, 2012, Fajardo, Puerto Rico, SBC2012-80908: p. 1-2.
105. Kim, W., Oravec, D., Sander, E., Divine, G. W., Flynn, M. J. and **Yeni, Y. N.**, "Digital Tomosynthesis-Derived Microstructural Parameters Predict Cancellous Bone Stiffness in Human Vertebrae", 59th Annual Meeting, Orthopaedic Research Society, January 26-29, 2013, San Antonio, Texas, p.0701.
106. **Yeni, Y. N.**, Oravec, D., Nekkanty, S. and Les, C. M., "Ovariectomy Causes Anatomic Orientation-

Dependent Changes in the Heterogeneity of Cancellous Bone in Rat Vertebrae", 59th Annual Meeting, Orthopaedic Research Society, January 26-29, 2013, San Antonio, Texas, p.1472.

107. Kim, W., Oravec, D., Divine, G. W., Flynn, M. J. and **Yeni, Y. N.**, "Digital Tomosynthesis of Human Vertebral Bone: The Effect of Positioning and Scan Orientation on Prediction of Cancellous Bone Stiffness", 60th Annual Meeting, Orthopaedic Research Society, March 15-18, 2014, New Orleans, Louisiana, p. 0710.
108. Kim, W., Oravec, D., Maatman, T., Divine, G. W., Flynn, M. J. and **Yeni, Y. N.**, "Digital Tomosynthesis for Prediction of Human Whole Vertebral Stiffness", 60th Annual Meeting, Orthopaedic Research Society, March 15-18, 2014, New Orleans, Louisiana, p. 1522.
109. Singer, N., Li, B., **Yeni, Y.**, Barnboym, E., Lewis, S., Oravec, D., Haggins, D., and Akkus, O., "Raman Spectroscopy: Point of Service Diagnosis Is Sensitive and Specific-a Tool for Improving Accuracy and Reducing Future Hospital Admission", American College of Rheumatology Annual Meeting, Boston, Nov 14-19, 2014, paper no: L11.
110. Kim, W., Oravec, D., Nixon, M., Divine, G., Flynn, M. J. and **Yeni, Y. N.**, "Prediction of Vertebral Wedge Strength Using Density, Morphometric and Microstructural Properties Derived from DXA, HRCT and DTS", 61st Annual Meeting, Orthopaedic Research Society, March 28-31, 2015, Las Vegas, Nevada, paper no: 0242.
111. Kim, W., Oravec, D., Xiao, A., Yang, E., Divine, G., Flynn, M. J. and **Yeni, Y. N.**, "DTS Derived Fractal, LFD and MIL Parameters Contribute to Prediction of Whole Vertebral Strength and Energy to Fracture Independent From Bone Mass", 61st Annual Meeting, Orthopaedic Research Society, March 28-31, 2015, Las Vegas, Nevada, paper no: 1466.
112. Oravec, D., Quazi, A., Xiao, A., Yang, E., Flynn, M. J. and **Yeni, Y. N.**, "Digital Tomosynthesis and High Resolution Computed Tomography as Clinical Tools for Vertebral Endplate Topography Measurements: Comparison with Microcomputed Tomography", 61st Annual Meeting, Orthopaedic Research Society, March 28-31, 2015, Las Vegas, Nevada, paper no: 0116.
113. **Yeni, Y. N.**, Bokhari, O., Oravec, D., Kim, W., Flynn, M. J., Lumley, C. and Nelson, F., "Quantitative Analysis of Bone Texture Using Digital Tomosynthesis in Spontaneous Osteonecrosis of the Knee (SONK)", 61st Annual Meeting, Orthopaedic Research Society, March 28-31, 2015, Las Vegas, Nevada, paper no: 1099.
114. Akkus, O., Li, B., Singer, N., Haggins, D. G. and **Yeni, Y. N.**, "A Portable Clinical Grade Raman Device for Point-of-Care Diagnosis of Gout and Pseudogout", The Great Scientific Exchange conference (SCIX), September 27-October 12, 2015, Providence, Rhode Island, p. 673.
115. **Yeni, Y. N.**, Baumer, T., Oravec, D., Basheer, A., Bey, M. J., Bartol, S. W. and Chang, V., "Dynamic Foraminal Dimensions During Neck Extension and Rotation in Fusion and Artificial Disc Replacement", 62nd Annual Meeting, Orthopaedic Research Society, March 5-8, 2016, Orlando, Florida, poster no: 0262. ***Selected for a podium teaser.***
116. Oravec, D., Yaldo, O., Flynn, M. J. and **Yeni, Y. N.**, "Digital tomosynthesis and fractal analysis predict prevalent vertebral fractures: a preliminary in vivo study", 62nd Annual Meeting, Orthopaedic Research Society, March 5-8, 2016, Orlando, Florida, poster no: 0779.
117. **Yeni, Y. N.**, Baumer, T., Oravec, D., Basheer, A., Bey, M. J., Chang, V. and Bartol, S. W., "In Vivo Dynamic Changes in the Foraminal Dimensions During Neck Extension and Rotation", 62nd Annual Meeting, Orthopaedic Research Society, March 5-8, 2016, Orlando, Florida, poster no: 1762. ***Nominee for ORS Spine Section Poster Awards.***
118. Oravec, D., Zael, R., Flynn, M. J. and **Yeni, Y. N.**, "A Clinically Viable Noninvasive Method for Direct Measurement of Mechanical Strains in Vertebral Bone", 62nd Annual Meeting, Orthopaedic Research Society, March 5-8, 2016, Orlando, Florida, poster no: 2184. ***Late breaking abstract.***

119. Basheer, A., **Yeni, Y. N.**, Baumer, T., Oravec, D., Bey, M. J., Bartol, S. W. and Chang, V., “Dynamic Foraminal Dimensions During Neck Extension and Rotation in Fusion and Artificial Disc Replacement”, Joint Section on Disorders of the Spine and Peripheral Nerves Spine Summit, March 16-19, 2016, Orlando, Florida. Abstract No. 308
120. Chang, V., Bartol, S. W., Basheer, A., Baumer, T., Oravec, D., Bey, M. J., McDonald, C. and **Yeni, Y. N.**, “Dynamic Foraminal Dimensions During Neck Extension and Rotation in Fusion and Artificial Disc Replacement”, 31st Annual Meeting, North American Spine Society, October 26-29, 2016, Boston, Massachusetts, Abstract #100.
121. Oravec, D. J., Kim, W., Flynn, M. J. and **Yeni, Y. N.**, “Whole Human Vertebral Body Creep is Associated with DTS-Derived Texture Parameters”, 63rd Annual Meeting, Orthopaedic Research Society, March 19-22, 2017, San Diego, California, poster no: 1284.
122. **Yeni, Y. N.**, Dix, M. R., Xiao, A., Oravec, D. J., Flynn, M. J., “Vertebral Endplate and Shell Thickness Measurement Using Digital Tomosynthesis”, 63rd Annual Meeting, Orthopaedic Research Society, March 19-22, 2017, San Diego, California, poster no: 1287.
123. **Yeni, Y. N.**, Lindquist, M., Oravec, D. J., Baumer, T., Bey, M. J., Bartol, S. and Chang, V., “Cervical Nerve Root to Foraminal Size Ratio Correlates with Post-Surgical Patient-Reported Outcomes”, 63rd Annual Meeting, Orthopaedic Research Society, March 19-22, 2017, San Diego, California, poster no: 1288.
124. Oravec, D. J., Flynn, M. J. and **Yeni, Y. N.**, “The Relationship of Whole Human Vertebral Body Creep to Geometric, Microstructural and Material Properties”, 63rd Annual Meeting, Orthopaedic Research Society, March 19-22, 2017, San Diego, California, poster no: 1849.
125. **Yeni, Y. N.**, Kim, W., Oravec, D., Banglmaier, R., Zhang, L. and Gibson, G., “Effect of ALT Crosslink Breaker on Normal and Glycated Human Femoral Cortical Bone Fracture Mechanics”, 64th Annual Meeting, Orthopaedic Research Society, March 10-13, 2018, New Orleans, Louisiana, poster no: 0677.
126. **Yeni, Y. N.**, Baumer, T., Oravec, D., Basheer, A., Bey, M. J., Bartol, S. W. and Chang, V., “Does Neural Foraminal Motion Predict Long-term Patient Reported and Radiographic Outcomes After Single-Level Surgical Treatment of Cervical Radiculopathy?”, 64th Annual Meeting, Orthopaedic Research Society, March 10-13, 2018, New Orleans, Louisiana, poster no: 0795.
127. Oravec, D., Dong, X. N. and **Yeni, Y. N.**, “Prediction of Vertebral Uniform Compression and Wedge Strength Using DXA-Derived Stochastic Predictors”, 64th Annual Meeting, Orthopaedic Research Society, March 10-13, 2018, New Orleans, Louisiana, poster no: 0797.
128. Oravec, D., Zael, R., Rao, S., Flynn, M. J. and **Yeni, Y. N.**, “Vertebral displacement measurement using tomosynthesis based digital volume correlation in vitro and in vivo”, 64th Annual Meeting, Orthopaedic Research Society, March 10-13, 2018, New Orleans, Louisiana, poster no: 2271. *Late breaking abstract.*
129. Oravec, D., Zael, R., Flynn, M. J. and **Yeni, Y. N.**, “Vertebral Stiffness Measured via Tomosynthesis Based Digital Volume Correlation is Strongly Correlated with Reference Values from Micro-CT-Based DVC”, 65th Annual Meeting, Orthopaedic Research Society, February 2-5, 2019, Austin, Texas, poster no: 0801.
130. **Yeni, Y. N.**, Azad, S., Baumer, T., Oravec, D., Basheer, A., Bey, M. J., Bartol, S. W. and Chang, V., “Dynamic Foraminal Dimensions During Neck Motion 6.5 Years After Fusion and Artificial Disc Replacement”, 65th Annual Meeting, Orthopaedic Research Society, February 2-5, 2019, Austin, Texas, poster no: 1668.
131. Oravec, D., Soni, P., Zael, R., Rao, S., Flynn, M. J. and **Yeni, Y. N.**, “Clinical measurement of vertebral stiffness and displacements using tomosynthesis based digital volume correlation”, 65th Annual Meeting, Orthopaedic Research Society, February 2-5, 2019, Austin, Texas, poster no: 2252. *Late breaking abstract.*
132. Oravec, D., Chang, V. and **Yeni, Y. N.**, “Digital Tomosynthesis for Assessment of Bony Ingrowth in

Porous Titanium Implants: A Proof of Concept Study”, 66th Annual Meeting, Orthopaedic Research Society, February 8-11, 2020, Phoenix, Arizona, poster no: 924.

133. Oravec, D., Zael, R., Chang, V. and **Yeni, Y. N.**, “Finite Element Analysis of Human Vertebrae in Vivo Using Subject-Specific Boundary Conditions”, 66th Annual Meeting, Orthopaedic Research Society, February 8-11, 2020, Phoenix, Arizona, poster no: 1802.
134. Oravec, D., Zael, R., Flynn, M. J. and **Yeni, Y. N.**, “Strains Measured using Tomosynthesis-Based Digital Volumes Correlation are Detectable Under Load and Reflect Age-Related Changes in Human Vertebral Bone”, 66th Annual Meeting, Orthopaedic Research Society, February 8-11, 2020, Phoenix, Arizona, paper no: 286.
135. Drost, J. P., Oravec, D., Soni, P., Zael, R., Flynn, M. J. and **Yeni, Y.**, “Tomosynthesis-Based Digital Volume Correlation Properties Predict Vertebral Strength Independently from Bone Mineral Density”, 66th Annual Meeting, Orthopaedic Research Society, February 8-11, 2020, Phoenix, Arizona, poster no: 2497. *Late breaking abstract.*
136. **Yeni, Y. N.**, “Tomosynthesis imaging in bone quality assessment”, Congress book of the 28th Annual Meeting of the European Orthopaedic Research Society (EORS), September 1-18, 2020, Izmir, Turkey. p:38.
137. Oravec, D., Zael, R., Flynn, M. J. and **Yeni, Y. N.**, “Strains Measured from Digital Tomosynthesis Based Digital Volume Correlation Correlate with Those from Microcomputed Tomography in Human Vertebrae”, 67th Annual Meeting, Orthopaedic Research Society, February 12-16, 2021, Virtual Meeting, podium no: 0091.
138. **Yeni, Y. N.**, Oravec, D., Drost, J., Bevins, N., Morrison, C. and Flynn, M. J. “Bone Health Assessment via Digital Wrist Tomosynthesis in the Mammography Setting”, 67th Annual Meeting, Orthopaedic Research Society, February 12-16, 2021, Virtual Meeting, podium no: 0141.
139. Drost, J. P., Oravec, D., Zael, R., Flynn, M. J. and **Yeni, Y. N.**, “Digital Tomosynthesis Derived Texture and Mechanical Measures Differentiate Between Fractured and Intact Vertebrae”, 67th Annual Meeting, Orthopaedic Research Society, February 12-16, 2021, Virtual Meeting, poster no: 1094.
140. Rao, S., Warner, E., Oravec, D., Drost, J. and **Yeni, Y.**, “Comparison of Trabecular Bone Score (TBS) and Bone Mineral density (BMD) in patients with Type 2 Diabetes Mellitus (T2DM) and Primary Hyperparathyroidism (PHPT)”, Annual Meeting of the American Society of Bone and Mineral Research (ASBMR), October 1-4, 2021, San Diego, California, poster no: VPP-636.

SERVICE AND ACTIVITIES

- **Editorial:**

2007- 2013: Associate Editor, ASME Journal of Biomechanical Engineering.

2012- 2013: Editorial Board, ISRN Biomedical Engineering.

2013: Editorial Board, ISRN Orthopedics.

2013- present Editorial Board, BONE.

2020 - present Advisory Board, Joint Diseases and Related Surgery

- **Study Sections/Grant Review Panels:**

2004 Reviewer for Research Project Grants, Health Research Board of Ireland.

2005 Reviewer for Military Operational Medicine Research Program/Special Programs, US Army Medical Research and Materiel Command (USAMRMC).

2005 Member of Special Emphasis Panel/Scientific Review Group 2006/01 ZAR1 YZW-H (O2) (1); Core Center for Musculoskeletal Disorders, National Institutes of Health/NIAMS.

2006 Reviewer for Equipment Grants, Swiss National Science Foundation.

2006 Member of Special Emphasis Panel/Scientific Review Group 2006/10 ZAR1 EHB-M (O1) (1); R03

- Applications, National Institutes of Health/NIAMS.
- 2007 Member of Special Emphasis Panel/Scientific Review Group 2007/05 ZAR1 EHB-H (O1) (1); R03 Applications, National Institutes of Health/NIAMS.
- 2008 Member of Special Emphasis Panel/Scientific Review Group 2008/05 ZAR1 EHB-H (M1) 1; R03 Applications, National Institutes of Health/NIAMS.
- 2008 Reviewer for Military Operational Medicine Research Program/Special Programs, US Army Medical Research and Materiel Command (USAMRMC).
- 2008 Member of Special Emphasis Panel/Scientific Review Group 2008/10 ZAR1 EHB-H (M1) 1; R03 Applications, National Institutes of Health/NIAMS.
- 2008 Member of Special Emphasis Panel/Scientific Review Group 2009/01 ZAR1 EHB-D (M1) 1; R03 Applications, National Institutes of Health/NIAMS.
- 2009 Reviewer for Research Growth Initiative (RGI) Grant Applications, University of Wisconsin-Milwaukee Graduate School.
- 2009 Reviewer for Summer Research Fellowships and Research Support Grants, Villanova University.
- 2010 Member of Special Emphasis Panel/Scientific Review Group 2011/01 ZAR1 EHB (M1) 2; Small Grants Research Review (R03 Applications), National Institutes of Health/NIAMS.
- 2011 Member of Special Emphasis Panel/Scientific Review Group 2011/05 ZAR1 EHB (M1) 1 - Small Grants Research Review (R03 Applications), National Institutes of Health/NIAMS.
- 2011 Panelist, Review Panel for “Tissues and Modeling”; Biomechanics and Mechanobiology (BMMB) Program, National Science Foundation (NSF).
- 2011 Member of Special Emphasis Panel/Scientific Review Group 2012/01 ZAR1 EHB (M1) 1 - Small Grants Research Review (R03 Applications), National Institutes of Health/NIAMS.
- 2012 Member of Special Emphasis Panel/Scientific Review Group 2012/05 ZAR1 EHB (M1) 1 - Small Grants Research Review (R03 Applications), National Institutes of Health/NIAMS.
- 2012 Reviewer for Military Operational Medicine Research Program/Special Programs, US Army Medical Research and Materiel Command (USAMRMC).
- 2012 Member of Special Emphasis Panel/Scientific Review Group 2013/01 ZAR1 EHB (M1) - Small Grants Research Review (R03 Applications), National Institutes of Health/NIAMS.
- 2012 Member of Special Emphasis Panel/Scientific Review Group 2013/01 ZRG1 MOSS-F (02) S, SBSR/SBDD Conflicts, National Institutes of Health/NIAMS.
- 2013 Member of Special Emphasis Panel/Scientific Review Group 2013/05 ZAR1 EHB (M1) - Small Grants Research Review (R03 Applications), National Institutes of Health/NIAMS.
- 2013 Member of Special Emphasis Panel/Scientific Review Group 2013/10 ZAR1 KM (M1) - Small Grants Research Review (R03 Applications), National Institutes of Health/NIAMS.
- 2013 Member of Special Emphasis Panel/Scientific Review Group 2014/01 ZAR1 CNR (M1) - Small Grants Research Review (R03 Applications), National Institutes of Health/NIAMS.
- 2014 Member of Special Emphasis Panel/Scientific Review Group 2014/05 ZAR1 CNR (M1) - Small Grants Research Review (R03 Applications), National Institutes of Health/NIAMS.
- 2014 Member of Special Emphasis Panel/Scientific Review Group 2014/10 ZAR1 XZ (M1) - Small Grants Research Review (R03 Applications), National Institutes of Health/NIAMS.
- 2014 Member of Segmental Bone Defect (SBD) Review Panel, Discovery Awards, Peer Reviewed Medical Research Program (PRMRP), Department of Defense Congressionally Directed Medical Research Programs (CDMRP).
- 2014 Member of Special Emphasis Panel/Scientific Review Group 2015/01 ZAR1 XZ (M1) - Small Grants Research Review (R03 Applications), National Institutes of Health/NIAMS.
- 2015 Panelist, Review Panel for “Cell System and Organ Development”; Biomechanics and Mechanobiology (BMMB) Program, National Science Foundation (NSF).
- 2015 Member of Special Emphasis Panel/Scientific Review Group 2015/05 ZAR1 XZ (M1) - Small Grants Research Review (R03 Applications), National Institutes of Health/NIAMS.
- 2016 Ad-hoc Reviewer, Special Emphasis Panel/Scientific Review Group 2016/10 ZRG1 DTCS-A (81) S - Clinical and Translational Imaging Applications, National Institutes of Health.

- 2017 Stage 1 Reviewer, Special Emphasis Panel/Scientific Review Group ZRG1 DTCS-A (81) S - Clinical and Translational Imaging Applications, National Institutes of Health.
- 2017 Stage 1 and Panel Reviewer, Special Emphasis Panel/Scientific Review Group ZRG1 DTCS-Z (81) S - Clinical and Translational Imaging Applications, National Institutes of Health.
- 2018 Member of Special Emphasis Panel/Scientific Review Group, 2018/05 ZRG1 SBIB-Z (03) Member Conflict: Medical Imaging Investigations, National Institutes of Health.
- 2020 Ad Hoc Reviewer, Disability and Rehabilitation (DARE) Program, National Science Foundation (NSF).
- 2021 Temporary Member of Neurological, Aging and Musculoskeletal Epidemiology (NAME) study section, National Institutes of Health.
- 2021 Temporary Member of Musculoskeletal and Rehabilitation Sciences (MRS) study section, National Institutes of Health.
- 2022 Panelist/Reviewer, Biomechanics and Mechanobiology (BMMB) Program, National Science Foundation (NSF).
- 2022 Temporary Member of Musculoskeletal and Rehabilitation Sciences (MRS) study section, National Institutes of Health.

- **Peer reviewer for journals:**

- 1999- Annals of Biomedical Engineering, Journal of Biomechanics
- 2000- Bone, Journal of Orthopaedic Research
- 2001- Experimental Techniques, Journal of Biomechanical Engineering
- 2003- Biomechanics and Modeling in Mechanobiology, Connective Tissue Research
- 2004- Biomaterials, Clinical Orthopaedics and Related Research, Journal of Biomedical Materials Research: Part B - Applied Biomaterials, Medical & Biological Engineering & Computing
- 2005- Clinical Anatomy, Medical Engineering and Physics
- 2006- BioMedical Engineering OnLine, Journal of Mechanics in Medicine and Biology, Acta Biomaterialia
- 2007- Journal of Biomedical Materials Research: Part A
- 2008- Clinical Biomechanics, Journal of Bone and Joint Surgery
- 2010- Journal of Rehabilitation Research and Development, Journal of the Mechanical Behavior of Biomedical Materials
- 2012- The Aging Male
- 2013- ISRN Biomedical Engineering, ISRN Orthopedics
- 2014- Journal of Neurorestoratology
- 2015- Journal of Bone and Mineral Research, PLOS One
- 2017 - Advances in Medical Sciences, Osteoporosis International
- 2018 - Journal of Spine Surgery, Proc iMechE Part H: Journal of Engineering in Medicine
- 2019 - Canadian Association of Radiologists Journal, Journal of International Medical Research
- 2020 - Medicine (Wolter Kluwers)
- 2021 - Asian Pacific Journal of Tropical Medicine, BMC Musculoskeletal Disorders

- **Conferences:**

- Judge, Student Paper Competition, Annual Research Day, Wayne State School of Medicine, 2004.
- Moderator, Short Talk Session: Bone Adaptation and Mechanics, 52nd Annual Meeting, Orthopaedic Research Society, March 19-22, 2006, Chicago, Illinois.
- Co-Chair, Session: Bone Mechanics, ASME Summer Bioengineering Conference, June 17-21, 2009, Lake Tahoe, California.
- Judge, 8th Annual Research Symposium of Henry Ford Health System, May 12-13, 2011, Detroit, Michigan.
- Abstract Reviewer, Topic: Bone, 58th Annual Meeting, Orthopaedic Research Society, February 4-7, 2012, San Francisco, California.

Judge, 9th Annual Research Symposium of Henry Ford Health System, May 10-11, 2012, Detroit, Michigan.
Reviewer, Proceedings of the ASME 2013, ASME International Mechanical Engineering Congress and Exposition (IMECE), November 15-21, 2012 San Diego, LA.

Abstract Reviewer, Topic: Spine, 61st Annual Meeting, Orthopaedic Research Society, March 28-31, 2015, Las Vegas, Nevada.

Abstract Reviewer, Topics: Bone, Spine and Diagnostic Imaging, 62nd Annual Meeting, Orthopaedic Research Society, March 5-8, 2016, Orlando, Florida.

Abstract Reviewer, Topic: Diagnostic Imaging, 63rd Annual Meeting, Orthopaedic Research Society, March 19-22, 2017, San Diego, California.

Abstract Reviewer, Topic: Diagnostic Imaging, 64th Annual Meeting, Orthopaedic Research Society, March 10-13, 2018, New Orleans, Louisiana.

Abstract Reviewer, Topic: Bone, 65th Annual Meeting, Orthopaedic Research Society, February 2-5, 2019, Austin, Texas.

Abstract Reviewer, Topic: Bone, 66th Annual Meeting, Orthopaedic Research Society, February 8-11, 2020, Phoenix, Arizona.

Abstract Reviewer, 28th Annual Meeting of the European Orthopaedic Research Society (EORS), September 1-18, 2020, Izmir, Turkey.

Abstract Reviewer, Topic: Bone, 67th Annual Meeting, Orthopaedic Research Society, February 12-16, 2021, Virtual.

Abstract Reviewer, Topic: Diagnostic Imaging, 68th Annual Meeting, Orthopaedic Research Society, February 4-8, 2022, Tampa, Florida.

Abstract Reviewer, North American Congress on Biomechanics (NACOB), August 21-25, 2022, Ottawa, Canada.

- **Other Societal Activities:**

Treasurer and founding member, Biomedical Engineering Society, West Virginia University Student Chapter, January 1995-February 1996; March 1997-January 1998.

Founding member and member of student board of directors, Science-Fiction and Fantasy Society, Middle East Technical University, Turkey (1992-1994).

- **Membership to Professional Organizations:**

ASB (American Society of Biomechanics)

ASBMR (American Society for Bone and Mineral Research)

ASME (American Society of Mechanical Engineers)

BMES (Biomedical Engineering Society)

ORS (Orthopaedic Research Society)

SEM (Society of Experimental Mechanics)

TEACHING / MENTORSHIP

Teaching Assistant, Middle East Technical University: Experimental Vibrational and Ultrasound Analysis for graduate students, Statics, Strength of Materials and Engineering Mathematics for sophomore level students (1993-1994).

Biomechanics/Biomaterials Basic Science Lecture Series, Henry Ford Hospital, Department of Orthopaedics, for Orthopaedics Residents (2005 – 2011).

Instructor (team-teach), Wayne State University, Biomedical Engineering: BME5210 - Musculoskeletal

Biomechanics, (Winter 2006).

Junior Scientists

1. Do-Gyoon Kim, PhD, Bone and Joint Center, HFHS, 2005 – 2007
Henry Ford Health System Mentored Scientist
Primary Mentor
2. Victor Chang, MD, Neurosurgery, HFHS, 2014 - 2018
Henry Ford Health System Mentored Physician Scientist
Primary Mentor
3. Joe Gardinier, PhD, Bone and Joint Center, HFHS, 2015 - present
Assistant Scientist
Mentorship Committee
4. Rebekah L. Lawrence, PhD, Bone and Joint Center, HFHS, March 2019 – present
Post-doctoral fellow
Co-mentor on K99 development (Primary mentor: MJ Bey)
5. Shobana Atimulam, MD, Endocrinology, HFHS, May 2020 – present
Henry Ford Health System Physician
Co-mentor on HFHS Mentored Scientist and ASBMR grant development (Primary mentor: S Rao)

Residents (served as research advisor / co-advisor / collaborator):

6. Joseph Sizensky, MD, Henry Ford Hospital: Mechanical properties of Kevlar fiber-reinforced bone cement, 2000. (*Awarded best resident research of the class.*)
7. William Sterba, MD, Henry Ford Hospital: Biomechanical analysis of differing pedicle screw insertion angles, 2005.
8. Steven Meisterling, MD, Henry Ford Hospital: Proximal Tibia Locking Plates: Bicortical versus Unicortical Screw Placement, 2004-2007
9. Rahul Basho, MD, Henry Ford Hospital: New Ilizarov Technique for Pediatric Critical Care, 2007-2008
10. Justin Hollander, DO, Garden City Hospital: Variation of within-vertebra variability of cancellous tissue architecture with vertebra level in human spine, Oct-Dec, 2007.
11. Shaunak S. Desai, MD, Henry Ford Hospital: Screw Configuration in Polyaxial Locking Plates to Treat Unstable Proximal Tibia Fractures: A Biomechanical Study, 2007-2008. (*Awarded best resident research of the class.*)
12. Michael Bryant, DO, Garden City Hospital: Variation of cancellous bone mechanical anisotropy with vertebra level in human spine, Jan-Mar 2008.
13. Matthew Zinno, DO, Garden City Hospital: The relationship of the statistical distribution of trabecular structural properties with age, gender, spine level and shear stress distribution properties in human vertebral cancellous bone, Apr-Jun 2008.
14. Joseph Farber, MD, Henry Ford Hospital: Biomechanical comparison of compression hip screw (CHS), standard dynamic hip screw (DHS) and DHS with derotational screw, 2009 – 2012.
15. Srinivasu Kusuma, MD, Henry Ford Hospital: Biomechanical effects of harvesting bone graft cores from the lumbar vertebral body, 2009 – 2012.
16. Kirk Cleland, MD, Henry Ford Hospital: Biomechanical comparison of dynamic hip screws (DHS), with derotational screw, and intermedullary hip screw (IMHS) in a basicervical femur fracture model, 2010 – 2012.
17. Nicholas B. Frisch, MD, Henry Ford Hospital: Cerclage Fixation for Cementless Total Hip Arthroplasty Complicated by Intraoperative Vancouver B1 Periprosthetic Fractures: A Biomechanical Analysis, 2013 – 2014.
18. M. Ayodele Buraimoh, MD, Henry Ford Hospital: Biomechanical Comparison of Lesser Tuberosity Osteotomy and a New Subscapularis Peel Technique for Repair of Subscapularis, 2014 – 2015.
19. Azam Basheer, MD, Henry Ford Hospital: Three dimensional characterization of dynamic cervical foraminal geometry during neck motion in-vivo, 2014 – 2017.

20. Lindsay M. Maier, MD, Henry Ford Hospital: Assessing load to failure in cephalomedullary femoral nails with lag screw engaging the lateral cortex of the femoral wall or buried beneath it, June 2020 – *present*.
21. Elizabeth A. Klag, MD, Henry Ford Hospital: What is the risk of intraoperative fracture depending on degree of femoral stem anteversion?, February 2021 – *present*.

Postdoctoral Fellows (trained in my laboratory):

22. Do-Gyoon Kim, PhD: Rensselaer Polytechnic Institute
 - 22.1. Post Doctoral Fellow, 2003 – 2005.
 - 22.2. Research Associate, 2005 – 2007.
23. Janardhan Yerramshetty, PhD: University of Toledo, Post-doc fellow, 2007 – 2009.
24. Srikant Nekkanty, PhD: Ohio State University, Post-doc fellow, 2009 – 2011.
25. Woong Kim, PhD: University of Auckland, New Zealand, Post-doc fellow, 2012 – 2014.
26. Kaan Kanad, MD: Suleyman Demirel University, Turkey, Post-doc volunteer, January 2018 – August 2018.
27. Joshua Drost, PhD: Michigan State University, Post-doc fellow, November 2019 – *present*.
28. Ram Naresh Yadav, PhD: Indian Institute of Technology, Post-doc fellow, October 2021 – *present*.

Graduate-Level Students (trained in my laboratory):

29. Nishant Trivedi, BSc: Wayne State University, Biomed Eng., MSc student, January-April, 2005.
30. Eric Zelman, BSc: Un. of Michigan, Dearborn, Mechanical Engr., Res. Assist, 2005 – 2006.
31. Daniel Oravec, MSc: Tampere University of Technology, Finland, Biomedical Engineering, 2009 – 2010
32. Elisabeth Michels, BSc: Wayne State University, Biomedical Engineering, 2010-2012.
33. Ryan Bylsma, Wayne State University, School of Medicine, October 2011 – January 2012.
34. Mary Nixon, Wayne State University, School of Medicine, May 2012 – July 2012.
35. Justin Schupbach, Wayne State University, School of Medicine, June 2012 – July 2012.
36. Kaitlin McLoughlin, Wayne State University, School of Medicine, August 2012 – September 2012.
37. Kalyan Sreeram, Wayne State University, School of Medicine, August 2012 – April 2013.
38. Thomas K Maatman, Wayne State University, School of Medicine, August 2012 – May 2013.
39. Toufic Jildeh, Wayne State University, School of Medicine, Year 1, May – September 2013.
Medical Student Summer Research Fellowship Award, Wayne State University, 2013.
“Comparative Quantitative Assessment of Bone Microstructure”; Stipend + \$1,000
40. Matthew Varga, Wayne State University, BMS Masters Program, June 2013 – December 2013.
41. Omaima Bokhari, Wayne State University, School of Medicine, Year 4, August 2013 – May 2014.
“Quantitative Analysis of Bone Texture Using Digital Tomosynthesis in Spontaneous Osteonecrosis of the Knee (SONK)”
42. Ali Sobh, Wayne State University, School of Medicine, Year 3, December 2013 – January 2014.
“Repeatability and Reproducibility of Digital Tomosynthesis for Quantification of Vertebral Bone Texture”
43. Matthew Madion, Wayne State University, School of Medicine, Class of 2017, April – December 2014.
Medical Student Summer Research Fellowship Award, Wayne State University, 2014.
“Can Trabecular Texture Analysis Predict Vertebral Fracture”; Stipend + \$1,000
44. Lamees Yahya, Wayne State University, Biomedical Engineering, January – December, 2015.
“Cortical bone changes in diabetic obese mice treated with a crosslink breaker”
45. Sasha Stine, Wayne State University, School of Medicine, Year 1, February - November 2015.
“Nonlinear ultrasound for detecting cortical microfractures”
46. Omar Yaldo, Oakland University William Beaumont School of Medicine, March – August 2015.
“In vivo tomosynthesis analysis of vertebral bone in multiple myeloma”
47. Nicholas Adams, Wayne State University, School of Medicine, Class of 2018, May – August 2015.
Medical Student Summer Research Fellowship Award, Wayne State University, 2015.
“Tomosynthesis scans for mapping vertical and horizontal trabeculae”; Stipend + \$1,000
48. Hunter Trafton, Wayne State University, School of Medicine, Year 1, January – September, 2016.
“Cervical spinal canal geometry during neck motion”
49. Sherwin Azad, Wayne State University, School of Medicine, Year 1, March 2016 – September 2016.

“Three dimensional In-Vivo Motion Analysis of the Cervical Spine 5 Years Following Anterior Cervical Decompression and Fusion”

50. Mirabelle Lindquist, Wayne State University, School of Medicine, Year 1, March – July, 2016.
Medical Student Summer Research Fellowship Award, Wayne State University, 2016.
“Nerve Root to Foraminal Wall Distances During Neck Motion”; Stipend + \$1,000
51. Michael Dix, Wayne State University, School of Medicine, Year 1, March – July, 2016.
Medical Student Summer Research Fellowship Award, Wayne State University, 2016.
“Measurement of Vertebral Geometry from Digital Tomosynthesis Images”; Stipend + \$1,000
52. Parnell White, Wayne State University, School of Medicine, Year 1, April – July 2016.
“Three dimensional In-Vivo Motion Analysis of the Cervical Spine 5 Years Following Arthroplasty with an Artificial Disc”
53. Ian Monk, Wayne State University, School of Medicine, Year 1, May 2016 – July 2016.
“Quantitative morphometric assessment of vertebral fracture from low-dose CT scout views in NLST”
54. Azeem Khatri, Wayne State University, School of Medicine, Year 1, January 15 – July 3, 2019
“Analysis of in vivo vertebral DTS-DVC images”

Undergraduate Students (trained in my laboratory):

55. Greg Christopherson: Michigan Technological Un., Biomedical Engr., (Jan-Aug 2001 and Summer 2002).
56. Richard Shaffer: Michigan Technological Un., Biomedical Engr., senior, June-July, 2003.
57. Kevin Baker: Michigan Technological Un., Biomedical Engr., senior, June-July, 2003.
58. Fadel Mahfouz, Un. of Toledo, Bioengineering, senior, May-August, 2004.
59. Christine Ann Hunt: Michigan State Un., Mechanical Engr., junior, May-August, 2004.
60. Elisabeth Michels: Un. of Toledo, Bioengineering, senior, October-December, 2004.
61. Jason Turri, BS: Un. of Michigan, Dearborn, Mechanical Engr., senior, May-August, 2005.
62. Tina Redd: Wayne State University, Mechanical Eng., junior, September 2006 – January 2007.
63. Katherine Haddad, Un. of Michigan, Dearborn, Philosophy/PreMed, junior, May 2008 – August 2008.
64. Scott Hoffmann, Kettering University, Biomedical Engr., Spring 2010, Fall 2010, Spring 2011.
65. Daniel Weitzel, Kettering University, Biomedical Engr., Spring 2010.
66. Michael McDonald, Kettering University, Biomedical Engr., Summer 2010, Spring 2013.
67. Nicole Ramo, Kettering University, Biomedical Engr., Winter 2011, Spring 2012, Spring 2013.
68. Jason Bagnall, Oakland Community College, Engineering, March – August 2012.
69. Jihad Mims, Georgia Institute of Technology, Biomedical Engr., May 7, 2014 – August 15, 2014.
“Bone Turnover Biomarkers and CT Density Heterogeneity”
70. Adam Mulka, Wayne State University, Biomedical Engineering, August 8, 2016 – March 13, 2017.
“Three dimensional In-Vivo Motion Analysis of the Cervical Spine”

High School Students

71. Lily Huang, Troy High School, Troy, MI, June 22 – August 15, 2009.
72. Shuaib Raza, Troy High School, Troy, MI, June 22 – August 15, 2009.
73. Tushar Shetty, Troy High School, Troy, MI, June 22 – August 15, 2009.
Team (Huang, Raza, Shetty): Regional Semi-Finalist; Siemens-Westinghouse Competition in Math, Science, Technology, 2009. “Effect of Osteoid on Stress and Strain Distribution in Human Cancellous Bone as Estimated from Microcomputed Tomography-Based Large Scale Finite Element Analysis.”
74. Anuhya Bhogineni, Athens High School, Troy, MI, June 21 – August 13, 2010.
75. Fariha Ghazi, Athens High School, Troy, MI, June 21 – August 13, 2010.
76. Subhum Sidhar, West Bloomfield High School, MI, June 21 – August 13, 2011.
77. Brenda Wu, Troy High School, Troy, MI, June 21 – August 13, 2011.
78. Vincent Giacobelli, Harrison High School, Farmington, MI, June 18 – August 10, 2012.
79. Joy Zhang, Detroit Country Day High School, Beverly Hills, MI, June 10 – August 9, 2013.
80. Angela Xiao, Troy High School, Troy, MI, June 17 – September 30, 2013.
81. Ellen Yang, Troy High School, Troy, MI, July 17 – September 30, 2013.

82. Abrar Quazi, International Academy (IB Program), Bloomfield, MI, June 23 – August 1, 2014.
“Digital Tomosynthesis and High Resolution Computed Tomography as Clinical Tools for Vertebral Endplate Topography Measurements: Comparison with Microcomputed Tomography”
83. Bhavini Patel, Athens High School, Troy, MI, July 25 – September 1, 2016.
“Neck muscle condition after fusion and arthroplasty surgeries”
84. Andrew Schildcrout, Berkley High School, May - August, 2017
“Cervical spine motion tracking”
85. Anish Saraswat, International Academy East, Troy, June 16 – August 11, 2017
“Bone Mineral Density in the Cervical Spine”
86. Imran Quazi, International Academy Bloomfield Campus High School, June 19 – August 11, 2017: *3D fractal based BMD texture in CT to predict vertebral fracture”*; June 25 – August 1, 2018: *“Textural changes in loaded vertebrae as measured from DTS”*
87. Fatinah Albeez, International Academy East of Troy, September 9, 2017 – August 1, 2018.
“BMD measurements in smokers (NLST)”
88. Surya Krishnan, International Academy East, June 22, 2018 – August 1, 2018.
“DTS-based DVC image processing”
89. Pratham Soni, Troy High School, June 18, 2018 – August 24, 2018
“DTS-based DVC analysis of vertebrae”
90. Razeen Zaman, Detroit Country Day, June 6 – September 30, 2019; July 12 - September 1, 2021
“Measurement of facet joint gap using tomosynthesis imaging”
91. Hussein Mustafa, International Academy, June 3 – August 2, 2019
“Segmentation of cervical spine for motion analysis in vivo”
92. Raha Zaman, Detroit Country Day, July 12 - September 1, 2021
“Intervertebral Disc Grading using Digital Tomosynthesis”
93. Manish Ileni, Novi High School, July 12 - September 1, 2021; June 28, 2022 - present
“Facet joint displacement measurement using DTS-based DVC”
94. Garima Sawhney, Northville High School, June 28, 2022 - present
“Intervertebral Disc Grading using Digital Tomosynthesis”
95. Akash Suruvu, Alliance Academy for Innovation, Georgia, June 28, 2022 - present
“ μ CT based FE modeling of cortical bone – role of osteonal properties”
96. Aanya Shah, Troy High School, June 28, 2022 - present
“Variation of trabecular bone score (TBS) with global region of interest in DXA”

LANGUAGES

English, Turkish.