

## BIOGRAPHICAL SKETCH

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NAME: Bazrgari, Babak

eRA COMMONS USER NAME (agency login): bazrgari

POSITION TITLE: Assistant Professor

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Iran University of Science and Technology, Tehran, Tehran	BS	07/2000	Mechanical Engineering
Iran University of Science and Technology, Tehran, Tehran	MS	07/2003	Biomedical Engineering
École Polytechnique de Montréal, Montréal, Québec	PHD	04/2008	Mechanical Engineering

## A. POSITIONS AND HONORS

### Positions and Employment

- 2008 - 2009 Postdoctoral Fellow, Department of Mechanical Engineering, École Polytechnique de Montréal, Montréal
- 2009 - 2011 Postdoctoral Associate, Department of Industrial and System Engineering, Virginia Tech, Blacksburg, VA
- 2011 - 2011 Adjunct Professor, Department of Industrial and System Engineering, Virginia Tech, Blacksburg, VA
- 2011 - Assistant Professor, Department of Biomedical Engineering, University of Kentucky, Lexington, KY

## B. CONTRIBUTION TO SCIENCE (SELECTED PUBLICATIONS)

- Shojaei I, Hendershot BD, Wolf EJ, Bazrgari B. Persons with unilateral transfemoral amputation experience larger spinal loads during level-ground walking compared to able-bodied individuals. Clin Biomech (Bristol, Avon). 2016 Feb;32:157-63. PubMed PMID: [26682630](#); PubMed Central PMCID: [PMC4779428](#).
- Phillips M, Bazrgari B, Shapiro R. The effects of military body armour on the lower back and knee mechanics during toe-touch and two-legged squat tasks. Ergonomics. 2015;58(3):492-503. PubMed PMID: [25343226](#).
- Hendershot BD, Bazrgari B, Nussbaum MA. Persons with unilateral lower-limb amputation have altered and asymmetric trunk mechanical and neuromuscular behaviors estimated using multidirectional trunk perturbations. J Biomech. 2013 Jul 26;46(11):1907-12. PubMed PMID: [23726183](#). Bazrgari B, Shirazi-Adl A, Parnianpour M. Transient analysis of trunk response in sudden release loading using kinematics-driven finite element model. Clin Biomech (Bristol, Avon). 2009 May;24(4):341-7. PubMed PMID: [19285367](#).
- Shojaei I, Arjmand N, Bazrgari B. An optimization-based method for prediction of lumbar spine segmental kinematics from the measurements of thorax and pelvic kinematics. Int J Numer Method Biomed Eng. 2015 Jun 2; PubMed PMID: [26037214](#).
- Bazrgari B, Nussbaum MA, Madigan ML. Estimation of trunk mechanical properties using system identification: effects of experimental setup and modelling assumptions. Comput Methods Biomech Biomed Engin. 2012;15(9):1001-9. PubMed PMID: [21660779](#).
- Bazrgari B, Nussbaum MA, Madigan ML, Shirazi-Adl A. Soft tissue wobbling affects trunk dynamic response in sudden perturbations. J Biomech. 2011 Feb 3;44(3):547-51. PubMed PMID: [20888563](#).
- Arjmand N, Shirazi-Adl A, Bazrgari B. Wrapping of trunk thoracic extensor muscles influences muscle forces and spinal loads in lifting tasks. Clin Biomech (Bristol, Avon). 2006 Aug;21(7):668-75. PubMed PMID: [16678948](#).

8. Wang W, Bazrgari B, Shirazi-Adl A, Rakheja S, Boileau PÉ. Biodynamic response and spinal load estimation of seated body in vibration using finite element modeling. *Ind Health*. 2010;48(5):557-64. PubMed PMID: [20953073](#).
9. Bazrgari B, Shirazi-Adl A, Kasra M. Seated whole body vibrations with high-magnitude accelerations--relative roles of inertia and muscle forces. *J Biomech*. 2008 Aug 28;41(12):2639-46. PubMed PMID: [18672242](#).
10. Bazrgari B, Shirazi-Adl A, Trottier M, Mathieu P. Computation of trunk equilibrium and stability in free flexion-extension movements at different velocities. *J Biomech*. 2008;41(2):412-21. PubMed PMID: [17897654](#).
11. Bazrgari B, Shirazi-Adl A, Arjmand N. Analysis of squat and stoop dynamic liftings: muscle forces and internal spinal loads. *Eur Spine J*. 2007 May;16(5):687-99. PubMed PMID: [17103232](#); PubMed Central PMCID: [PMC2213554](#).
12. Vazirian M, Shojaei I, Tromp RL, Nussbaum MA, Bazrgari B. Age-related differences in trunk intrinsic stiffness. *J Biomech*. 2016 Apr 11;49(6):926-32. PubMed PMID: [26459489](#).
13. Phillips MP, Shapiro R, Bazrgari B. The effects of military body armour on the lower back and knee mechanics during box drop and prone to standing tasks. *Ergonomics*. 2015 Sep 28;PubMed PMID: [26269149](#).
14. Miller EM, Bazrgari B, Nussbaum MA, Madigan ML. Effects of exercise-induced low back pain on intrinsic trunk stiffness and paraspinal muscle reflexes. *J Biomech*. 2013 Feb 22;46(4):801-5. PubMed PMID: [23182221](#); PubMed Central PMCID: [PMC3568223](#).
15. Bazrgari B, Hendershot B, Muslim K, Toosizadeh N, Nussbaum MA, Madigan ML. Disturbance and recovery of trunk mechanical and neuromuscular behaviours following prolonged trunk flexion: influences of duration and external load on creep-induced effects. *Ergonomics*. 2011 Nov;54(11):1043-52. PubMed PMID: [22026947](#).

Complete List of Published Work in My Bibliography:

<http://www.ncbi.nlm.nih.gov/myncbi/babak.bazrgari.1/bibliography/43753621/public/?sort=date&direction=ascending>

## C. RESEARCH SUPPORT

### Ongoing Research Support

R03 HD086512-02                      Bazrgari (PI)    09/01/16-08/31/18

NIH-NICHD

“Spinal loads during activities of daily living: Influences of unilateral lower-limb amputation”

This project determines the impact of altered trunk neuromuscular strategy following unilateral lower limb amputation on spinal load and risk of disc failure.

Role: PI

W81XWH-14-2-0144                      Hendershot (PI)    10/01/14-09/01/17

CDMRP FY13 Peer Reviewed Orthopaedic Research Program, Department of Defense

“Evaluation of Spine Health and Spine Mechanics in Service Members with Traumatic Lower-Extremity Amputation or Injury”

This study seeks to investigate the relationship(s) between lower-extremity trauma and low back pain through evaluations of current spine health.

Role: Co-Investigator

CTSA Pilot-BAZRG-WVU                      Bazrgari and Ning (MPI)    08/01/15-03/31/17

University of Kentucky's Center for Clinical and Translational Science

“Toward an objective and quantitative assessment of lower back pain: understanding patients' biomechanical changes after lumbar facet nerve block”

In this project, we will investigate changes in the function and biomechanics of the lower back following a facet nerve block procedure.

Role: MPI