CURRICULUM VITAE (June 2017)

Name: Rahul Soangra, PhD
Name of Institution: Chapman University
Department of Physical Therapy
Crean College of Health and Behavioral Sciences
Rinker Health Science Campus in Irvine
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Education:

Degree: Doctor of Philosophy (Ph.D)
Institution: Virginia Tech-Wake Forest University, Blacksburg, VA
Major: Biomedical Engineering
Date awarded (month/year): May, 2014

Degree: Master of Science (MS)
Institution: Virginia Tech, Blacksburg, VA
Major: Industrial and Systems Engineering (Human Factors & Ergonomics Engineering)
Date awarded (month/year): December, 2012

Degree: Master of Technology (MTech)
Institution: Indian Institute of Technology Roorkee, Roorkee, Uttarakhand
Major: Chemical Engineering
Date awarded (month/year): May, 2006

Degree: Bachelor of Engineering (BE)
Institution: MBM Engineering College, J N V University, Jodhpur
Major: Chemical Engineering
Date awarded (month/year): May, 2003

Licensure Information:

State and Registration Number: NIL

Certifications (eg, ABPTS):

Associate Ergonomics Professional certified by Board of Certification of Professional Ergonomics (BCPE)

Employment and Positions Held:

Title/position: Post-Doctoral Research Associate
Faculty rank: NA
Tenure status: NA
Institution: Arizona State University
City and State: Tempe, AZ
Duration (November 2015 – July 2017)

Title/position: Assistant Professor
Faculty rank: Assistant Professor
Tenure status: NA
Institution: National Institute of Technology Rourkela
City and State: Rourkela, Odisha

Duration (July 2014 – October 2015)

Title/position: Project Engineer
Faculty rank: NA
Tenure status: NA
Institution: Wipro Technologies
City and State: Pune, Maharashtra
Duration (August 2006 – January 2008)

Peer Reviewed Publications:

R. Soangra, T.E. Lockhart. Dual-task does not increase slip and fall risk in healthy young and older adults during walking. Applied Bionics and Biomechanics. Vol. 2017, pp. 1-12, 2017

Barfield JP, Newsome L, John EB, Sallee D, Frames C, **Soangra R**, et al. A case report of shoulder fatigue imbalance in wheelchair rugby: implications to pain and injury. *Spinal Cord Series And Cases*. 2016;2:16002.

R. Soangra, T. E. Lockhart, J. Lach, and E. M. Abdel-Rahman, "Effects of Hemodialysis Therapy on Sit-to-Walk Characteristics in End Stage Renal Disease Patients," *Annals of Biomedical Engineering*, vol. 41, pp. 795-805, Apr 2013.

Zhang, J., Lockhart, T. E., & **Soangra, R**. (2014). Classifying lower extremity muscle fatigue during walking using machine learning and inertial sensors. *Ann Biomed Eng, 42*(3), 600-612. doi: 0.1007/s10439-013-0917-0

R. Soangra, M.C. Soangra (2015). Hydatid Cystof Thoracic Spine: A Rare Cause of Paraplegia. *International Journal of Science and Research*, 4(4) 3210-3212, April 2015

R. Soangra, C B Majumder and P. Roy. Exploitation of genetic capacities of Bacteria for Improved plasmid stability in remediation of Arsenic Pollution, *European journal of Advances in Engineering and Technology*, 2015, 2(4): 84-49

R. Soangra, C B Majumder and P. Roy. Whole cell Arsenic Biosensor-A Cheap Technology for Bioavailable Arsenic (As) Determination, *European Journal of Advances in Engineering and Technology*, 2015, 2(5): 52-61

Peer Reviewed Scientific and Professional Presentations:

R. Soangra, S. Moon, T.E. Lockhart, "Lower Extremity Muscle Fatigue Influences Nonlinear Variability in Trunk Accelerations", *Biomed Sci Instrum*, **Accepted 2017**

R. Soangra, T.E. Lockhart, "Effects of lateral stepping gait and dual tasking during treadmill walking in healthy young and older adults", *Biomed Sci Instrum*, **Accepted 2017**

R. Soangra, T.E. Lockhart, "Overground Walking along with counting backwards influences movement variability in healthy young and older adults.", *Biomed Sci Instrum*, **Accepted 2017**

R. Soangra, T.E. Lockhart, S. Moon, C. W. Frames, S. Rezvanian, V. Smith, M. Olson, A. Lieberman "Low and High Frequency Fluctuations in Center of Pressure Signals can detect Postural Deficits in Idiopathic Parkinson's Disease Patients", *Biomed Sci Instrum*, **Accepted 2017**

R. Soangra and T. E. Lockhart, "Determination of stabilogram diffusion analysis coefficients and invariant density analysis parameters to understand postural stability associated with standing on anti-fatigue mats," *Biomed Sci Instrum*, vol. 48, pp. 415-22, 2012. **PMID: 22846314**

R. Soangra and T. E. Lockhart, "A comparative study for performance evaluation of sit-to-stand task with body worn sensor and existing laboratory methods," *Biomed Sci Instrum*, vol. 48, pp. 407-14, 2012. **PMID: 22846313**

T. E. Lockhart, H. T. Yeoh, **R. Soangra**, M. Jongprasithporn, J. Zhang, X. Wu, et al., "Non-invasive fall risk assessment in community dwelling elderly with wireless inertial measurement units," Biomed Sci Instrum, vol. 48, pp. 260-7, 2012. **PMCID: PMC3716278**

Frames, **R. Soangra**, and T. E. Lockhart, "Assessment of postural stability using inertial measurement unit on inclined surfaces in healthy adults - biomed 2013," Biomed Sci Instrum, vol. 49, pp. 234-42, 2013. **PMID: 23686205**

A.

R. Soangra and T. E. Lockhart, "Comparison of intra individual physiological sway complexity from force plate and inertial measurement unit - biomed 2013," Biomed Sci Instrum, vol. 49, pp. 180-6, 2013. **PMID: 23686198**

T. E. Lockhart, **R. Soangra**, J. Zhang, and X. Wu, "Wavelet based automated postural event detection and activity classification with single imu - biomed 2013," Biomed Sci Instrum, vol. 49, pp. 224-33, 2013. **PMID: 23686204**

Lockhart, T. E., **Soangra, R**., Chung, C., Frames, C., Fino, P., & Zhang, J. (2014). Development of automated gait assessment algorithm using three inertial sensors and its reliability. *Biomed Sci Instrum, 50*, 297-306. **PMID: 25405437**

Soangra, R., & Lockhart, T. E. (2014). Agreement in gait speed from smartphone and stopwatch for five meter walk in laboratory and clinical environments. *Biomed Sci Instrum, 50*, 254-264. **PMID: 25405433**

R. Soangra, B. Jones, and T. E. Lockhart, "Effects of Anti-Fatigue Flooring on Gait Parameters," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting,* vol. 54, pp. 2019-2022, 2010. **doi: 10.1177/154193121005402324**

R. Soangra, T. E. Lockhart, and N. Van de Berge, "An approach for identifying gait events using wavelet denoising technique and single wireless IMU," *Proceedings of the Human Factors and Ergonomics Society Annual Meeting,* vol. 55, pp. 1990-1994, 2011. **doi: 10.1177/1071181311551415**

X. Wu, H. T. Yeoh, **R. Soangra**, and T. E. Lockhart, "Investigation into the Functional Mobility Difference between Obese and Non-Obese Elderly," Proceedings of the Human Factors and

Ergonomics Society Annual Meeting, vol. 56, pp. 1814-1816, 2012. **doi: 10.1177/1071181312561365**

Chung, C. C., **Soangra, R**., & Lockhart, T. E. (2014). Recurrence Quantitative Analysis of Postural Sway using Force Plate and Smartphone. Proceedings of the Human Factors and Ergonomics Society Annual Meeting, 58(1), 1271-1275. **doi: 10.1177/1541931214581265**

Soangra, R., Lockhart, T. E., Frames, C. W., Zhang, J., Moon, S. H., & Park, J. (2014). Potential for using Smartphone Accelerometers in Non-laboratory Environments. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 58(1), 1672-1675. **doi: 10.1177/1541931214581349**

T. E. Lockhart, A. T. Barth, X. Zhang, **R. Songra**, E. Abdel-Rahman, and J. Lach, "Portable, Non-Invasive Fall Risk Assessment in End Stage Renal Disease Patients on Hemodialysis," ACM Trans Comput Hum Interact, pp. 84-93, 2010. **PMID:22124286**

Lockhart, T., Frame, C., Soangra, R., & Lach, J. Sensing & Measurement Fall risk prediction using wearable wireless sensors. **doi: 10.1117/2.1201405.005437**

Other Professional Presentations:

Effects of Orthotics on Dynamic Stability in the Elderly T. E. Lockhart, H. Yeoh, **R. Soangra**, C. Haynes, and P. G. Brolinson, Virginia Tech, Blacksburg, VA, Edward Via Virginia College of Osteopathic Medicine, Blacksburg, VA PS – Fri – A – 187 BMES 2011 Thursday, October 13, 2011

"An Objective Assessment Device For Quantifying Ankle Plantarflexion Muscle Performance During Dialysis" **R. Soangra**, and T. E. Lockhart Virginia Tech, Blacksburg, VA BMES 2010

An Approach for Identifying Posturo-Locomotion-Manual Events Using Wavelet Denoising Technique and Three Wireless IMU **R. Soangra**, and T. E. Lockhart Virginia Tech, Blacksburg, VA PS–Fri–A–94, Thursday, October 13, 2011

Sit-to-stand evaluation in young and older adults using body worn sensors**, Rahul Soangra**, Thurmon Lockhart, BMES 2012 Saturday, October 27, 2012

Wavelet based automated postural event detection and activity classification with single IMU, **Rahul Soangra** and Thurmon E. Lockhart, 10th Annual Graduate Student Research Symposium, May 12, 2011 Virginia Tech- Wake Forest University

Effects of hemodialysis therapy on sit-to-walk characteristics in ESRD patients, **Rahul Soangra** and Thurmon E. Lockhart, 11th Annual Graduate Student Research Symposium, May 10, 2012 Virginia Tech- Wake Forest University

Effects Of Electromyogram Signal Filtering On Muscle Activation Time American Society of Biomechanics Omaha 2013, **Rahul Soangra**; Thurmon Lockhart; Jian Zhang

Ankle Fatigue Classification Using Support Vector Machines American Society of Biomechanics Omaha 2013 Jian Zhang; Thurmon Lockhart; **Rahul Soangra**

NSF iCORPS (Technical Presentation) https://www.youtube.com/watch?v=ZKahkX08CCI
NSF iCORPS (Lesson Learned) https://www.youtube.com/watch?v=bioKcbr15zU

Poster FR-P0747 "A Novel Assessmnet of Fall Risk in Hemodialysis Patients: Preliminary Findings" at American Society of Nephrology, Kidney week 2012 Annual Meeting, San Diego, California Friday, November 2, 2012, Emaad Abdel Rahman, Thurmon Lockhat, **Rahul Soangra**, John Lach

Balance Measurements Using A Smartphone At The Upper Arm Compared To The Balance Error Scoring System, Peter Fino, Matthew Weirath, **Rahul Soangra**, Thurmon Lockhart, Per Gunnar Brolinson, Virginia Tech *American Society of Biomechanics, August 8th 2015*

Effects of Plantarflexor Muscle Fatigue on Gait Characteristics, Ehsan Rashedi, **Rahul Soangra**, Thurmon Lockhart and Maury Nussbaum, *40th Annual Meeting of the American Society of Biomechanics*, At Raleigh, NC, August 2016

P-Fri-468 "Smartphone Based Fall Risk Assessment Using Dynamic Stability in Healthy Individuals" Seong Moon, **Rahul Soangra**, Saba Rezvanian, Victoria Smith, Chris Frames, Markey Olson, and Thurmon Lockhart, Biomedical Engineering Society 5-8 October 2016

P-Fri-469 "Can Inertial Sensors Measure movement variability in Young and Older Subjects" ,**Rahul Soangra** and Thurmon Lockhart, Biomedical Engineering Society 5-8 October 2016

P-Sat-269 "Determining Static and Dynamic Movement Between both Gender with Inertial Measurment Unit" Ryan Bridges, Sydney Connor, Seong Moon, Victoria Smith, **Rahul Soangra** and Thurmon Lockhart, Biomedical Engineering Society 5-8 October 2016

Funded/In Review Grant Activity:

Authorship/participation: NSF ICorp Entrepreneur Lead
Amount of funding awarded: $50,000
Nature of project: Entrepreneurship
Date and source: NSF

Membership in Scientific/Professional Organizations:

Organization: Ergonomics, Taylor & Francis, United Kingdom
Duration (2013– Present)
Position: Reviewer

Organization: Annals of Biomedical Engineering, Springer
Duration (2013– Present)
Position: Reviewer

Organization: Gait & Posture, Elsevier
Duration (2016– Present)
Position: Reviewer

Organization: School of Biomedical Engineering and Sciences, Graduate Symposium, Virginia Tech
Duration (2012– 2013)
Position: Reviewer

Organization: Biomedical Engineering Society
Duration (2012– Till Date)
Position: Member

Organization: Human Factors Ergonomics Society
Duration (2012– Till Date)
Position: Member

Community Service:

Title: Fall Risk Assessment in Community Dwelling Elderly
Agency: Northern Virginia Fall Prevention Coalition
Duration (2009-2014)

Services to the University/College/School on Committees/Councils/Commissions:

Department: School of Biological and Health Systems Engineering
Dates: 2015-2017
Graduate Committee Member For: Isha Doshi, Mahathi Sai, Varsha Joshi

Honors and Awards:

Title: Post-Doctoral Fellowship
Awarding agency: University Grants Commission, New Delhi
Date 2014-2019

Title: Entrpreneur Lead
Awarding agency: NSF Icorp
Date 2013

Title: Graduate Fellowship
Awarding agency: Ministry of Human Resource Development, Government of India
Date 2004-2006

Title: Best Game Prize
Awarding agency: Biomedical Engineering Society
Date 2012

Title: President
Awarding agency: Chemical Engineering Student Association
Date 2002