

# Curriculum Vitae

**Homer Nazeran PhD, CPEng (Biomed.)**

**Department of Electrical and Computer Engineering**

University of Texas at El Paso (UTEP)

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## EDUCATION

University	Degree	Major	Dates
University of Texas (UTSWMC at Dallas) & UT Arlington	PhD	Biomedical Engineering	1986-1991
Case Western Reserve University	MSc	Clinical Engineering	1975-1977
University of Texas at Austin	BS with Honors	Electrical Engineering	1972-1975

**PhD Dissertation Title:** *Computer Modeling of Intracellular Ionic Calcium Transients in Isolated Single Ventricular Myocytes during Contraction and Relaxation*

**MS Thesis Title:** *Some Design Aspects of a Three-fibers Fiber-optics Oximeter*

## EXPERIENCE

### Full-Time Academic Experience

UTEP	Professor	Electrical and Computer Engineering	Sept 2013 ...
UTEP	Adjunct Professor	College of Health Sciences	July 2006 ...
UTEP	Associate Professor (Tenure granted)	Electrical and Computer Engineering	Aug 2002 ... Aug 2007
UTSWMC at Dallas/UTA	Visiting Professor	Biomedical Engineering Program	Fall 2011
UTSWMC at Dallas/UTA	Visiting Professor	Biomedical Engineering Program	Fall 1997
Flinders Univ. of South Australia	Senior Academic	School of Engineering	Sep1991-July 2002
UTSWMC at Dallas	Research Assistant	Department of Pathology	Sep1987- Aug 1991
UTA	Research Assistant	Biomedical Engineering	Sep 1986-Aug 1987
Esfahan Univ.	Assistant Professor	Medical School Esfahan, Iran	Sep 1978- Aug 1979
Imperial Medical Center of Iran	Assistant Professor	Allied Health/Medical School Tehran, Iran	Sep 1979 – Aug 1985

### Non-Academic Experience

LifeWave LLC San Diego, California, USA	Senior Biomedical Research Consultant	August 2005 - Dec 2012
Biomedical Engineering Co Ltd Tehran, Iran	Chief Biomed Engineer, Founder/CEO	Sep 1980 - Aug 1986
Cleveland Metropolitan General Hosp. Cleveland, Ohio, USA	Clinical Engineering Intern	June 1976-Dec 1976

# TEACHING ACCOMPLISHMENTS

## Honors and Awards in Teaching

1. Miguel Izquierdo **Teaching Excellence Award 2014** (Outstanding contribution in teaching of Electrical Engineering)
2. Dean Eugene Thomas Award, **Outstanding Faculty** in the Department of Electrical and Computer Engineering, UTEP (**Spring 2004**)
3. Advisor of UTEP outstanding **MS Thesis Award** granted to Nazila Hafezi for the project entitled: "An Integrated Model-based Package for Model-based Neuro-fuzzy Classification of Small Airway Dysfunction in children"(2009)

## New Courses Developed

<i>EE 3340</i>	<i>Linear Integrated Circuits (Electronics II)</i>
<i>EE4385</i>	<i>Biomedical Instrumentation</i>
<b>EE5391</b>	<b>Individual Studies (New Biomedical Engineering Research topics)</b>
<b>EE 5351</b>	<b>Physiological Systems and Measurements (MS Level)</b>
<b>EE 5352</b>	<b>Medical Diagnostic and Therapeutic Devices (MS Level)</b>
<b>EE 6351</b>	<b>Physiological Systems and Measurements (PhD Level)</b>
<b>EE 6352</b>	<b>Medical Diagnostic and Therapeutic Devices (PhD Level)</b>

The courses shown in *italics* are modified and enhanced versions of pre-existing courses and the courses in **Bold** are new courses.

In addition to the above courses, I have given a number of presentations in the graduate student seminars (EE 5195) on a variety of research topics such as:

- *Derivation of Respiration from ECG Signals.*
- *Detection of Sleep Apnea Using Fuzzy Logic.*
- *An Integrated Computer-based System to Study Neuromuscular Disorders of the Upper Limb in Humans.*
- *Biomedical Engineering Research at Electrical and Computer Engineering at UTEP.*
- *Biomedical Signal Processing*
- *Biomedical Instrumentation*
- *Telemedicine*
- *Heart Rate Variability Signal Processing and Analysis*
- *Sleep Apnea Detection*
- *Modeling of Human Respiratory System*
- *Patient-friendly Lung Function Testing (Asthma, etc.)*
- *Etc.*

## Education Related Funding

### Funded

1. Investigators: Aguilera, Aley, Boland, Collins, Echegoyen, Grineski, Morera, **Nazeran**

Funding Agency: National Institutes of Health

Title of Project: BUILDing SCHOLARS

The NIH Building Infrastructure Leading to Diversity (BUILD) Initiative (U54)

Project Dates: 09/01/2014 to 08/31/2019.

Amount: **\$22,600,000**

<http://commonfund.nih.gov/diversity/fundedresearch>

2. Investigators: Aguilera, Aley, Boland, Collins, Echegoyen, Grineski, Morera, **Nazeran**

Funding Agency: National Institutes of Health

Title of Project: Building Infrastructure Leading to Diversity (Planning Grant)

Project Dates: 09/01/2013 to 02/28/2014.

Amount: **\$225,000**

<http://engineering.utep.edu/announcement102413.htm>

**3. Investigators:** EPCC PI: Maria Alvarez, **UTEP PI: Homer Nazeran**, El Paso Independent School District PI: Dianne Jones  
**Funding Agency:** Department of Education, Minority Science and Engineering Improvement Program,  
**Title of Project:** *A 3-Step Integrated Bridge Program from Early College High School to Bioengineering*  
**Project Dates:** 09/01/2008 to 8/31/2011.  
**Amount:** \$800,000

**4. Investigators:** Carlos Ferregut, **Homer Nazeran**  
**Funding Agency:** US Department of Education  
**Title of Project:** North American Mobility in Higher Education  
**Project Dates:** 09/01/2007 to 08/31/2013  
**Amount:** \$87,500

### Non-Funded

**1. Investigators:** Martine Ceberio, **Homer Nazeran**, Peter Golding, EPCC Faculty  
**Funding Agency:** US Department of Education (DOE)  
**Title of Project:** *A Partnership Model for Increasing Participation in Computer Science and Engineering through Curriculum Alignment, ARG Model-based Pedagogy, and Research Engagement Emphasizing Biomedical Engineering Applications*  
**Project Dates:** 01/01/2012 to 8/31/2015  
**Amount Requested:** \$770,325

## PUBLICATIONS

PUBLICATIONS AUTHORED INDIVIDUALLY OR WITH RESEARCH COLLABORATORS ARE SHOWN IN BLACK.

PUBLICATIONS RELATED TO TEACHING ARE SHOWN IN BROWN.

PUBLICATIONS AUTHORED WITH MY PHD AND POST-DOC STUDENTS ARE SHOWN IN GREEN.

PUBLICATIONS AUTHORED WITH MY MS STUDENTS ARE SHOWN IN BLUE.

PUBLICATIONS AUTHORED WITH MY UNDERGRADUATE (UG) STUDENTS ARE SHOWN IN ORANGE.

(STUDENT NAMES ARE SHOWN IN ITALICS.)

## Journal Articles

1. Piven EF, Lovett L, **Nazeran H**, Bader J "Issues of Adjustment to Continuous Insulin Infusion Device," *The Internet Journal of Allied Health Sciences and Practice*, Vol. 12, No. 3, pp 1-9, 2014 (<http://ijahsp.nova.edu/articles/Vol12Num3/pdf/Piven.pdf>)
2. Piven EF, **Nazeran H** "*The Experience of Mexican-Americans Transitioning to Insulin Pump Technology*," *J Community Med Health Educ*, 2013; 3:222. doi: 10.4172/2161-0711.1000222
3. Derakhshanrad A, Rassafiani, M, Haghgoo H, Piven EF, **Nazeran H** "Neuro-occupation: A nonlinear Dynamical Perspective to the Brain's Neural Mechanism," *Journal of Research in Rehabilitation Sciences, North America*, 9:754-766, 2013.
4. *Ebrahimi F*, Setaredan K, *Ayala-Moyeda J*, **Nazeran H** "Automatic Sleep Staging Using Empirical Mode Decomposition, Discrete Wavelet Transform, Time-Domain, and Nonlinear Dynamics Features of Heart Rate Variability Signals," *Computer Methods and Programs in Biomedicine Comput Methods Programs Biomed.* 112(1): 47-57. 2013 doi: 10.1016/j.cmpb.2013.06.007.
5. Piven E, Dharia R, Jones K, Davis C, **Nazeran H** "*Effect of IceWave Organic Nanoscale Patches on Reduction of Musculoskeletal Pain*," *TANG International Journal of Genuine Traditional Medicine*, (Original Article), Vol 3, Issue 1, e5, pp 1-5, Feb2013 (TANG / [www.e-tang.org](http://www.e-tang.org))
6. **Nazeran H**, Blake-Greenberg S, Haltiwanger, E "*Mild stimulation of stomach 36 acupuncture point by organic Nanoscale SP6 patch improves cellular physiologic functional status of different organs*," TANG

International Journal of Genuine Traditional Medicine, (Original Article), Vol 2, Issue 1, e10, pp 1-6, 2012 (TANG / www.e-tang.org).

7. De Rock L, Clark D, **Nazeran H** "Infrared Thermal Imaging Quantifies the Efficacy of IceWave Patches in Musculoskeletal Pain Relief in Horses," *Journal of American Holistic Veterinary Medical Association*, Vol 30, No. 1, pp 17-26, 2011.
8. **Meraz E, Nazeran H, Ramos C, Nava P, Diong B, Goldman M D** "Analysis of impulse oscillometric measures of lung function and respiratory system model parameters in small airway-impaired (SAI) and normal children over 2 years," *Biomedical Engineering Online Journal*, 10:21. 2011.
9. Von Borries R, Pierluissi J, **Nazeran H** "Redundant Redundant Discrete Wavelet Transform for ECG Signal Processing," *Biomedical Soft Computing and Human Sciences Journal*, Vol 14, No 2, pp. 69-80, 2009.
10. Diong B, **Rajagiri A, Goldman M, Nazeran H** "The Augmented RIC Model of the Human Respiratory System", *Journal of Medical & Biological Engineering & Computing*, Vol 47, No. 4, pp 395-404, 2009
11. **Nazeran H, Goldman M, Nava P, Diong B, Barua M, Crockett A** "Forced Oscillation: Neural Networks Can Advance the Utility of Impulse Oscillometry in Assessment of Lung Function in Children", *International Journal of Medical Implants and Devices*, Vol 2, Nos 3/4 pp 89-107, 2007
12. **Nazeran H** "Wavelet-based segmentation and feature extraction of heart sounds for Intelligent PDA-based Phonocardiography", *Methods of Information in Medicine Journal, Special Issue on Biomedical Signal Interpretation*, Vol 46, No 1, pp 135-141, 2007
13. Diong B, **Nazeran H, Nava P, Goldman M** "Modeling Human Respiratory Impedance", *IEEE Engineering in Medicine and Biology, Special Issue on Respiratory Sound Analysis*, Vol 26, No. 1, pp 48-55, 2007
14. Haltiwanger E, Lazzarini I, **Nazeran H** "Application of Nonlinear Dynamics to Neuro-occupation Theory: A Case Study for Alcoholism", *the British Journal of Occupational Therapy*, Vol 70, No 8, pp 349-357, 2007
15. **Jaberzadeh S, Scutter S, Nazeran H** "Mechanosensitivity of the median nerve and mechanically produced motor responses during Upper Limb Neurodynamic Test 1", *Physiotherapy*, Vol. 91, pp 94-100, 2005
16. **Jaberzadeh S, Nazeran H, Scutter S, Warden-Flood A** "Compensation of limb weight on interfaced raw torque signals from a KIN-COM<sup>®</sup> dynamometer to an AMLAB<sup>®</sup> Workstation", *Journal of Australasian Physical and Engineering Sciences in Medicine*, Vol. 27, No. 2, pp69-73, 2004
17. **Mewett D, Reynolds K, Nazeran H** "Reducing Power Line Interference in Digitised EMG Recordings by Spectrum Interpolation", *Journal of Medical & Biological Engineering & Computing*, Vol.43, No.4, pp 524-531, 2004
18. **Turker K, Brinkworth R, Abolfathi P, Linke I, Nazeran H** "A device for investigating neuromuscular control in the human masticatory system", *Journal of Neuroscience Methods*, Vol. 134, pp 141-149, 2004
19. **Brinkworth R, Whitham E, Nazeran H** "Establishment of Paediatric Biochemical Reference Ranges", *Annals of Clinical Biochemistry, (Original Article)*, Vol. 41, pp 321-329, 2004
20. **Jaberzadeh S, Scutter S, Warden Flood A, Nazeran H** "Between-days Reliability of H-Reflexes in Human Flexor Carpi Radialis", *Archives of Physical Medicine and Rehabilitation Journal*, Vol. 85, No. 7, pp 1168-1173, 2004
21. **Jaberzadeh S, Nazeran H, Scutter S, Warden-Flood A** "Compensation of limb weight on interfaced raw torque signals from a KIN-COM<sup>®</sup> dynamometer to an AMLAB<sup>®</sup> Workstation", *Journal of Australasian Physical and Engineering Sciences in Medicine*, Vol. 27, No. 2, pp69-73, 2004
22. **Jaberzadeh S, Nazeran H, Scutter S, Warden-Flood A** "An integrated AMLAB-based system for acquisition, processing and analysis of evoked EMG and mechanical responses of upper limb muscles", *Journal of Australasian Physical and Engineering Sciences in Medicine*, Vol. 26, No. 2, pp6-14, 2003
23. **Hosseini HG, Nazeran H, Moran B** "ECG compression: Evaluation of FFT, DCT, and WT performance", *Journal of Australasian Physical & Engineering Science in Medicine*, Vol. 22, No. 4, pp 186-192, 1998
24. **Nazeran H, Hosseini H, Ayres M, Percy M** "Power Spectrum Analysis of Femoral Rotations during Gait", *Journal of Medical & Biological Engineering & Computing*, Vol 35, No. 5, pp 553-555, 1997
25. **Randhawa S, Nazeran H, Brookes S, Costa M** "Towards a Neuro-mechanical Model of Intestinal Motor Activity", *Journal of Medical & Biological Engineering & Computing*, Vol. 35, Supp. Part 1, GO1-OS2, 1997
26. **Nazeran H, Macrow J, Pilowsky P** "Development of a low-cost microprocessor-based blood gas monitor", *Journal of Australasian Physical & Engineering Sciences in Medicine* Vol. 18, No. 3, pp 143-145, 1995
27. **Randhawa S, Nazeran H, Byrnes D, Waterman S, Costa M** "Computer Modeling of Intestinal Peristalsis", *Journal of Australasian Physical & Engineering Sciences in Medicine*, Vol. 18, No. 1, pp 45-47, 1995
28. **Nazeran H, Rice F, Moran W, Skinner J** "Biomedical Image Processing in Pathology: A Review", *Australasian Physical & Engineering Sciences in Medicine Journal*, Vol. 18, No. 1, pp 26-38, 1995

29. Burton K, **Nazeran H**, Hagler H "Exposure to Free Radicals Alters Ionic Calcium Transients in Adult Rat Cardiac Myocytes", American Journal of Cardiovascular Pathology, Vol. 4, No. 3, pp 235-244, 1992
30. Burton K, **Nazeran H**, Hagler H "Exposure of Isolated Adult Rat Cardiac Myocytes to Oxygen Derived Free Radicals in Intracellular Ionic Calcium Levels", Journal of Molecular and Cellular Cardiology (supplement III) 23, P-1-1, 1991
31. Burton K, **Nazeran H**, Hagler H "Alterations in Intracellular Ionic Calcium Levels in Isolated Adult Rat Cardiac Myocytes due to Generation of Free Radicals" FASEB Journal 5: A1282, 1991
32. Burton K, **Nazeran H**, Hagler H "Free Radicals Alter Ionic Calcium Transients Observed in Isolated Adult Rat Cardiac Myocytes", Circulation, Vol. 82, No. 4, 1792a, 1990
33. Morris A C, Hagler H K, **Nazeran H**, Buja L M "Resolution of Calcium Transients Associated with Contraction in Cultured Neonatal Rat Ventricular Myocytes", Biophysical Journal, Vol. 53, 601a, 1988

## Proceedings (Peer Reviewed-International and National Conferences)

1. [Rodriguez L, Nazeran H, Meraz E, Estrada E, Rodriguez C, Edalatpour R](#) "Discriminative Capacity of Impulse Oscillometry in Diagnosis and Treatment of Asthmatic Children," Proceedings of the 29<sup>th</sup> Southern Biomedical Engineering Conference (SBEC 2013), Miami Florida, 3-5 May, 2013.
2. [Verma A, Cabrera S, Mayorga A, Nazeran H](#) "A Robust Algorithm for Derivation of Heart Rate Variability Spectra from ECG and PPG Signals," Proceedings of the 29<sup>th</sup> Southern Biomedical Engineering Conference (SBEC 2013), Miami Florida, 3-5 May, 2013.
3. [Rodriguez L, Von Borries R, von Borries G, Nazeran H](#) "Filter Bank Decomposition Proves Effective in Quantitative Evaluation of Human Muscle Fatigue," Proceedings of the 29<sup>th</sup> Southern Biomedical Engineering Conference (SBEC 2013), Miami Florida, 3-5 May, 2013.
4. [Ebrahimi F, Setaredan K, Nazeran H](#). "DFA- and DWT- based features of HRV signal for automatic sleep staging." (pp. 4 pages). Tehran/New Jersey: IEEE Press and Iranian Biomedical Engineering Society.
5. **Nazeran H**, Blake-Greenberg S "Organic Nanopatch Device Improves Sleep and Enhances Vital Organ Function" Proceedings of the 22<sup>nd</sup> of the International Conference of Electronics, Communications and Computers, CONIELECOMP 2012, Universidad de las Américas, Cholula Puebla, México, Feb 27-29, IEEE Press, 2012 (6 pages)
6. [Amanipour R, Nazeran H, Reyes I, Franco M, Haltiwanger, E](#) "The Effects of Blood Glucose Changes on Frequency-domain Measures of HRV Signal in Type 1 Diabetes," In Proceedings of the 22<sup>nd</sup> of the International Conference of Electronics, Communications and Computers, CONIELECOMP 2012, Universidad de las Américas, Cholula Puebla, México, Feb 27-29, IEEE Press, 2012 (4 pages)
7. [Estrada E, Nazeran H, Sierra G, Ebrahimi F, Setarehdan K](#). "Wavelet-based EEG denoising for automatic sleep stage classification," In Proceedings of the 21<sup>st</sup> International Conference of Electronics, Communications and Computers, CONIELECOMP 2011, Universidad de las Américas, Cholula Puebla, Méxicopp. 295-298, 2011.
8. **Nazeran H**, Haltiwanger, E "Nanoscale Wearable Devices Reduce Quantitative and Qualitative Measures of Neuromuscular Pain," 27<sup>th</sup> Southern Biomedical Engineering Conference (SBEC) 2011, University of Texas at Arlington, April 29-May 1, International Journal of Medical Implants and Devices, Jafar Vossoughi editor, Vol 5, No 2, abstract 103, 2011 (3 pages)
9. [Franco M, Nazeran H, Reyes I, Amanipour R, Haltiwanger, E](#) "Wireless Photoplethysmography Device for Heart Rate Variability Signal Acquisition and Analysis," 27<sup>th</sup> Southern Biomedical Engineering Conference (SBEC) 2011, University of Texas at Arlington, April 29-May 1, International Journal of Medical Implants and Devices, Jafar Vossoughi editor, Vol 5, No 2, abstract 54, 2011 (3 pages)
10. [Amanipour R, Nazeran H, Franco M, Reyes I, Haltiwanger, E](#) "A Pilot Investigation into the Effects of Blood Glucose Levels on Specific Features of HRV Signal in Persons with Diabetes" 27<sup>th</sup> Southern Biomedical Engineering Conference (SBEC) 2011, University of Texas at Arlington, April 29-May 1, International Journal of Medical Implants and Devices, Jafar Vossoughi editor, Vol 5, No 2, abstract 94, 2011 (3 pages)
11. [Ebrahimi F, Setaredan K, Estrada E, Nazeran H](#) "Automatic Sleep Staging by Fuzzy Classifier Using a Pi-Type Membership Function and Product Reasoning Rule," 27<sup>th</sup> Southern Biomedical



- Engineering Conference (SBEC) 2011, University of Texas at Arlington, April 29-May 1, International Journal of Medical Implants and Devices, Jafar Vossoughi editor, Vol 5, No 2, abstract 116, 2011 (3 pages)
12. Carlos Ramos, **Nazeran H**, Nazila Hafezi, Michael Goldman “Diagnostic Utility of a Reduced IOS-based Mead’s Model of the Human Respiratory System Impedance in Health and Disease,” 27<sup>th</sup> Southern Biomedical Engineering Conference (SBEC) 2011, University of Texas at Arlington, April 29-May 1, International Journal of Medical Implants and Devices, Jafar Vossoughi editor, Vol 5, No 2, abstract 122a, 2011 (3 pages)
  13. **Nazeran H**, Carlos Ramos, Erika Meraz, Nazila Hafezi, Per Gustafsson, and Michael Goldman “IOS-based Models of Human Respiratory Impedance Tracks Small Airway Function in Health and Disease,” 27<sup>th</sup> Southern Biomedical Engineering Conference (SBEC) 2011, University of Texas at Arlington, April 29-May 1, International Journal of Medical Implants and Devices, Jafar Vossoughi editor, Vol 2, No 2, abstract 122b, 2011 (3 pages)
  14. Estrada E, Sierra G, Robergs R, **Nazeran H**, “Muscle Fatigue Assessment during the Wingate Test Using Piezoresistive Sensors,” 27<sup>th</sup> Southern Biomedical Engineering Conference (SBEC) 2011, University of Texas at Arlington, April 29-May 1, International Journal of Medical Implants and Devices, Jafar Vossoughi editor, Vol 2, No 5, abstract 123a, 2011 (3 pages)
  15. Estrada E, **Nazeran H**, Ramirez G “Smoothing EEG and HRV Features Improves ANN-based Performance in Automatic Sleep Stage Classification,” 27<sup>th</sup> Southern Biomedical Engineering Conference (SBEC) 2011, University of Texas at Arlington, April 29-May 1, International Journal of Medical Implants and Devices, Jafar Vossoughi editor, Vol 5, No 2, abstract 123b, 2011 (3 pages)
  16. Hafezi N, **Nazeran H** “An Integrated Software Package to Classify Small Airway Dysfunction in Pulmonary System,” 27<sup>th</sup> Southern Biomedical Engineering Conference (SBEC) 2011, University of Texas at Arlington, April 29-May 1, International Journal of Medical Implants and Devices, Jafar Vossoughi editor, Vol 5, No 2, abstract 129, 2011 (3 pages)
  17. Ramos C, **Nazeran H**, Goldman M D, Diong B “Circuit Analysis Justifies a Reduced Mead’s Model of the Human Respiratory Impedance for Impulse Oscillometry Data,” 32<sup>nd</sup> Annual International Conference of the IEEE EMBS Buenos Aires, Argentina, pp 548-552, August 2010
  18. Goldman M D, **Nazeran H**, Ramos C, Toon E, Oates K, Bilton D, Meraz E, Hafezi N, Diong B “Electrical Circuit Models of the Human Respiratory System Reflect Small Airway Impairment Measured by Impulse Oscillation (IOS),” 32<sup>nd</sup> Annual International Conference of the IEEE EMBS Buenos Aires, Argentina, , pp 2467-2472, August 2010
  19. Estrada E, **Nazeran H** “EEG and HRV Signal Features for Automatic Sleep Staging and Apnea Detection,” 20<sup>th</sup> IEEE International Conference on Electronics Communications and Computers (CONIELECOMP), Cholula, Puebla, Mexico, pp 142-147, Feb 2010.
  20. Hernandez C, Estrada E, Garcia L, Sierra G, **Nazeran H** “Traditional SEMG fatigue indicators applied to a real-world sport functional activity: Roundhouse kick,” 20<sup>th</sup> IEEE International Conference on Electronics Communications and Computers (CONIELECOMP 2010), Cholula, Puebla, Mexico, 2010
  21. Sierra Muñiz G, Robergs R, Estrada E, **Nazeran H** “Muscle fatigue assessment during the wingate test using piezoresistive sensors,” 19<sup>th</sup> IEEE International Conference on Electronics Communications and Computers (CONIELECOMP 2010), Cholula, Puebla, Mexico, 2009
  22. Estrada H, **Nazeran H**, Ochoa H “HRV and EEG Signal Features for Computer-Aided Detection of Sleep Apnea,” IFMBE Proceedings, Vol 24, pp. 265-266, 2009
  23. Hafezi N, **Nazeran H**, Meraz E, Nava P, Goldman D “An Integrated Software Package to Classify Human Respiratory Diseases,” IFMBE Proceedings. Vol 24, pp. 317-318, 2009
  24. Meraz E, **Nazeran H**, Goldman D, Diong B “Respiratory System Model Parameters Track Changes in Lung Function after Bronchodilation,” IFMBE Proceedings. Vol 24, pp. 319-322, 2009
  25. Diong B, Grainger J, Goldman M, **Nazeran H** “A comparison of linear respiratory system models based on parameter estimates from PRN forced oscillation data.” Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society, pp. 2879-82, 2009

26. Estrada E, **Nazeran H**, Ebrahimi F, Mikaeili M, "EEG Signal Features for Computer-Aided Sleep Stage Detection," Proceedings of the 4<sup>th</sup> International IEEE EMBS Conference on Neural Engineering, Antalya, Turkey, pp. 669-672, 2009
27. Gonzalez V, Eric Freudenthal E, **Nazeran H** "Work in progress: Wireless Biomedical Data Collection – A Laboratory to Prepare Students for Emerging Engineering Areas," Proc. ASEE (American Society for Engineering Education) Annual Conference and Exposition, June 2009 (9 pages)
28. Estrada E, **Nazeran H**, Ebrahimi F, Mikaeili M, "Symmetric Itakura Distance as an EEG Signal Feature for Sleep Depth Determination," Proceedings of the ASME 2009 Summer Bioengineering Conference (SBC2009), Lake Tahoe, 2009.
29. Ebrahimi F, Mikaeili M, Estrada E, **Nazeran H** "Automatic sleep stage classification based on EEG signals by using neural networks and wavelet packet coefficients," Proc. IEEE Engineering Medicine Biology Soc., pp. 1151-1154, 2008
30. Meraz E, **Nazeran H**, Goldman D, Nava P, Diong B "Impulse Oscillometric features of lung function: Towards computer-aided classification of respiratory diseases in children," Proc. IEEE Engineering Medicine Biology Soc., pp. 2443-2446, 2008
31. **Nazeran H**, Nava P, Maduko E, Meraz E, Diong B, Goldman M "Enhancing the Automated Diagnostic Capabilities of Impulse Oscillometry in Asthmatic Children", Biomedical Engineering Recent Developments, **Homer Nazeran**, Michael Goldman, Richard Schoephoerster, Editors: pp 77-80, 2008
32. Goldman M, Menendez R, Diong B, **Nazeran H** "Impulse Oscillometry Sensitively Measures Long and Short Acting Bronchodilator in Asthmatic Children", Biomedical Engineering Recent Developments, **Homer Nazeran**, Michael Goldman, Richard Schoephoerster, Editors: pp 73-76, 2008
33. Nava P, **Nazeran H**, Maduko E, Meraz E, Sarkodie-Gyan T, Goldman M "A Co-Active Neuro-fuzzy Inference System for Classification of Asthma", Biomedical Engineering Recent Developments, **Homer Nazeran**, Michael Goldman, Richard Schoephoerster, Editors: pp 81-84, 2008
34. Meraz E, **Nazeran H**, Diong B, Nava P, Goldman M, "Modeling Human Respiratory Impedance in Normal Children 5 to 17 Years Old", Biomedical Engineering Recent Developments, **Homer Nazeran**, Michael Goldman, Richard Schoephoerster, Editors: pp 85-86, 2008
35. Meraz E, **Nazeran H**, Diong B, Nava P, Goldman M, "Modeling Human Respiratory Impedance in Hispanic Asthmatic Children 5 to 17 Years Old", Biomedical Engineering Recent Developments, **Homer Nazeran**, Michael Goldman, Richard Schoephoerster, Editors: pp 87-90, 2008
36. Estrada E, **Nazeran H**, Behbehani K, Burk JR, Lucas EA, "Correlation Dimension Analysis of Simultaneous EEG and ECG Signals for Automated Sleep Stage Classification", Biomedical Engineering Recent Developments, **Homer Nazeran**, Michael Goldman, Richard Schoephoerster, Editors: pp 15-20, 2008
37. Ebrahimi F, Mikaeili M, Estrada E, **Nazeran H**, "Feature Extraction and Classification of Sleep Stages from ECG Signals by Advanced Digital Signal Processing Techniques", Biomedical Engineering Recent Developments, **Homer Nazeran**, Michael Goldman, Richard Schoephoerster, Editors: pp 23-24 , 2008
38. Ebrahimi F, Mikaeili M, Estrada E, **Nazeran H**, "Computer-aided Sleep Staging from EEG Signals Using Wavelet Packet Coefficients and Neural Networks", Biomedical Engineering Recent Developments, **Homer Nazeran**, Michael Goldman, Richard Schoephoerster, Editors: pp 55-56, 2008
39. **Nazeran H**, "Heart Rate Variability Signal Parameters Quantify Skin cooling Effect of Energy Patches During Rest and Exercise in Young Healthy Individuals", Biomedical Engineering Recent Developments, Editors: Otto Wilson, Binh Tran, Jafar Vossoughi, pp 13-19, 2007
40. **Nazeran H**, Bolanos M, Haltiwanger H, Vella C "Heart Rate Variability Signal Features Quantify Normal Ranges of Blood Glucose Levels in Normal Healthy Individuals", Biomedical Engineering Recent Developments, Editors: Otto Wilson, Binh Tran, Jafar Vossoughi, pp 26-29, 2007
41. Meraz E, **Nazeran H**, Diong B, Goldman M "Modeling Human Respiratory Impedance in Anglo Asthmatic Children", Biomedical Engineering Recent Developments, Editors: Otto Wilson, Binh Tran, Jafar Vossoughi, pp 108-113, 2007
42. Meraz E, Diong B, **Nazeran H**, Goldman M "Airflow Perturbation Analyses Using Simplified Models Can Assess Upper Airway Shunt During Resting Breathing", Biomedical Engineering Recent Developments, Editors: Otto Wilson, Binh Tran, Jafar Vossoughi, pp 156-158, 2007
43. Estrada E, **Nazeran H**, Burk JR, Lucas EA, Behbehani K "Simultaneous HRV and EEG Signal Analysis to Detect Sleep Disordered Breathing in Adults", Biomedical Engineering Recent Developments, Editors: Otto Wilson, Binh Tran, Jafar Vossoughi, pp 146-150, 2007
44. Meraz E, **Nazeran H**, Diong B, Menendez R, Ortiz G, Goldman M "Modeling Human Respiratory Impedance in Hispanic Asthmatic Children", Proceedings of the IEEE-Engineering in Medicine and

- Biology Society (**EMBS**), 29<sup>th</sup> Annual International Conference, Lyon, France, pp. 4251-4254, Aug 23- 26, 2007
45. Nguyen T, Diong B, **Nazeran H**, Goldman M, “A Study of IOS Data Using Two Mead-related Models of Respiratory Impedance?”, Proceedings of the IEEE-Engineering in Medicine and Biology Society (**EMBS**), 29<sup>th</sup> Annual International Conference, Lyon, France, pp. 1078-1081, Aug 23- 27, 2007
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  47. **Nazeran H**, Krishnam R, Chatlapalli M, Pamula Y, Haltiwanger E, Cabrera S “Nonlinear Dynamics Analysis of Heart Rate Variability Signals to Detect Sleep Disordered Breathing in Children”, Proceedings of the IEEE-Engineering in Medicine and Biology Society (**EMBS**), 28<sup>th</sup> Annual International Conference, pp. 3873-3978, New York City, USA, Aug 30- Sep 3, 2006
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101. Abolfathi P, **Nazeran H**, Turker K "Simulation of Mastication Using a Software Controlled Dynamic Bite Bar Apparatus" Proceedings IEEE/EMBS Conference, Victorian Chapter, Monash University, Australia, pp 76-79, Feb 22-23, 1999 (**Winner of Institution of Engineers Best Student Presentation Award**)
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104. **Nazeran H**, Behbehani K, Yen F C, Ray P "Reconstruction of Respiratory Patterns from Electrocardiographic Signals" Proceedings of the 2nd International Conference on Bioelectromagnetism, Melbourne, Australia, pp 183-184, 1998
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107. Hosseini H, **Nazeran H** "Processing of ECG Signals for Arrhythmia Classification" Proceedings of Physics, Engineering, Radiation, Medicine & Information Technology Conference (PERM-IT '97), 13C-2, Adelaide, Australia
108. Randhawa S, **Nazeran H**, Brookes S, Costa M "A Neuro-mechanical Model of Intestinal Motor Activity" Proceedings of Physics, Engineering, Radiation, Medicine & Information Technology Conference (PERM-IT '97), 14B-4, Adelaide, Australia (**Winner of the Young Biomedical Engineer's Award**)
109. Richter A, **Nazeran H**, Crockett A "Computer Aided Diagnosis of Pulmonary Diseases Using Impulse Oscillometry" Proceedings of Physics, Engineering, Radiation, Medicine & Information Technology Conference (PERM-IT '97), 13C-4, Adelaide, Australia (**Winner of Electricity Trust of South Australia Award**)
110. Macdonald S, **Nazeran H** "Automated Detection of Myocardial Ischaemia by ECG /ST Segment Analysis" Proceedings of Physics, Engineering, Radiation, Medicine & Information Technology Conference (PERM-IT '97), 13C-3, Adelaide, Australia (**Winner of the Best Student Presentation Award**)

111. Devasagayam J, Nazeran H, Melley D, Poole M, Cooter R "Impedance Monitoring of Muscle Perfusion in Flap Transfers" Proceedings of Physics, Engineering, Radiation, Medicine & Information Technology Conference (PERM-IT '97), 13C-1, Adelaide, Australia
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119. Byrnes D, Costa M, Nazeran H, Waterman S, Brookes S "A Biomechanical Model of Intestinal Peristalsis", 19th Conference of the Canadian Medical & Biological Engineering Society, May 13-15, Ottawa, Canada, 1993
120. Nazeran H, Hagler H, Burton K, Behbehani K "Fluorescent Microspectro-fluorometry and Digital Imaging of  $[Ca^{+2}]_i$  Transients: New Windows to the Dynamics of Cardiac Cellular Function", Seventh International Conference on Biomedical Engineering, Dec 2-4, Singapore, 1992
121. Downing A, Nazeran H "The Design of an Undergraduate Biomedical Engineering Program", Pacific Region Conference on Electrical Engineering Education, Dec. 14-16, Clarendon, Adelaide, Australia, 1992 (Invited Paper)
122. Nazeran H, Hagler H, Burton K P, Behbehani K "Computer Modeling of Cytosolic Ionic Calcium Transients in Isolated Ventricular Myocytes during Contraction and Relaxation", First International Conference on Computer Applications in Science, Technology and Medicine in Iran, Dec 26-28, Esfahan, Iran, 1991 (Invited Paper)
123. Nazeran H, Hagler H, Burton K, Behbehani K (1990) "Modeling Intracellular Ionic Calcium Transients in Isolated Myocytes During Contraction and Relaxation" 9th Southern Biomedical Engineering Conference, Nov. 17-18, Miami, USA (winner of research excellence award)
124. Nazeran H, Von Maltzahn W, Kondraske G "Computer-Assisted Calibration of Medical Instruments" IEEE/Eighth Annual Conference in Medicine and Biology, Ft Worth, pp 1587-1590, 1986

### Invited papers presented or invited lectures

1. Nazeran H, Almas A, Behbehani K "A fuzzy Inference System for Detection of Obstructive Sleep Apnea" Proceedings of the 23rd IEEE/EMBS International Conference, Istanbul Turkey, Oct. 25-28, 2001 (Invited Paper)
2. Downing A, Nazeran H "The Design of an Undergraduate Biomedical Engineering Degree Program", Proceedings Regional Conference on Biomedical Electronics (BME-94), Paper V-1, Bandung, Indonesia, 27-29 April, 1994 (Invited Presentation)
3. Downing A, Nazeran H, Robson J "The Design of an Undergraduate Biomedical Engineering Diploma Program", Proceedings Regional Conference on Biomedical Electronics (BME-94), Paper V-2, Bandung, Indonesia, 27-29 April, 1994 (Invited Presentation)
4. Nazeran H, Hagler H, Burton K, Behbehani K "Fluorescent Microspectrofluorometry and Digital Imaging of  $[Ca^{+2}]_i$  Transients: New Windows to the Dynamics of Cardiac Cellular Function", Seventh International Conference on Biomedical Engineering, Singapore, Dec 2-4, 1992 (Invited Presentation)



5. **Nazeran H**, Hagler H, Burton K, Behbehani K "Computer Modeling of Cytosolic Ionic Calcium Transients in Isolated Ventricular Myocytes during Contraction and Relaxation", First International Conference on Computer Applications in Science, Technology and Medicine in Iran, Esfahan, Iran, Dec 26-28, 1991. (Invited Paper)

## Abstracts/Workshops

1. Haltiwanger E, **Nazeran H** "Complexity Science in Education", Sun Conference, UTEP, 2009. <http://cetalweb.utep.edu/sun/index.php/past-conferences/sun-conference-2009>
2. Meraz E, Goldman D, Gustafsson P, Hafezi N, **Nazeran H**, Diong B "Forced oscillation (IOS) measures in airway-impaired and normal children over 2 years," European Respiratory Society Annual Congress, Vienna, 2009
3. Meraz E, Goldman M D, **Nazeran H**, Ibarra J, "Normal Impulse Oscillometry (IOS) Lung Function Parameters In Adolescents Residing In El Paso, Tx.", Annals of Epidemiology, Vol 18, Issue 9, p.724, 2008
4. Estrada E, Ramirez G, **Nazeran H** "EEG and EOG: Two Important Switches in Sleep Stage Classification", Proceedings of the XXVII Congreso Internacional De Ingeniera Electronica, Electro 2005, Chihuahua, Mexico, Oct. 5-7, 2005.
5. Haltiwanger E, **Nazeran H** "Enhancing Discipline Specific Skills in Real Environments", Sun Conference, UTEP, 2006.
6. Haltiwanger E, **Nazeran H** "Application of Non-linear Dynamics in Education: Development of Life-Long Learning Attitudes in the Classroom", Sun Conference, UTEP, 2005.
7. Haltiwanger E, **Nazeran H** "Application of Complexity Theory to Development of Critical Thinking in the Classroom", 2004 Faculty Development Conference, Las Cruces, New Mexico, Sept30-Oct 2, 2004.
8. **Nazeran H**, Haltiwanger E "The Innovative University: A Changed Mission", 2004 Faculty Development Conference, Las Cruces, New Mexico, Sept30-Oct 2, 2004.
9. Estrada E, Barragan J, **Nazeran H**, Nava P "Classification of Sleep Stages Using Features from EEG Signal", Proceedings of the XXVI Congreso Internacional De Ingeniera Electronica, Electro 2004, Chihuahua, Mexico, Oct. 26-30, 2004.
10. Jaberzadeh S, **Nazeran H**, Warden-flood A, Scutter S "Instrumentation for recording mechanically evoked pain, EMG, resistive torque and range of motion responses during passive diagnostic tests", Proceedings of the International Federation of Orthopedic Manipulative Therapists (IFOMT), Perth, Australia, Nov. 6-10, 2000
11. Jaberzadeh S, Scutter S, Warden-flood A, **Nazeran H** "The effects of chronic median nerve injury on excitability of the motor neuron pool", Proceedings of the International Federation of Orthopedic Manipulative Therapists (IFOMT), Perth, Australia, Nov. 6-10, 2000
12. Jaberzadeh S, Warden-flood A, Scutter S, **Nazeran H** "Carpal tunnel syndrome and median nerve mechanosensitivity", Proceedings of the International Federation of Orthopedic Manipulative Therapists (IFOMT), Perth, Australia, Nov. 6-10, 2000
13. Jaberzadeh S, **Nazeran H**, Scutter S, Warden-flood A "Passive human movement analysis: an instrumentation perspective for mechanically evoked EMG, resistive torque and range of motion responses" Proceedings of the Sixth International Physiotherapy Congress, Canberra, Australia, May 24-27, 2000
14. Jaberzadeh S, Scutter S, **Nazeran H**, Warden-flood A "Mechanically evoked motor responses during elbow extension in the upper limb tension test position" Proceedings of the Sixth International Physiotherapy Congress, Canberra, May 24-27, 2000
15. Hosseini H, **Nazeran H** "Implementation of Cardiac Arrhythmia Detection Algorithms Using MATLAB", Proceedings of the 1996 Australian MATLAB Conference, Melbourne, Australia, pp 7-12, Jan. 24-25, 1996
16. Randhawa S, **Nazeran H**, Brookes S, Costa M "Computer Simulation of Intestinal Motor Activity Using MATLAB", Proceedings of the 1996 Australian MATLAB Conference, pp 1-6, Melbourne, Australia, Jan. 24-25, 1996.

## Books

1. Meraz E, **Nazeran, H.** (2013). Impulse Oscillometry System and Respiratory Models Track Asthma In Hispanic and Anglo Children. Saarbrucken: Lambert Academic Publishing. [www.amazon.com/Impulse-Oscillometric-Features-Respiratory-Models/dp/365926623X](http://www.amazon.com/Impulse-Oscillometric-Features-Respiratory-Models/dp/365926623X)

2. **Nazeran H**, M Goldman, Schoepfoester R: Editors "Biomedical Engineering: Recent Developments", Proceedings of the 24<sup>th</sup> Southern Biomedical Engineering Conference, Medical and Engineering Publishers Inc. April 2008.

## Chapters in Books

1. **Nazeran H**, "Phonocardiography: Recording of Heart Sounds and Murmurs", Handbook of Physiological Measurements, edited by John G. Webster, Chapter 5, pp 101- 121, Taylor and Francis, London, 2014.
2. **Meraz E, Nazeran H**, Ramos C, Rodriguez L, Rascon M, Castillo, N " Impulse Oscillometric Features and Respiratory System Models Track Small Airway Function in Children", in "Practical Applications in Biomedical Engineering," edited by Adriano Andrade, Adriano Alves Pereira, Eduardo Naves and Alcimar Soares, pp. 103-140. Intechopen, DOI: 10.5772/52579, 2013  
<http://www.intechopen.com/books/practical-applications-in-biomedical-engineering>
3. **Nazeran H**, Y Pamula, Behbehani K "*Heart Rate Variability: Sleep Disordered Breathing*", in "Wiley Encyclopedia of Biomedical Engineering" Metin Akay (Ed.), pp 1-17, Wiley and Sons, New York, USA, 2006
4. **Nazeran H** "*Electrocardiography, Computers In*" in "Encyclopedia of Medical Devices and Instrumentation" John G Webster (Ed.), 2<sup>nd</sup> edition, pp 34-53, Wiley and Sons, New York, USA, 2006
5. **Nazeran H** and Behbehani K "*Neural Networks in Processing and Analysis of Biomedical Signals*" in "*Nonlinear Biomedical Signal Processing*" M Akay (Ed.), Vol. 1, pp 69-97, IEEE Press, Piscataway, USA, 2000

## RESEARCH

### Funded

1. **Investigators:** Aguilera, Aley, Boland, Collins, Echegoyen, Grineski, Morera, **Nazeran**

**Funding Agency:** National Institutes of Health

**Title of Project:** BUILDing SCHOLARS

The NIH Building Infrastructure Leading to Diversity (BUILD) Initiative (U54)

**Project Dates:** 09/01/2014 to 08/31/2019.

**Amount:** \$22,600,000

2. **Investigators:** Aguilera, Aley, Boland, Collins, Echegoyen, Grineski, Morera, **Nazeran**

**Funding Agency:** National Institutes of Health

**Title of Project:** Building Infrastructure Leading to Diversity (Planning Grant)

**Project Dates:** 09/01/2013 to 02/28/2014.

**Amount:** \$225,000

3. **Investigators:** Homer **Nazeran**

**Funding Agency:** UT Transform

**Title of Project:** Morpheus: Smartphone Evidence-based Sleep Monitor and Apnea Detector

**Project Dates:** 09/01/2013 to 8/31/2014.

**Amount:** \$10,000

4. **Investigators:** Homer **Nazeran**, Sergio Cabrera

**Funding Agency:** UT Transform

**Title of Project:** Iliad: Smart-Phone Evidence-based Stress Level Monitor and Mental Fatigue Detector

**Project Dates:** 09/01/2013 to 8/31/2014.

**Amount:** \$10,000

5. **Investigators:** Homer **Nazeran**, Edson Estrada, Jose-Ayala

**Funding Agency:** Loya Mochen Innovation Fund

**Title of Project:** Smartphone Evidence-based Sleep Monitor and Apnea Detector

**Project Dates:** 09/01/2011 to 8/31/2012.

**Amount:** \$50,000

**6. Investigators:** EPCC PI: Maria Alvarez, **UTEP PI: Homer Nazeran**, EPISD PI: Dianne Jones  
**Funding Agency:** Department of Education, Minority Science and Engineering Improvement Program,  
**Title of Project:** *A 3-Step Integrated Bridge Program from Early College High School to Bioengineering Education*

**Project Dates:** 09/01/2008 to 8/31/2011.

**Amount:** \$800,000

**7. Investigators:** Carlos Ferregut, Ann Gates, Soheil Nazarian, **Homer Nazeran**, Barry Benedict

**Funding Agency:** National Science Foundation

**Title of Project:** *Building Partnership Pathways to Address Engineering Grand Challenges*

**Project Dates:** 09/01/2008 to 8/31/2010.

**Amount:** \$180,000

**8. Investigator: Homer Nazeran**

**Funding Agency:** National Science Foundation

**Title of Project:** 24<sup>th</sup> Southern Biomedical Engineering Conference

**Project Dates:** 05/15/08 - 8/31/08

**Amount:** \$11, 920

**9. Investigator: Homer Nazeran**

**Funding Agency:** Lifewave LLC

**Title of Project:** **A Double-blind Placebo-Controlled Investigation to Evaluate the Quantitative and Qualitative Effects of LifeWave IceWave Patches on Pain Reduction**

**Project Dates:** 2/1/2010 to 7/31/2011

**Amount:** \$97,995

**10. Investigator: Homer Nazeran**

**Funding Agency:** Texas STAR Grant to **UTEP Dean of Engineering**

**Title of Project:** Establishment of the Laboratory for Pervasive Health Technology and Chronic Diseases

**Project Dates:** 01/04/2008 to 09/31/2008

**Amount:** \$128,206

**11. Investigators:** Carlos Ferregut, **Homer Nazeran**

**Funding Agency:** US Department of Education

**Title of Project:** North American Mobility in Higher Education

**Project Dates:** 09/01/2007 to 08/31/2013

**Amount:** \$87,500

**12. Investigators:** Nicholas Pingitore, Maria Amaya, **Homer Nazeran (PI-Pilot 1)**, Larry Murr, Wen Wai Li

**Funding Agency:** National Institutes of Health (NIH), NIEHS

**Title of Project:** UTEP-UNM HSC ARCH Program On Border Asthma

**Title of Pilot 1 Project:** *Impulse Oscillometric Evaluation of the Effect of Air Quality on Respiratory Function in Normal and Asthmatic Anglo and Hispanic Children on the US-Mexico Border*

**Project Dates:** 7/01/05 - 6/30/08

**Amount:** \$5,117,244

**13. Investigators:** **Homer Nazeran**, Pat Nava, Bill Diong

**Funding Agency:** Tobacco Settlement Fund

**Title of Project:** *Computer-based Instrumentation for Processing, Analysis and Classification of Phononeumograms: Towards Automatic Early Detection of Asthma in Infants*

**Project Dates:** 2004

**Amount:** \$24,650

**14. Investigators:** Pat Nava, **Homer Nazeran**

**Funding Agency:** Tobacco Settlement Fund

**Title of Project:** *Model-based Characterization and Classification of Respiratory Diseases Prevalent Among US-Mexico Border Residents*

**Project Dates:** 2003

**Amount:** \$20,050

**15. Investigators:** **Homer Nazeran**

**Funding Agency:** Public University Fund

**Title of Project:** *Establishment of the Biomedical Instrumentation and Signal Processing Teaching and Research Laboratory in ECE-UTEP*

**Project Dates:** 2003

**Amount:** \$41,500

### Non-Funded

**1. Investigators:** **Homer Nazeran**, Vladik Kreinovich

**Funding Agency:** Google

**Title of Project:** From Ubiquitous Monitoring to Ubiquitous Automatic Control

**Project Dates:** 09/01/2012 to 08/31/2013

**Amount Requested:** \$47,208

**2. Investigator:** **Homer Nazeran**

**Funding Agency:** National Institutes of Health (NIH)

**Title of Project:** Comparative Effectiveness of Impulse Oscillometry and Spirometry in Objective Assessment of Small Airway Impairment and Asthma

**Project Dates:** 1/20/2013 to 12/31/2017

**Amount Requested:** \$1,439,140

**3. Investigators:** Felipe Castro (Psychology UTEP), **Homer Nazeran**

**Funding Agency:** Patient-Centered Outcomes Research Institute (PCORI)

**Title of Project:** *An Integrated Patient-Centered Instrument to Promote Adherence Behaviors*

**Project Dates:** 06/01/2012 to 05/31/2014.

**Amount Requested:** \$640,914

**4. Investigators:** Martine Ceberio, **Homer Nazeran**, Peter Golding, EPCC Faculty

**Funding Agency:** US Department of Education (DOE)

**Title of Project:** *A Partnership Model for Increasing Participation in Computer Science and Engineering through Curriculum Alignment, ARG Model-based Pedagogy, and Research Engagement Emphasizing Biomedical Engineering Applications*

**Project Dates:** 01/01/2012 to 8/31/2015

**Amount Requested:** \$770,325

**5. Investigator:** **Homer Nazeran**

**Funding Agency:** National Institutes of Health (NIH)

**Title of Project:** *Comparative Effectiveness of Oscillometry and Spirometry for Asthma and Small Airway Impairment Screening in Hispanic children*



**Project Dates:** 09/01/2012 to 08/31/2017

**Amount Requested:** \$999,999

**6. Investigator: Homer Nazeran**

**Funding Agency:** National Institutes of Health (NIH)

**Title of Project:** Use of Oscillometry to Improve El Paso TX Hispanic Asthmatic Children's Outcomes

**Project Dates:** 9/1/2010 to 8/31/2013

**Amount Requested:** \$967,800

**7. Investigator: Michael Goldman, Homer Nazeran**

**Funding Agency:** National Institutes of Health (NIH)

**Title of Project:** Effectiveness of Oscillometry as a Screening Test for Severity of Pulmonary Invasiveness

**Project Dates:** 10/01/2009 to 09/30/2011

**Amount Requested:** \$999,999

**8. Investigators: Richard Schoepfoerster, Malcom Cooke, Homer Nazeran**

**Funding Agency:** The University of Texas System (DOE)

**Title of Project:** *A Multi-Disciplinary, Experiential-Based BME Graduate Bridging Program*

**Project Dates:** 1/1/2009 to 12/31/2011

**Amount Requested:** \$671,880

**9. Investigators: Michael Goldman, Jorge Ibarra, Homer Nazeran**

**Funding Agency:** Merck

**Title of Project:** *Lung Assessment in School Children with Small Airway Impairment (SAI) in El Paso, TX*

**Project Dates:** 01/01/2009 to 12/31/2009

**Amount Requested:** \$75,000

**10. Investigators: Mark Spong (University of Illinois, Urbana Champaign), UTEP PI: Patricia Nava, Homer Nazeran, Virgilio Gonzalez, Emily Haltiwanger**

**Funding Agency:** National Science Foundation, Engineering Research Center

**Title of Project:** *Trust Health Technology Initiative*

**Project Dates:** 1/1/2008 to 12/31/2014

**Amount Requested:** \$18,000,000

**11. Investigators: Homer Nazeran, Michael Goldman, Emily Haltiwanger, Victor Cardenas**

**Funding Agency:** Department of Defense and UTEP

**Title of Project:** *Dynamic Mapping of Influenza Activity in Young Adults with and without Type 2 Diabetes in the El Paso Del Norte Region Using the Geospatial Service Center (GSC) at UTEP*

**Project Dates:** 1/01/2007 to 8/31/2007

**Amount Requested:** \$69,990

**12. Investigators: Michael Goldman, Homer Nazeran, Roger Menendez**

**Funding Agency:** Community-based Pharmaceutical Companies

**Title of Project:** *Normative Impulse Oscillometric Measures of Lung Function in Non-Asthmatic White and Hispanic Children (5-15 Years Old)*

**Project Dates:** 1/01/2007 to 12/31/2008

**Amount Requested:** \$120,000

**13. Investigators: Michael Goldman, Homer Nazeran, Emily Haltiwanger**

**Funding Agency:** Glaxo Smith Kline (GSK)

**Title of Project:** *Effect of Avandia on Lung Function in Patients with Type 2 Diabetes*

**Project Dates:** 06/01/2007 to 5/31/2008

**Amount Requested:** \$177,818

**14. Investigators:** Leslie Schulz (Dean Health Sciences), Jorge Ibarra, (**Homer Nazeran**, Key Personnel)

**Funding Agency:** National Heart Lung and Blood Institute, RFP-NHLBI-HC-06-02

**Title of Project:** *Hispanic Community Health Study Filed-Center*

**Project Dates:** 2006 to 2014

**Amount Requested:** \$10,544,712

**15. Investigators:** Barry Kurtz, Rahman Tashakori (Appalachian University), **Homer Nazeran** (Co-PI)

**Funding Agency:** National Science Foundation

**Title of Project:** *A Consortium to Promote Distributed Computing*

**Project Dates:** 2006 to 2009

**Amount Requested:** \$499,750

**16. Investigator:** **Homer Nazeran**

**Funding Agency:** National Science Foundation

**Title of Project:** *An Integrated Biomedical Engineering Teaching Laboratory for Modern Undergraduate Electrical Engineering Education*

**Project Dates:** 2005 to 2008

**Amount Requested:** \$199,999

**17. Investigators:** Virgilio Gonzalez, **Homer Nazeran**

**Funding Agency:** National Science Foundation

**Title of Project:** *Development of an Undergraduate Generalized Instrumentation Research*

**Project Dates:** 2004 to 2007

**Amount Requested:** \$415,714

**18. Investigators:** Rahman Tashakori (Appalachian University), **Homer Nazeran** (UTEP, Co-PI)

**Funding Agency:** National Science Foundation

**Title of Project:** *Computing and Visualization in Engineering and Science*

**Project Dates:** 2003 to 2006

**Amount Requested:** \$599,216

**19. Investigators:** **Homer Nazeran**, Pat Nava, Bill Diong

**Funding Agency:** Center for Border Health Research

**Title of Project:** *Model-based Characterization and Computer-Aided Classification of Respiratory Diseases Prevalent Among Children in the US-Mexico Border*

**Project Dates:** 2003 to 2006

**Amount Requested:** \$74,994

**20. Investigators:** Jorge Lopez (Physics UTEP), **Homer Nazeran**

**Funding Agency:** National Science Foundation

**Title of Project:** *CREST Center for Computational Science and Engineering*

**Project Dates:** 2003 to 2006

**Amount Requested:** \$4,918,105

# SERVICE AND HONORS

## Professional Honors, Prizes, Fellowships

### Department

Faculty Adviser for HKN Electrical Engineering Honor Society – UTEP 2003 - 2005

## UTEP Committees Served

### Department

Member of Signal Processing and Communications Committee

Electronics Fields and Devices Committee

Member of Senior Year Projects Committee

Member of ECE Awards Committee

Member of Tenure and Promotion Committee

Member of Circuits and Systems Committee

### College

Member of Chair Search Committee for ECE Chair

Member of Search Committee for Senior Faculty in Biomedical Engineering Track

Chair of Curriculum Development Committee for “MS and PhD Programs in Biomedical Engineering”

### University

Member of Faculty Welfare Committee

Member of Teaching Effectiveness and Development Committee

Member of Graduate Scholarship Committee

## Membership in Professional Societies

Senior Member, Institute of Electrical and Electronic Engineers (IEEE)

Engineering in Medicine and Biology Society

Signal Processing Society

Biomedical Engineering Society (BMES)

Australian College of Physical Scientists and Engineers in Medicine

Australian Neuroscience Society

New York Academy of Sciences

# Leadership Role

## Curriculum Development

Homer Nazeran: Preparation of the “M.S. and Ph.D. in Biomedical Engineering” proposal. Submitted to the Texas Higher Education Coordinating Board (Substantive Degree Program Request) December 2008.

## Conference Chairmanship

*Homer Nazeran, Michael Goldman, Richard Schoephoerster, 24<sup>th</sup> Southern Biomedical Engineering Conference, University of Texas at El Paso, April 18-20, 2008*

## Conference Session Chairmanship

1. “Nanotechnology” Session, 26th Southern Biomedical Engineering Conference, College Park, Maryland, April 30-May 2, 2010.
2. “Instrumentation, Signals and Systems” Session, 25th Southern Biomedical Engineering Conference, Miami Florida, May 15-17, 2009.
3. “Heart Rate Variability”, 23<sup>rd</sup> Southern Biomedical Engineering Conference, Catholic University of America, Washington DC, April 13-15, 2007.
4. “Cardiovascular Biomechanics”, 23<sup>rd</sup> Southern Biomedical Engineering Conference, Catholic University of America, Washington DC, April 13-15, 2007.
5. “Respiratory Acoustics” Session, 26<sup>th</sup> Annual International Conference, IEEE-EMBS, San Francisco, California, September 1-4, 2004.
6. “Electrocardiography”, 2nd International Conference on Bioelectromagnetism, Melbourne, Australia, February, 1998.

## Industry

1. Served the industry by providing research consultancy and leadership in publishing research results to demonstrate the safety and efficacy of nanoscale organic patches (LifeWave LLC, San Diego, California, USA) that mildly and continuously stimulate acupuncture points to create a variety of short term and long term health and wellness benefits to address chronic conditions. One of these nanodevices is now recognized and registered in France as an effective medical device for drug-free pain management.
2. Provided leadership in research and development of an Integrated Software Package to Classify Asthmatic and Non-Asthmatic Children (To be commercialized by CareFusion GmbH – Company with limited liability- Germany)



## Other Professional Activities and Public Service

### Board Membership

1. Advisory Board member, Webmed Central Online Journal	USA	2012 -
2. Member of International Review Editorial Board, International Journal Biomedical and Clinical Engineering (IJBCE)	India	2011 -
3. Member of Editorial Board, TANG, International Journal of Genuine Traditional Medicine	Korea	2011 -
4. Member of the Board of Directors, El Paso Diabetes Association	El Paso, Texas	2010 - 2013

### Reviewer for Engineering and Medical Journals

1. Journal of Asthma	USA	2012 -
2. Journal of Pediatric Pulmonology	USA	2011 -
3. Biomedical Engineering Online Journal	United Kingdom	2010 -
4. Medical Engineering and Physics	United Kingdom	2010 -
5. Biomedical Signal Processing and Control	United Kingdom	2010 -
6. American Journal of Veterinary Medicine	USA	2009 -
7. American Journal of Physiology	USA	2008 -
8. Journal of Artificial Intelligence in Medicine	Austria	2007 -
9. Proceedings of the IEEE Engineering In Medicine and Biology	International	2005 -
10. Journal IEEE Transactions on Biomedical Engineering	USA	2003 -
11. Journal of Medical & Biological Engineering & Computing	United Kingdom	2002 -
12. Physiological Measurements Journal (IOP)	United Kingdom	2000 -

### External Examiner of Thesis and Dissertations

1. University of New South Wales	Australia	1995 -
2. Multimedia University	Malaysia	2010 -
3. University of Nottingham	United Kingdom	2012 -
4. Deakin University	Australia	2012 -

### Book Reviews

1. John Wiley and Sons Inc Publishers: <i>Fundamentals of Microelectronics</i> :1 <sup>st</sup> Edition, Razavi	2006
2. John Wiley and Sons Inc Publishers: <i>Medical Instrumentation: Application and Design</i> , 3 <sup>rd</sup> Edition, John G Webster, Editor	2003

### Reviewer for Granting Bodies

1. Natural Sciences and Engineering Research Council	Canada	2004 -
2. Reviewer for National Health Medical Research Council	Australia	1994 -