CURRICULUM VITAE

LEON D. IASEMIDIS (JASSEMIDIS)

- Biomedical Engineering, Neurosciences, Neurology, Neurosurgery

Professor, Translational Neuroscience
Head, Brain Dynamics Laboratory
Barrow Neurological Institute (BNI)
Fellow, American Institute of Medical and Biological Engineers (AIMBE)
Fellow, National Academy of Inventors (NAI)
Fellow, Institute of Electrical and Electronics Engineers (IEEE)

St. Joseph's Hospital and Medical Center
350 W. Thomas Rd.
Phoenix, AZ 85013
Of. (602) 406-4172
Fax. (602) 406-4172
Leonidas.Jassemidis@commonspirit.org
https://www.researchgate.net/profile/Leonidas-Iasemidis
https://www.barrowneuro.org/person/leon-iasemidis-phd/
https://pubmed.ncbi.nlm.nih.gov/?term=iasemidis
https://www.ncbi.nlm.nih.gov/pmc/?term=iasemidis

Professor Emeritus
Biomedical Engineering
School of Biological and Health Systems Engineering
Ira A. Fulton School of Engineering
Arizona State University (ASU)
Iasemidis@asu.edu

NeuroNEM consortium
http://www.neuronem.latech.edu/

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Publications are included in:

https://pubmed.ncbi.nlm.nih.gov/?term=iasemidis

https://www.ncbi.nlm.nih.gov/pmc/?term=iasemidis

https://www.researchgate.net/profile/Leonidas_Iasemidis

https://scholar.google.com/citations?user=zsU-pmcAAAAJ&hl=en

I. PERSONAL DATA and SUMMARY

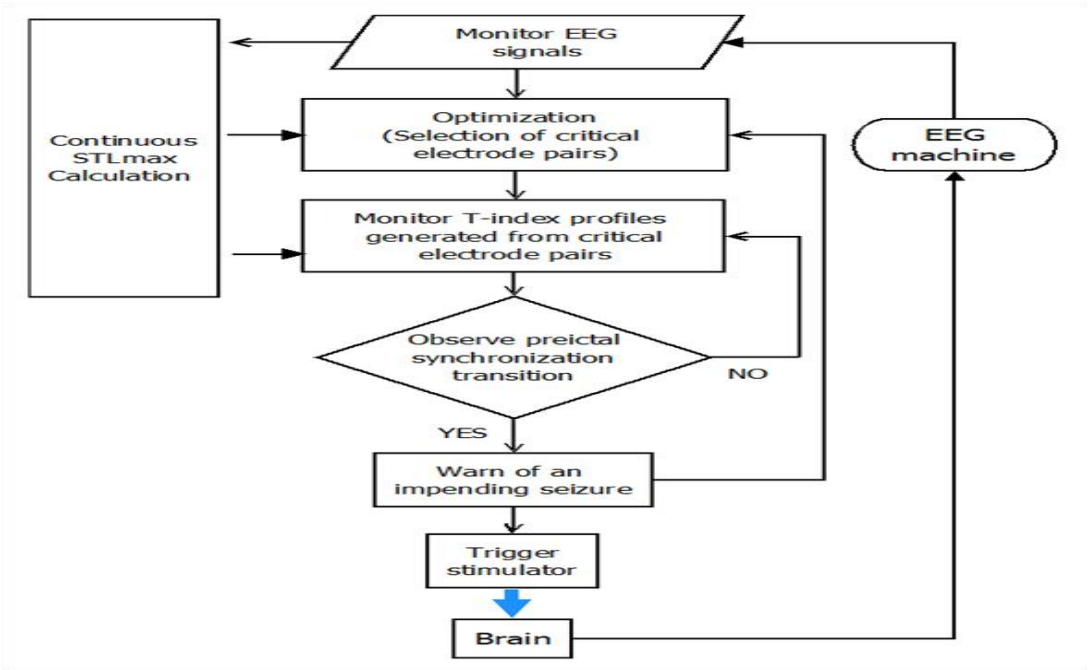
Home Address	13753 E. Lupine Ave., Scottsdale, AZ 85259
Phone	**(480) 570-7531 (Cell)**
Citizenship	European Union (2000); United States of America (1993)
Marital Status	Married, daughter (05/31/93), son (10/20/98)
Languages	Fluent in English and Greek, working knowledge of German

Dr. Leon D. Iasemidis is a world renowned expert in nonlinear dynamics and the development of new measures of dynamics for the detection, prediction and control of crises in complex coupled systems, in particular the animal and human epileptic brain. His research and over **170 peer-reviewed publications**, interdisciplinary conference organizations, presentations and invited talks have stimulated an international interest in the prediction and control of epileptic seizures and understanding of the mechanisms of epileptogenesis. He is considered one of the founders of the field of seizure prediction and has collaborated with Mayo Clinic, Cleveland Clinic and the Barrow Neurological Institute. Dr. Iasemidis served on the editorial board of *Epilepsia*, the *IEEE Transactions on Biomedical Engineering* and the *International Journal of Neural Systems*, and currently is on the editorial board of the *Annals of Biomedical Engineering, Epilepsy Research* and *IEEE's Journal of Engineering in Medicine and Biology (OJEMB).* He is a reviewer for a score of journals and research sponsoring national and international agencies, including the National Institutes of Health (NIH) and the National Science Foundation (NSF).

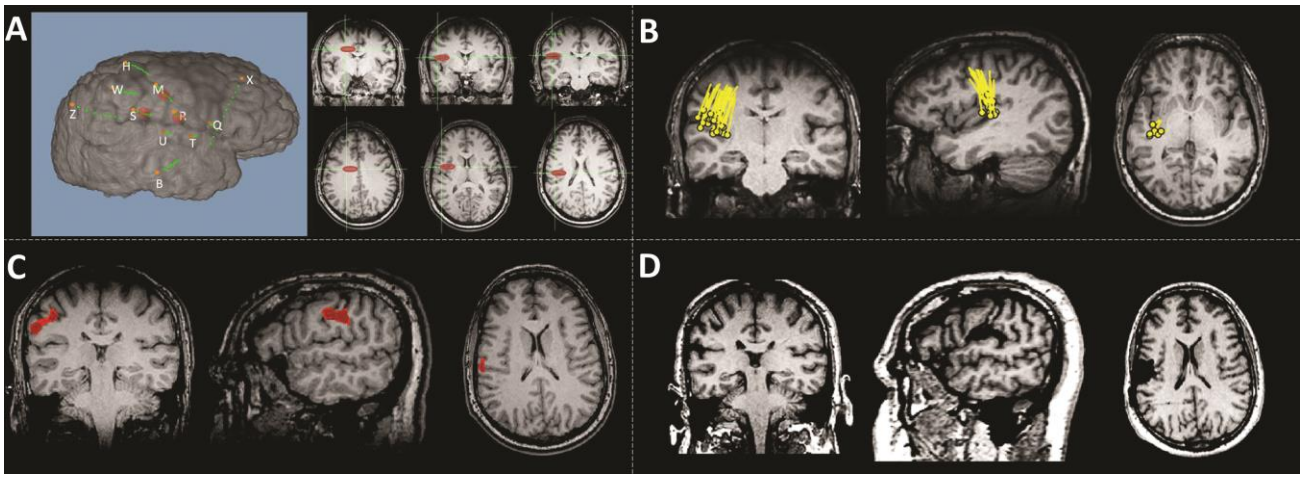
Over the years, Dr. Iasemidis' research has been funded by NIH, VA, DARPA, NSF, DoD, the Epilepsy Foundation of America, CURE Foundation, the Science Foundation of Arizona, the Whitaker Foundation and industry for a total of over $30M in funds as PI or Co-PI. From 2016 to 2021, Dr. Iasemidis' was the PI on a $6M NSF grant entitled *"Probing and Understanding the Brain: Micro and Macro Dynamics of Seizure and Memory Networks"* (NSF OIA 1632891) that resulted in the formation of a tri-state (Louisiana Tech U., U. Alabama and U. Arkansas) consortium, the Neuronal Networks in Epilepsy and Memory (NeuroNEM) consortium (http://www.neuronem.latech.edu/). ***As PI*** *of NeuroNEM, he led 22 faculty, 4 post-docs, 16 graduate and 21 undergraduate students, 10 REU students and 3 research administrative staff.* He has co-founded three companies in the area of neuromodulation and control of epilepsy and is the co-author of 6 awarded, 1 pending and 9 provisional patents in these areas. His research has been highlighted on multiple forums, including the *New York Times*, *Discover* magazine, the *Teaching Company*, and the *American Association for the Advancement of Science* (AAAS).

Dr. Iasemidis received his Ph.D. in Biomedical Engineering, M.S. in Biomedical Engineering and M.S. in Physics from the University of Michigan, Ann Arbor, and his B.S. in Electrical and Electronics Engineering from the National Technical University of Athens (NTUA), Greece. He was a Research Professor with the University of Florida from 1993 to 2000, and an Associate Professor in the department of Biomedical Engineering at Arizona State University from 2000 to 2012. From 2012 to August of 2021 he was the Rhodes Eminent Scholar, held a $2M endowed Chair, was the Director of the multidisciplinary Center for Biomedical Engineering and Rehabilitation Science (CBERS; http://coes.latech.edu/cbers), the Founder and Director of the Brain Dynamics Laboratory (http://www.braindynamics.latech.edu) and the Founder and Director of the EEG Lab in the College of Engineering and Science at Louisiana Tech University, Ruston, Louisiana, USA. As Director of CBERS, he led 31 junior and senior faculty with 5 core Labs and 20 individual investigator Labs. He also held adjunct professorships in Neurology at the Louisiana State University Health Sciences Center, Shreveport, LA (2013 – 2021), and in Neurosurgery at the University of Arkansas for Medical Sciences (UAMS), Little Rock, AR (2014 - 2021). Since September of 2021, he moved to the famous Barrow Neurological Institute in Phoenix, Arizona, where he is a full Professor in the department of Translational Neuroscience, and Founder and Head of the Brain Dynamics Laboratory. Dr. Iasemidis is a Professor Emeritus

at the Arizona State University. He is a **Fellow** of the American Institute of Medical and Biological Engineers (**AIMBE**), a **Fellow** of the National Academy of Inventors (**NAI**) and a **Fellow** of the Institute of Electrical and Electronics Engineers (**IEEE**). Dr. Iasemidis has an **h-index** of 41, i10-index of 100, and 7,540 citations to his work (Google Scholar, 03/29/2022).



Flow Diagram of Real-Time On-Line Closed-Loop Epileptic Seizure Control System (From: L. D. Iasemidis, "Seizure Prediction and its Applications",
J. Neurosurgery Clinics of North America, vol. 22, pp. 489-506, 2011; front cover of October's 2011 issue)



Results for localization of the epileptogenic focus from multivariate analysis of concordant clinical intracranial EEG and non-invasive MEG data. (A) Map of intracranial EEG electrodes reconstructed on a 3D rendering of the patient's MRI. Green filled dots denote location of each implanted stereo-EEG electrode. Red filled areas denote electrodes of ictal onset during iEEG recordings. Axial and coronal slices of subfigure A depict the iEEG-defined ictal onset electrodes (in red) (B) Results of conventional single equivalent current dipole analysis of clinical MEG data shown in a composite image. Locations and orientation of dipoles are denoted in yellow on

the patient's MRI. (C) Results from our multivariate maximum effective inflow analysis of non-epileptiform interictal MEG data detects the focus (red colored region). (D) Axial slices of the patient's post-operative MRI. (From: B. Krishnan, I. Vlachos, Z. Wang, J. Mosher, I. Najm, R. Burgess, L. Iasemidis, A. Alexopoulos, **"**Epileptic focus localization based on resting state interictal MEG recordings is feasible irrespective of the presence or absence of spikes",

Clinical Neurophysiology, vol. 126, pp. 667-674, 2015; front cover of April's 2015 issue)

II. EDUCATION

Postdoctoral training

Research Fellow **Biomedical Engineering** Program, Department of Electrical Engineering and Computer Science, University of Michigan, Ann Arbor, MI (1991-92)
Research Fellow Department of **Neurology**, University of Michigan, Ann Arbor, MI (1992-93)

Graduate studies

Ph.D. Biomedical Engineering, University of Michigan, Ann Arbor, MI (05/04/1991)
Ph.D. Dissertation: *On the dynamics of the human brain in temporal lobe epilepsy*
GPA: *A*

M.S. Biomedical Engineering, University of Michigan, Ann Arbor, MI (08/23/1985)
Courses: Biology, Biochemistry, Physiology, Electrical Biophysics, Biomedical Instrumentation and Design, Systems Theory, Advanced Signal Processing
GPA: *A+*

M.S. Physics, University of Michigan, Ann Arbor, MI (12/19/1986)
Courses: Quantum Mechanics, Statistical Mechanics and Thermodynamics, Classical Mechanics, Nuclear Physics, Electromagnetics
GPA: *A-*

Post-Grad. Electrical Engineering, Brown University, Providence, RI (1983-84)
Courses: Applied Mathematics, Optimization, Stochastic Processes, Stochastic Control, Digital Signal Processing, Neuroengineering

Undergraduate studies

Diploma (M.S.) Electrical Engineering
National Technical University of Athens (NTUA), Greece (1982)
Thesis: Speech processing: *Estimation of pitch of human speech by the average magnitude difference function and the harmonic sieve method*.
Major: Electronics and Digital Signal Processing.
Minor: Communications and Information Theory.
Graduated Summa cum Laude.

High School

Varvakios Model School, Athens, Greece (1976; Summa cum Laude).

III. PROFESSIONAL EXPERIENCE / ACADEMIC POSITIONS

2021-present	**Professor, Department of Translational Neuroscience, Barrow Neurological Institute, Phoenix, AZ**
2014-2021	Director of the Center for Biomedical Engineering and Rehabilitation Science, (CBERS), Louisiana Tech University, Ruston, LA
2014-2021	Adjunct Professor, Department of Neurosurgery, University of Arkansas Medical Sciences, Little Rock, AR
2013-2021	Adjunct Professor, Department of Neurology, Louisiana State University, Health Medical Sciences, Shreveport, LA
2012-2021	Professor and Rhodes Eminent Scholar Chair, Department of Biomedical Engineering, Louisiana Tech University, Ruston, LA **Rhodes Endowment** ($2M)
2012-present	Professor Emeritus, Arizona State University, Tempe, AZ
2010-2012	Affiliate Professor, The Graduate Program in Neurosciences**,** Arizona State University, Tempe, AZ.
2009-2012	Adjunct Professor, Department of Neurology, Mayo Clinic, Scottsdale, Arizona (03/01/09)
2008 Fall	Sabbatical Leave to Harvard Medical School (Department of Neurology, Dr. Steve Schachter) and Princeton University (Department of Chemical Engineering and Applied Mathematics; Dr. Yannis Kevrekidis)
2007-2012	Affiliate Professor, The Electrical Engineering Department, Arizona State University, Tempe, AZ.
2004-2012	Associate Professor with Tenure, The Harrington Department of Bioengineering, Arizona State University, Tempe, AZ.
2000-2004	Associate Professor, Tenure Track, Department of Bioengineering, Arizona State University, Tempe, AZ; Founder and Director of the ASU Brain Dynamics Laboratory, Tempe, AZ. (Neural Engineering: Bioinformatics, Signal Processing, BioMEMS, Dynamical Systems, Control of Chaos, Brain Coding)
1999-2000	Affiliate Research Assistant Professor, Center for Applied Optimization, Department of Systems and Industrial Engineering, University of Florida, Gainesville, FL. Affiliate Research Assistant Professor, Department of Neuroscience and the University of Florida Brain Institute, Medical School, University of Florida, Gainesville, FL.
1997-2000	Research Assistant Professor, Department of Electrical and Computer Engineering, College of Engineering, University of Florida, Gainesville, FL. Senior Research Scientist (GS13-03), Research Service, Veterans Affairs Medical Center, Gainesville, FL. Founder and Director, Brain Dynamics Laboratory, Research Service, Malcolm Randall Veterans Affairs Medical Center, Gainesville, FL. The scope of the Brain Dynamics Laboratory was threefold: 1) analysis of human and animal brain's EEG & MEG waves and images with advanced signal processing techniques to accurately detect the dynamics of information generation and flow inside the brain, 2) develop spatio-temporal models to predict changes in brain's dynamics and 3) develop means to control the involved brain's dynamics.
1993-97	Director, Clinical Neurophysiology Laboratory, Neurology Service, Malcolm Randall Veterans Affairs Medical Center, Gainesville, FL, and Affiliate

Research Assistant Professor, Department of Neurology, Medical School, University of Florida, Gainesville, FL.
Responsible for the overall clinical and technical performance of the Laboratory. In charge of the research collaboration of the Laboratory with faculty from Medical School and College of Engineering (submission of joint research grant proposals, supervision of interdisciplinary research projects). Responsible for the education of clinical technicians, trainees and other support personnel (medical students, residents, post-doctoral fellows) via organization of seminars and hands-on clinical neurological experiments.
The clinical activities of the Laboratory included diagnostic evoked potential tests (brain stem, visual, somatosensory) on an outpatient and intra-operative basis; nerve conduction studies; diagnostic EEG tests on an inpatient (intra-operative, 24h long-term monitoring, intensive care) and outpatient (routine, emergency, status epilepticus) basis; and multiple sleep latency tests. Under my direction, the Laboratory was totally remodeled from an analog to a digital platform (1994-96) and obtained its first evoked potential normal data base. It was equipped with digital EEG data acquisition and video monitoring machines and intra-operative digital evoked potential machines in a network configuration. The funds ($300,000) for this large-scale remodeling and reorganization of the Laboratory were secured from VA Federal Funds after my submission of a grant proposal.

1992-93 Post-Doctoral Fellow, Department of Neurology, University of Michigan, Ann Arbor, MI.
Research: Detection of the development of synchronized spatio-temporal chaos in coupled semi-conductor linear and circular laser arrays via measures of stability from nonlinear dynamics. Relation of these synchronized phase transitions to neurodynamics of the epileptic human brain.
Training: Recording and diagnostic interpretation of electroencephalo-grams (EEG) and evoked potentials. This training included the use of intra-operative evoked potential recordings to monitor the electrical activity of the brain in patients during neurosurgery.

1991-92 Post-Doctoral Fellow, Biomedical Engineering Program, Department of Electrical Engineering and Computer Science, University of Michigan, Ann Arbor, MI.
Detection and localization of structural damage in soft tissues via ultrasound. Analysis of A-lines before, during and after conditions of hyperthermia to: a) capture the temporal behavior of the development of the damage, b) control the damage's spatial extent and reversibility, and c) measure the temperature variations.

1989-91 Research Associate, Biomedical Engineering Program, University of Michigan, Ann Arbor, MI.
Spatio-temporal analysis of the electrical brain activity recorded in patients with intractable epileptic seizures. Development of novel methods from nonlinear dynamics to estimate measures of complexity and chaoticity of the EEG (generalized correlation dimensions, generalized Lyapunov exponents, Kolmogorov entropy) for the detection and localization of the epileptogenic focus. Linear and nonlinear auto-regressive modeling of electroencephalo-grams. Long-term prediction of epileptic seizures.

1988-89 Teaching Assistant, Biomedical Engineering Program, University of Michigan, Ann Arbor, MI.
Course: Biomedical Instrumentation and Design: Lecture and Laboratory

1986-88 Teaching Assistant, Department of Electrical Engineering and Computer Science, University of Michigan, Ann Arbor, MI.
Courses: Digital Signal Processing I and II: Lecture, Recitation and Laboratory.

1986-87 Research Assistant, Department of Neurology, University of Michigan, Ann Arbor, MI.
Studies in Clinical Neurophysiology. Signal analysis and modeling of EEG.

1984-86 Research Assistant, Biomedical Engineering Program, Departments of Electrical Engineering and Psychiatry, University of Michigan, Ann Arbor.
Recording, storage and analysis of human ERP's (event related potentials) resulting from the visual presentation of words related to psychiatric disorders (supraliminally and subliminally). Use of principal component analysis, order statistics, Median filtering, Wiener filtering, Kalman filtering, Information Flow and Mutual Information techniques.

1983-84 Research Assistant, Department of Electrical Engineering, Brown University, Providence, RI.
Speech analysis and synthesis (encoders and decoders), Kalman Filtering.

1980-82 Research Assistant, Department of Electrical Engineering, National Technical University of Athens (N.T.U.A.), Athens, Greece.
Waveguide and Wireless Communication, Electronics, Microprocessors, Digital Signal Processing, Speech Processing.

IV. AWARDS - ACADEMIC RECOGNITIONS

- **Recognition Award** for *"Leadership in Research and Economic Impact", College of Engineering and Science,* Louisiana Tech University (September, 2018)
- **Fellow, Institute of Electrical and Electronics Engineers (IEEE)** for *"contributions to epileptic seizure prediction and closed-loop brain stimulation*" (November, 2017)
- **Recognition Award** for *"Leadership in International Recognition of the College of Engineering and Science",* Louisiana Tech University (September, 2016)
- Company Award for **IntelliPace LLC** (2nd place placement in the Innovation Enterprise I20 Corridor venture championship competition; April 22, 2016)
- **Fellow, National Academy of Inventors (NAI)** for *"Demonstration of a highly prolific spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on quality of life, economic development, and the welfare of society"* (December, 2015)
- **Recognition Award** for the *"Leadership role in national recognition of the College of Engineering and Science",* Louisiana Tech University (September, 2014)
- **Fellow, American Institute of Medical and Biological Engineers (AIMBE)** for *"Outstanding contributions to understanding the origin of and to developing methods for diagnosing, predicting and treating epileptic seizures"* (January, 2014)
- **IEEE Senior Member** (June, 2013)
- **The Spectrum Award,** The Institutes for Achievement of Human Potential, Philadelphia, PA, for a **"**Unique fluency in the language of discovery, and a rare capacity to translate discoveries into applied science. His work has stimulated interest in the underlying mechanisms of seizures on an international scale. He has moved the world forward significantly in its understanding of neuroplasticity, which will benefit all mankind" (May 10, 2013)
- **Inventorship FY2009 Recognition Award,** Arizona Technology Enterprises (AzTE), ASU, October 29, 2009.
- **Invited Expert** in the *Reuters Insight Community of Experts (registered 06/24/08)*
- Our **research was highlighted** in "Chaos in health and disease." by Prof. Steven Strogatz, Lecture 21, Chaos course video, Science and Mathematics series, The Teaching Company, 2008.
- **Paper Award:** L.B. Good, S. Sabesan, S.T. Marsh, K. Tsakalis, *L.D. Iasemidis* & D.M. Treiman, "Automatic seizure prediction and deep brain stimulation control in epileptic rats", Philadelphia, Pennsylvania, American Epilepsy Society Annual meeting, 2007.
- **ASU President upon Dr. Iasemidis tenure: "President Crow shines light on five new rising stars", ASU Insight Magazine, vol. 24, No. 37, page 1 and 6 (May 7, 2004)**
- **Paper award***:* The 2004 William Pierskalla best paper award for research excellence in health care management science, Institute for Operations Research and the Management Sciences (INFORMS), 2004. It has been ranked 5th in the Top 25 Articles in Operations Research Letters (P. M. Pardalos, W. Chaovalitwongse, L. D. Iasemidis, J. C. Sackellares, D-S. Shiau, P. R. Carney, O. A. Prokopyev and V. A. Yatsenko, "Seizure warning algorithm based on optimization and nonlinear dynamics", Mathematical Programming, Volume 101, Number 2 (November 2004) pp. 365 - 385.*)*
- **Best Paper and Best Speaker Award.** Title: "Predictability of epileptic seizure: A comparative study using Lyapunov exponent and entropy based measures", in the 40th Annual Rocky Mountain Bioengineering Symposium, St. Louis, Missouri, 2003.

(S. Sabesan, K. Narayanan, A. Prasad, A. Spanias, J.C. Sackellares & L. D. Iasemidis, "Predictability of epileptic seizures: A comparative study using Lyapunov exponent and entropy based measures", *Proceedings of the 40th Annual Rocky Mountain Bioengineering Symposium*, Biloxi, Mississippi, ISA Publishing, pp. 129-135, 2003.)

- ***Nominee** for the "University's Last Lecture Series", Arizona State University (2003)*
  (Excellence in Teaching; nominated by the ASU Students Office of Co-Curricular Programs)
- Our **research was highlighted** in "Doctors look ahead to pacemakers for the brain", ***The New York Times*****,** science section page D5, February 18, 2003.
- ***Member***, The Arizona State University President's Community Enrichment Outreach Program, 2002
- Our **research was highlighted** in "*Fire in the Brain*", ***Discover* magazine,** May issue 2002, pp. 50-53 (*www.discover.com*)
- **Invited Speake**r, "Quadratic integer optimization and nonlinear dynamics for prediction of epileptic seizures", American Society for the Advancement of Science (AAAS), San Francisco, Feb. 2001.
- Our **research was highlighted** in *"Epileptic seizures could be predictable", **The New York Times***, by Reuters, February 20, 2001
- ***Who's Who in America** (1998-present)*
  (Marquis Edition)
- *Horace H. Rackham **Pre-Doctoral Fellowship** (1989-90)*
  (The Graduate School, University of Michigan, Ann Arbor)
- *The **Distinguished Achievement Award for Outstanding work in Biomedical Engineering** (1988-89)*
  (The College of Engineering, University of Michigan, Ann Arbor)
- *Recognition for **excellence in teaching** (1987-88)*
  (The Department of Electrical Engineering and Computer Science, University of Michigan, Ann Arbor)
- *Member of **Tau Beta Pi** society (1987)*
  (The USA National Engineering Honor Society)
- *Fellowship for **excellence in undergraduate studies** (1977-82)*
  (The State Scholarship's Foundation of Greece)

V. Speaking engagements (selected list)

1. Invited Speaker, at the Neuroscience Conference, department of Translational Neuroscience, Barrow Neurological Institute: *Prediction and Control of Crises in the Brain and the field of Organomics: Applications to Epileptic Seizures, Status Epilepticus, and SUDEP",* April 13, 2021.
2. Invited Speaker at Grand Rounds at the department of Neurology in Cleveland Clinic: "*Spatiotemporal dynamics of crises in the epileptic brain: Seizures, SE and SUDEP - A Network Approach and Organomics",* Cleveland Clinic, Cleveland, OH, Oct. 30, 2020.
3. Keynote Speaker, "*Epilepsy as a Brain Dynamical Disorder*", Intern. Conf. on Brain Informatics, Dec. 7-9, Arlington, TX, 2018.
4. Invited Speaker, "*Probing and analysis of the micro and macro dynamics of the epileptic brain*", Wayne State University, May 24, 2018.
5. Invited Speaker, "*Probing and understanding the micro and macro dynamics of the epileptic brain*", University of South Florida, April 27, 2018.
6. Keynote Speaker, "*Dynamical analysis of EEG and MEG for localization of the epileptogenic focus, prediction and control of seizures*", World Congress on Medical Physics & Biomedical Engineering, Prague, Czech Republic, June 3-8, 2018.
7. Invited Speaker, "*Probing and understanding the epileptic brain*", Florida International University, April 13, 2018.
8. Plenum Speaker, "*The Dynamics of Epileptic Seizures: Prediction, Resetting and Control*", 3rd International Conference on Epilepsy and Treatment", Brussels, Belgium, August 31, 2017.
9. Invited Speaker, "*Advanced Analysis of EEG and MEG in Epilepsy: Applications to Interictal Focus Localization, Seizure Prediction, Seizure Resetting and Seizure Control*", VU University Medical Center, Amsterdam, Netherlands, September 1, 2017.
10. Invited Speaker, "Analysis of brain dynamics for prediction and control of epileptic seizures", Department of Cell Biology and Anatomy, LSU Medical School, New Orleans, March 27, 2017.
11. Guest Speaker, National Radio of Greece, December 19, 2016 (http://webradio.ert.gr/proto/)
12. Chairman's Speech, 32nd Southern Biomedical Engineering Conference, Shreveport, Louisiana, March 11-13, 2016.
13. Co-Chairman's Speech, Industry Day 2016 Conference, Shreveport, October 1, 2016
14. Co-Chairman's Speech, Industry Day 2015 Conference, Shreveport, September 18, 2015.
15. Speaker, "Brain dynamics for epileptogenic focus localization, seizure prediction and control", Louisiana State University Health Sciences Center Shreveport, Department of Neurology, September 19, 2014.
16. Speaker, "Spatio-temporal brain dynamics in epilepsy", Summer School on *Mathematical Modeling of Complex Systems*, Athens, Greece, July 25, 2014.
17. Speaker, "Resetting of the Epileptic Brain by Seizures", 30th Annual Southern Biomedical Engineering Conference, Gulfport, Mississippi, April 10, 2014.
18. Keynote Speaker, "Brain's Connectome: Application to Diagnosis and Treatment of Epilepsy", Int. Conference on Innovation in Medicine and Healthcare, U. Piraeus, Greece, July 17-19, 2013.
19. Keynote Speaker, "Resetting the Pathology of Brain Dynamics by Seizures and Conjectures on Control of Epilepsy", The Institutes and The World Organization for Human Potential, Wyndmoor, PA, May 9, 2013.
20. Speaker, "Quantitative analysis of EEG and MEG in the surgical treatment of Epilepsy", Louisiana State University Health Sciences Center Shreveport, Department of Neurosurgery, March 5, 2013.

21. Speaker, “Brain dynamics and applications to the diagnosis and treatment of epilepsy” Epilepsy Grand Rounds, Department of Neurology, Cleveland Clinic, OH, September 14, 2012.
22. Speaker, “EEG precursors in the development of brain disorders” Security and Defense Systems Initiatives: Human Performance Augmentation Meeting, Arizona State University, Tempe, March 1-2, 2012.
23. Speaker, “Spatiotemporal changes of brain dynamics and applications to neuromodulation and real-time control of epileptic seizures”, Distinguished Lecture Series, The Center for Biomedical Engineering and Rehabilitation Science, The College of Engineering and Science, Louisiana Tech University, Dec. 12, 2011.
24. Speaker, “On Brain Dynamics in Epilepsy: Seizure Resetting, Prediction, Control and Focus Localization in Humans and Animals, 4th International Meeting on Epilepsy Research, Center for Integrative Neuroscience and Neuroengineering Research (CINNR) and the Intellectual and Developmental Disabilities Research Center (IDDRC), May 19 – May 21, Chicago, IL, 2011.
25. Speaker, “Seizure Prediction and Just-In-Time Control of Epilepsy via Electrical Stimulation”, 39th Annual Neural Interfaces Conference, Long Beach, CA, June 21-23, 2010.
26. Invited Speaker, “Seizure Prediction”, 22nd Annual Epilepsy Update, Mayo School of Continuous Professional Development, Scottsdale, Arizona, Nov. 7, 2009.
27. Speaker, “Dynamics of epileptic seizures: Epileptogenesis, seizure prediction and control”, in the track *Neuroengineering: Modeling, stimulation and control*, at the Medical Physics and Biomedical Engineering World Congress, Munich, Germany, Sept. 7-12, 2009.
28. Keynote Speaker, “Chaos, Brain and Epilepsy”, 2nd Chaotic Modeling and Simulation International Conference, Crete, Greece, June 2, 2009.
29. Speaker, “Seizure prediction and control of epilepsy via resetting of brain dynamics”, 4th International workshop on seizure prediction, Kansas City, June 4-7, 2009.
30. Speaker, “Epilepsy: A new look into its dynamics”, ASU/BNI Graduate Program in Neurosciences, February 28, 2009, Phoenix, Arizona.
31. Speaker, “Seizure dynamics”, Dept. of Chemical Engineering, Princeton University, December 19, 2008.
32. Speaker, “Assessment of Seizure Susceptibility using Dynamical Analysis of EEG in Patients with Epilepsy”, Beth Israel Deaconess Medical Center, Tuesday December 16, 2008, Farr 11 Conference Room, 12 – 1pm, Department of Neurology, Harvard Medical School, Boston, MA.
33. Speaker, “Seizure prediction and control”, Dept. of Neurology, Mayo Clinic, Scottsdale, AZ, August 13, 2008.
34. Speaker, “The journey from seizure prediction to seizure control with an intermediate stop for epileptogenic focus localization”, CIMIT Epilepsy Innovation Summit, Boston, May 7, 2008.
35. Speaker, “On ictogenesis, seizure prediction and control”, CIMIT (Center for Integration of Medicine & Innovation Technology) Innovation Congress 2007, Harvard-MIT, Boston, Nov. 13-14, 2007.
36. Speaker, “On real-time prediction and control of epileptic seizures: An overview”, Dept. of Neurology, U. of Arizona, March 16, 2007.
37. Speaker, International Workshop on “Complex dynamics of physiological systems: From heart to brain”, Presidency College, Kolkata, India, Feb. 14-17, 2007.
38. Speaker, East China Normal University, Shanghai, China, Feb. 12-14, 2007.
39. Speaker, “Can we predict seizures?”, 19th Mayo Conference on Epilepsy, Scottsdale, AZ, Nov. 4, 2006.
40. Speaker, Summer School in Bioengineering, Patras, Greece, July, 2006
41. Speaker, Flinn Foundation Conference on Bioengineering, June 2006

42. Speaker, “A Dynamical View of Epilepsy: Application to the Prediction and Adaptive Control of Epileptic Seizures”, Florida International University, Miami, FL, April 2006.
43. Co-Chair and Speaker, the 2nd International NIH sponsored workshop on Seizure Prediction and Control, Bethesda, April 2006.
44. Speaker: ASU President Crow’s Community Outreach Program, “Seizure Prediction”, in the session on Neuroscience of the Brain, Fall 2005.
45. Speaker, “Optimization in Epilepsy”, University of Coimbra, Workshop on “Optimization in Medicine”, Coimbra, Portugal, July 20-22, 2005
46. Speaker, IEEE EMBEC, Chair of Session “Brain Pacemakers”, Prague, Hungary, November, 2005
47. Speaker, International Summer School, “Complexity in Science and Society”, Patras and Ancient Olympia, Greece, July 14-27, 2004
48. Speaker, 2nd Summer School on “Emerging Technologies in Biomedicine”, Patras, Greece, June 20-25, 2004
49. Speaker, International Conference on “High Performance Algorithms and Software for Nonlinear Optimization: Status and Perspectives”, Ischia, Italy, June 18-20, 2004
50. Speaker, “Predicting epileptic seizures: Methods and Results”, 21st Annual Houston Conference on Biomedical Engineering Research”, University of Houston, Houston, TX, February 12-13, 2004
51. Speaker, “Predicting Epileptic seizures”, Department of Neurology, Mayo Clinic, Phoenix, AZ, March 22, 2004
52. Speaker, “Timely prediction of epileptic seizures: The road to intelligent pacemakers”, Department of Neurosurgery, Good Samaritan Hospital, Phoenix, AZ, December 10, 2003
53. Speaker, “Prediction of epileptic seizures: Learning from the past and looking into the future”, Department of Neurology, Barrows Neurological Institute, Phoenix, AZ, November 28, 2003
54. Speaker, “Seeking Answers: The Find a Cure for Epilepsy conference”, May 18-20, Lake Bluff, Illinois, 2003
55. Speaker, “Brain Dynamics and Epilepsy”, The Harrington Department of Bioengineering of ASU and the Department of Neurosurgery of UA joint conference, October 8, Tempe, AZ, 2003
56. Speaker, “A New Look at the Dynamics of the Epileptic Brain: Prediction of Epileptic Seizures and Resetting of the Epileptic Brain Leads to Intelligent Brain Pacemakers”, 14th Conference of the International Society for Brain Electromagnetic Topography, Santa Fe, New Mexico, November 2003.
57. Speaker, “Mathematical models of epilepsy and neuronal excitability”, Spring Epilepsy Research Conference, Grand Cayman, British West Indies, April 2003.
58. Speaker, “Spatio-temporal dynamics of the human brain in epilepsy and brain pacemakers”, *The role of mathematics and computation in systems and integrative biology,* NSF-sponsored workshop, Utah State University, Logan, Utah, March, 2003.
59. Plenum Speaker, “The history of epileptic prediction”, 1st International Workshop on “Epileptic seizure prediction”, Bonn, Germany, April 2002.
60. Speaker, “Dynamical brain disorders and the theory of chaos”, The Arizona State University President’s Community Enrichment Outreach Program, March 2002.
61. Speaker, “Predicting epileptic seizures… and more”, New Horizons in Science Annual Meeting, Council for the Advancement of Science Writing, Nov. 2001 (http://nasw.org/users/casw/Thurs2.htm).
62. Guest Speaker, “Prediction of epileptic seizures and resetting of the epileptic brain”, 14th Summer School on *Nonlinear Dynamics: Chaos and Complexity,* Patras, Greece, July 2001.
63. Speaker, “Quadratic integer optimization and nonlinear dynamics for prediction of epileptic seizures”, American Society for the Advancement of Science (AAAS), San Francisco, Feb. 2001

VI. PRESS CITATIONS

1. Engineering and Science (E&S Magazine) at Louisiana Tech University, “Dr. Leonidas Iasemidis”, vol. 62, page 8, Spring 2018 (http://orgs.latech.edu/esa/engineer/index.html).
2. https://academyofinventors.org/press-releases/
3. https://www.latech.edu/2017/11/27/prestigious-and-well-earned-honor-for-iasemidis-named-ieee-fellow/
4. https://www.latech.edu/2015/12/17/iasemidis-named-a-national-academy-of-inventors-fellow/
5. Louisiana EPSCoR Newsletter, “The mysteries of brain networks in crisis”, https://goo.gl/g6vCl7, January 6, 2017.
6. http://news.latech.edu/2016/08/22/iasemidis-receives-nsf-grant-to-advance-brain-research-in-epilepsy/, 2016.
7. http://www.ellines.com/en/achievements/29033-one-of-the-leaders-in-the-field-of-seizure-prediction/, 2016.
8. http://www.academyofinventors.org/press-releases.asp, 2016.
9. http://www.cureepilepsy.org/research/2015grantees.asp, 2015.
10. http://www.theadvertiser.com/story/news/local/2014/02/04/la-techs-iasemidis-named-fellow-of-national-biomedical-organization/5201127/, 2014.
11. http://aimbe.org/college-of-fellows/cof-1653/, 2014.
12. http://inmed13.innovationkt.org/keynotes.php, 2013.
13. Our research is highlighted by Prof. Steven Strogatz. In "Chaos in Health and Disease." in Lecture 21, Chaos course video, Science and Mathematics series, DVD, THE TEACHING COMPANY, 2008.
14. Dean’s Report (2005-6), page 17, **Ira A. Fulton School of Engineering**, Arizona State University, Arizona Board of Regents, 2006.
15. Bioengineering Activities, “Arizona State University and Barrow Neurological Institute” and “International Workshop on Prediction of Epileptic Seizures”, **The Arizona Bioscientist**, Flinn Foundation, October, 2006.
16. “President Crow shines light on five new rising stars”, **ASU Insight Magazine**, vol. 24, No. 37, page 1 & 6 (May 7, 2004)
17. “Forecasting Mind Storms”, **ASU Research Magazine**, Summer 2003
18. “A Brain Pacemaker”, **Psychology Today,** July/August, 2003
19. “Predicting a storm in the brain”, **IEEE Spectrum,** pp. 45, July 2003
20. “Doctors look ahead to pacemakers for the brain” in ***The New York Times*****,** science section page D5, February 18, 2003.
21. “Technology provides advance warning for epileptic seizures”, **Physician’s Weekly**, January 14, 2002 (www.physweekly.com/article.asp?issueid=3&articleid=119&printable=1)
22. “Tomorrow’s world” science and technology program by ***BBC***, London, 2002.
23. “Epilepsy: can seizures be predicted?”, **The Lancet Neurology**, May 2002.
24. “*Fire in the Brain*”, ***Discover* magazine,** May issue 2002, pp. 50-53 (*www.discover.com*)
25. Congratulations from the **President of ASU** (Dr. Lattie Coor), 2001
26. “*ASU Bioengineer presents evidence of forecasting epileptic attacks*”, ASU Engineering web page (www.eas.asu.edu/ceas/news/), 2002
27. Citation by the **ASU’s Dean of Engineering** (Dr. Peter Crouch) (www.eas.asu.edu/ceas/news/), 2002
28. *“Professors find way to predict epileptic seizures”* in the ***State Press***, March 1, 2001
29. “*ASU Bioengineer presents evidence of forecasting epileptic attacks*”, ***ASU Research Magazine***, March, 2001.

30. "Further research reported on seizure prediction", **Epilepsy Action News Archive**, February 26, 2001 (www.epilepsy.org.uk/news/archive/2001/20010226.html)
31. *"Epileptic seizures could be predictable"* in ***The New York Times***, by Reuters, February 20, 2001
32. *"Seized by chaos", **Beyond 2000**, June 13, 2000 (http://beyond2000.com/news/story_370.html)*
33. "*Chaos theory sheds light on pre-seizure transition period*", Vanguard, ***U.S. Department of Veterans Affairs***, pp.13, February 2000.
34. "*Chaos theory helps researchers predict epileptic seizures*", Friday Evening Post, ***The University of Florida Health Science Center***, December 17, 1999.

VII. PROFESSIONAL SERVICE

i) EDITORIAL ACTIVITIES

- ***Member of the Editorial Board*** *of the "IEEE Open Access Journal of Engineering in Medicine and Biology (OJEMB)* (2019 – present)
- ***Member of the Editorial Board*** *of "Epilepsy Research" (2015* - present*)*
- ***Associate Editor*** *of "Annals of Biomedical Engineering"* (2009 – present)
- ***Associate Editor*** *of "Int. J. Neural Systems"* (2005 - 2013)
- ***Member of the Editorial Board*** *of "Epilepsia" (*2003 - 2006*)*
- ***Associate Editor*** *of "IEEE Transactions on Biomedical Engineering"* (2001 - 2006)

- ***Guest Editor of the Special Issue*** *of Int. J. Neural Systems, on* "Bioelectromagnetism and Epilepsy: Theory and Applications" (2013)
- ***Guest Editor of the Special Issue*** *of Int. J. Neural Systems, on* "Neuromodulation and Epilepsy" (2010)
- ***Guest Editor of the Special Issue*** *of Int. J. Neural Systems, on* "Neuromodulation and Control of Epileptic Seizures" (2009)
- ***Guest Editor of the Special Issue*** *of Int. J. Neural Systems, on* "Synchronization of Neural Systems" (2007)
- ***Guest Editor of the Special Issue*** *of IEEE-TBME on "Seizure Prediction"* (2003)

- ***Co-Editor, Book:*** *Data Mining, Systems Analysis and Optimization in Neuroscience*, Springer Verlag, 2007.
- ***Co-Editor, Book:*** *Quantitative Neuroscience*, Kluwer Academic Publishers, Boston, 2004.

ii) REVIEWER ACTIVITIES

EXTERNAL REVIEWER FOR TENURE AND PROMOTION

- *U. Kentucky*
- *Georgetown University*
- *U. Rhode Island*
- *Johns Hopkins U.*
- *Indiana U / Purdue U.*
- *Florida International U.*

EXTERNAL REVIEWER FOR FEDERAL AGENCIES AND NATIONAL ORGANIZATIONS

- U Texas System – Brain Seed Grants (2015)
- LSU Biomedical Collaborative Research Program (2015)
- Kuwait Foundation for the Advancement of Sciences - KFAS (July 2014–present)
- Czech Science Foundation - GACR (August 2013-present)
- Medical Research Council (MRC), United Kingdom (November 2011-present)
- Center for Integration of Medicine and Innovative Technology (CIMIT) (March 2009-present)

- National Institutes of Health (NIH), USA, Emerging Technologies and Training in Neurosciences IRG (Oct. 2008-present)
- Austrian Science Fund (ASF) (June 2008–present)
- National Science Foundation (NSF), USA (Jan. 2004-present)
- National Medical Research Council (NMRC Singapore, Jan. 2004-present)
- U.S. Civilian Research and Development Foundation (CRDF) www.crdf.org (May 2003-present)
- Epilepsy Research Partnership Grants (Epilepsy Foundation of America) and CURE (May, 2003-present)
- NIH, National Institute of Neurological Disorders and Stroke, USA (2001-present)

REVIEWER FOR PUBLISHING COMPANIES

- Oxford University Press (2017)

REVIEWER FOR JOURNALS

1. Experts Systems with Applications (2021-present)
2. Frontiers Neurology (Open Access) (2020-present)
3. J. Biological Systems (2020-present)
4. J. Biomedical Research (2019-present)
5. Medical & Biological Engineering & Computing (2019-present)
6. PLOS One (2019-present)
7. Biomedical Signal Processing and Control (2019-present)
8. WIREs Data Mining and Knowledge Discovery (2018-present)
9. J. Neural Computation (2017-present)
10. Computer Methods and Programs in Biomedicine (CMPB) (2017-present)
11. Springer Plus (2014-present)
12. Brain Topography (2014-present)
13. Entropy (Open Access) (2012-present)
14. IEEE Computational Intelligence Magazine (2012-present)
15. J. Biomedical and Health Informatics (2014-present)
16. NeuroImage (2012-present)
17. Computational and Mathematical Methods in Medicine (2011 – present)
18. International J. of Bifurcation and Chaos (2011 – present)
19. IEEE Transactions on Knowledge and Data Engineering (2010 - present)
20. Computers in Biology and Medicine (2010 - present)
21. Journal of Health Care Engineering (2009 – present)
22. International Journal of Computer Mathematics (2009 - present)
23. Recent Patents on Biomedical Engineering (2008 - present)
24. Philosophical Transactions of the Royal Society A (2008 – present)
25. IEEE Transactions on Neural Networks (2008 – present)
26. IEEE Transactions on Information Technology in Biomedicine (2008 - present)
27. IEEE Transactions on Neural Systems and Rehabilitation Engineering (2008 - present)
28. Biological Cybernetics (2007 – present)
29. Chaos (2006 - present)
30. Int. J. Neural Systems (2006 - present)
31. Epilepsy Research (2005 - present)
32. Journal of Neural Engineering (2005 - present)
33. Journal of Medical Engineering and Physics (2004 - present)
34. Physiological Measurement (2003 - present)
35. Journal of Global Optimization (2003 - present)

36. The Lancet Neurology (2002 - present)
37. Journal of Computational Statistics and Data Analysis (2002 – present)
38. Mathematical Biosciences (2002 – present)
39. Journal of Neuroscience Methods (2001 - present)
40. Annals of Biomedical Engineering (2000 – present)
41. IEEE Transactions on Systems, Man and Cybernetics (1999 - present)
42. Journal of the Neurological Sciences (1997 – present)
43. Electroencephalography and Clinical Neurophysiology (1996 – present)
44. Neural Networks (1997 – present)
45. IEEE Transactions on Biomedical Engineering (1993 – present)
46. IEEE Transactions on Signal Processing (1997 – present)
47. Epilepsia (1997 – present)

iii) PROFESSIONAL / CONFERENCE COMMITTEES

1. Organized and co-chaired the special mini-symposium on "Challenges and advances of signal and image processing in epilepsy: Brain networks**"**, IEEE EMBS International Conference, Berlin, July 25, 2019.
2. Organized and co-chaired the special mini-symposium on "Challenges and advances of signal and image processing in epilepsy: Brain-Heart interactions**",** IEEE EMBS International Conference, Berlin, July 25, 2019.
3. General Chair, 11th International Conference on Brain Informatics (BI 2018), Arlington, TX, Dec. 7-9, 2018.
4. Conference Co-Chair, Research and Industry Day (RAID), Shreveport, Oct. 26, 2018.
5. Member of the Scientific Review Committee, IUPESM World Congress on Medical Physics and Biomedical Engineering, Prague, Czech Republic, June 3-8, 2018
6. Conference Co-Chair, Industry Day 2017, Shreveport, September 18, 2017.
7. Member of the Scientific Review Committee for the 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, July 11-15, 2017, Jeju Island, Korea.
8. Member of the Advisory Committee, Deucalion Summer Institute for Advanced Studies in Optimization, Mathematics, and Data Sciences, August 10-20, 2017, Drossato, Argithea, Greece.
9. Conference Co-Chair, Industry Day 2016, Shreveport, October 1, 2016.
10. Conference Chair, Southern Biomedical Engineering Conference (SBEC), Shreveport, March 11-13, 2016.
11. Chair of the Scientific Committee and Track Chair, Southern Biomedical Engineering Conference (SBEC), Shreveport, March 11-13, 2016.
12. Conference Co-Chair, Industry Day 2015, Shreveport, September 18, 2015.
13. Member of the AIMBE's "Neuroengineering and Physiological Engineering" Committee for nominations of Fellows to the AIMBE College of Fellows, 2014, 2015, 2016.
14. Member of the IEEE Technical Committee on Biomedical Signal Processing (IEEE- EMBS) (2014-2016); Chair of the Awards Subcommittee (2014-2015).
15. Session Chair, IEEE EMBS International Conference, Chicago, 2014.
16. Member of the International Scientific Committee, 5th International Summer School on Emerging Technologies in Biomedicine, September 26th -October 1st 2010, Patras, Greece with the support of the COST Action Neuromath, focusing on «High Throughput Communication between Brain and Machines»**.**
17. Member of the Advisory Committee, "International Conference on Biomedical Data & Knowledge Mining: Towards Biomarker Discovery", July 7-9, 2010, Chania, Crete, Greece.

18. Member of the Advisory Committee, 4th International workshop on seizure prediction, Kansas City, June 4-7, 2009.
19. Chair, Registration Committee, IEEE International Conference on Complex Medical Engineering, Tempe, Arizona, April 9-11, 2009.
20. Co-Chair, session in Epilepsy, ASU/BNI Graduate Program in Neurosciences, 3rd Annual Neuroscience Symposium, Barrow Neurological Institute, February 28, 2009.
21. Member of the International Program Committee, 6th International Conference on Biomedical Engineering, (Biomed 2008), Feb. 13-15, 2008, Innsbruck, Austria.
22. Member of the International Program Committee, Circuits Signals and Systems (CSS) 4th International Conference, IASTED 2006.
23. Co-Organizer, Co-chair of the NIH-sponsored workshop on "Seizure Prediction", Washington DC, April 8-11, 2006
24. Co-Organizer, Co-chair and session chair, of the DIMACS workshop on "Data mining, systems analysis and optimization in neuroscience", Gainesville FL, Feb. 15-17, 2006
25. Member of the International Scientific Committee, 3rd European Medical and Biological Engineering Conference (EMBEC), Prague, Nov. 20-25, 2005.
26. Chair of the session "Brain Pacemakers for Epilepsy", 3rd European Medical and Biological Engineering Conference (EMBEC), Prague, Nov. 20-25, 2005.
27. Member of the International Program Committee, Circuits Signals and Systems (CSS) 3rd International Conference, IASTED 2005
28. Co-chair of the *Special Interest Group* workshop on *"Engineering and Epilepsy",* American Epilepsy Society Annual Meeting, New Orleans, December 2004
29. Member of the International Scientific Committee, Speaker, 2nd Summer School on "Emerging Technologies in Biomedicine", Patras, Greece, June 20-25, 2004
30. Co-Chair of the sessions "Seizure Management I and II", 21st Annual Houston Conference on Biomedical Engineering Research", University of Houston, Houston, TX, February 12-13, 2004
31. Co-chair of the *Special Interest Group* workshop on *"Engineering and Epilepsy",* American Epilepsy Society Annual Meeting, Boston, December 2003
32. Member, ASU representative, *Task Force Platform Committee on Bioengineering* for the Battelle Memorial Institute / Flinn Foundation. *Project: "Arizona's Bioscience Roadmap to Success (February 2003 – 2010)*
33. Chair of session "Analysis of Nonstationary Biosignals", in "Biosignal Processing and Physiological systems modeling" track, IEEE 25th International Conference of EMBS (Engineering in Medicine and Biology Society), Cancun, Mexico, September 17-21, 2003
34. Chair of the session "Nonlinear dynamics and epilepsy", International Nonlinear Sciences Conference on Research and applications in the Life sciences, Vienna, Austria, February 2003
35. Member of the Organization Committee of the International Conference on "Quantitative Neurosciences: Models, Algorithms, Diagnostics and Therapeutic Applications", Gainesville, FL, February, 2003
36. Chair of the session "Neuromodelling", 24th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Houston, October 2002.
37. Co-chair of the *Special Interest Group* workshop on *"Engineering and Epilepsy",* American Epilepsy Society Annual Meeting, Seattle, December 2002
38. Member of the International Scientific Committee for the "*Optimization and Industry*" Conference, Great Keppel Island, Australia, July 1-6, 2001.
39. Member of the International Scientific Committee for the "*Biocomputing 2000*" Conference, Gainesville, FL, February, 2001.
40. Member of the International Scientific Committee for *the "First European Conference on Signal Analysis and Prediction"*, Prague, June 24th-27th, 1997.

iv) PROFESSIONAL SOCIETIES

- Member of the IEEE Engineering in Medicine and Biology Society (IEEE-EMBS)
- Member of the BioMedical Engineering Society (BMES)
- Member of the American Clinical Neurophysiology Society (ACNS)
- Member of the American Epilepsy Society (AES)
- Member of the Society for Neuroscience (SFN)
- Member of the American Association for the Advancement of Science (AAAS)

VIII. ACADEMIC SERVICE

i) UNIVERSITY / COLLEGE / DEPARTMENTAL COMMITTEES

Barrow Neurological Institute (BNI)

1. *Chair, Committee for the joint graduate program with ASU's Biomedical Engineering*

Louisiana Tech University (LA Tech)

1. *Member, Faculty Search Committee, Biomedical Engineering and Chemical Engineering, College of Engineering (2016-19)*
2. *Member, Research Growth Team of the Senior VP of Research and Development, University level (2014-2017)*
3. *Member, Committee for Intellectual Property and Commercialization, University level (2014–present)*
4. *Member, Faculty Search Committee, Computer Science and Electrical Engineering, College of Engineering (2013-15)*
5. *Chair, Promotion and Tenure Committee, Biomedical Engineering (2013-14)*
6. *Member, Promotion and Tenure Committee, Electrical Engineering (2013-14)*
7. *Chair, Space Committee, Biomedical Engineering (2012-13)*
8. *Member, Faculty Search Committee, Biomedical Engineering, College of Engineering (2012-13)*

Arizona State University (ASU)

1. *Member, Department of Bioengineering Personnel Committee (2011)*
2. *Chair of the subcommittee on "Translational Neuroscience", University Search Committee for Grand Challenges Faculty Positions on Health Care, ASU (2009-2011)*
3. *Member, Fulton School of Engineering Grievances Review Committee (2007-2012)*
4. *Member, Department of Bioengineering Personnel Committee (2007-2010)*
5. *Member, University Search Committee for the Chair in Bioengineering (2006)*
6. *Member, The Dean's Advisory Personnel Committee, Fulton School of Engineering (2004-2007)*
7. *Member, Ph.D. Comprehensive Exam Committees, The Harrington Dept. of Bioengineering (2006-2012)*
8. *Graduate Chair, The Harrington Dept. of Bioengineering (2004-2006)*
9. *Chair, Ph.D. Comprehensive Exam Committee, The Harrington Dept. of Bioengineering (2004-2006)*
10. *Chair, Fulton School of Engineering Committee on Education for ECE 340 and ECE 350 (2004)*
11. *Member, Advertisement of Graduate and Undergraduate Studies Committee, Planning, Fulton School of Engineering (2004-2006)*
12. *Member, Biological Liaison Committee, Fulton School of Engineering (2004)*
13. *Member, Curriculum Committee, Fulton School of Engineering for ECE 100 and 300 courses (Spring, 2004)*
14. *Departmental Faculty Search Committee for Bioscience and Bioinformatics (Member)- joint with Computer Science (2003-04)*
15. *University Task Force Platform Committee on Bioengineering for the Battelle Memorial Institute / Flinn Foundation. Project: "Arizona's Bioscience Roadmap to Success", February, 2003-2010.*
16. *Departmental Faculty Search Committee for Bioinformatics (Member)- joint with Computer Science (2002-03)*

17. Departmental Faculty Search Committee for BioMEMS (Member) (2001-02)
18. School of Engineering Committee on Diversity (2001)

ii) STUDENT COMMITTEES

Doctoral dissertations

- **Pragya Dhungel,** Biomedical Engineering program, LA Tech University (Member, 2020-2021)
- Elnaz Khezerlou, Biomedical Engineering program, LA Tech University (Member, 2016-2021)
- **Christian Hacker,** Computational Analysis and Modeling program, LA Tech University (**Chair**, 2019-present)
- **Omar Alamoudi**, "Epileptogenic focus localization by novel analysis of intracranial EEG in the frequency domain", Biomedical Engineering program, LA Tech University (**Chair**, 2016-2021)
- **Sai Mohan**, Biomedical Engineering program, LA Tech University (**Co-Chair**, 2018-2021)
- Diana Pizarro, Computer and Electrical Engineering, U. Alabama, Birmingham (Member, 2018-2021)
- Anik Karan, "Scale-up characterization and functionalization of copper high aspect ratio structures (CuHARS) and other metal-organic biohybrids (MOBS) for cell studies", Biomedical Engineering program, LA Tech University (Member, 2018-2020)
- **Timothy Noah Hutson,** "Organomics with applications to neuro-cardio-respiratory network related diseases", Biomedical Engineering program, LA Tech University (**Chair**, 2017-2020)
- Sowjanya Dokku, "Interaction between positive and negative feedback in platelet adhesion on an improved micro channel patterned thrombogenic and non-thrombogenic regions" (Member, 2017-present)
- Hemangini Dhaibar, "Respiratory Abnormalities in Kcna1-null mice: A model of sudden unexpected death in epilepsy (SUDEP)", Department of Cell Biology and Anatomy", LSU Health SC, Shreveport (Member, 2016-2020)
- Darrell Robinson, Biomedical Engineering program, LA Tech University (Member, 2016-present)
- Stephanie L. Villalba, Department of Cell Biology and Anatomy, LSU Health SC Shreveport (Member, 2014-2017)
- Salah Alzghoul, "Screening and detection of prostate cancer by nanosensors", Biomedical Engineering program, LA Tech University (Member, 2015-2016)
- Sreenivasa Rao Sanakam, Biomedical Engineering program, LA Tech University (Member, 2013-2017)
- **Bharat Karumuri**, "Seizure Predictability and Study of Sudden Unexpected Death in Epilepsy Using Machine Learning and Association Measures From EEG and ECG Network Analysis", Biomedical Engineering program, LA Tech University (**Chair**, 2013-2017)
- Varun Lingaiah Kopparthy, "Lab-on-a-chip nucleic acid analysis towards point-of-care applications", Biomedical Engineering program, LA Tech University (Member, 2013-2016)
- **Joshua Adkinson**, "Generalized partial directed coherence and centrality measures in brain networks for epileptogenic focus localization", Computational Analysis and Modeling program, LA Tech University (**Chair**, 2012-2016)
- **Balu Krishnan**, "On the Dynamics of Epileptic Spikes and Focus Localization in Temporal Lobe Epilepsy", Department of Electrical Engineering, Arizona State University, Tempe, AZ (**Chair**, April, 2012)
- Chenhui Yang, "Robust signal detection and modeling with applications to the analysis of cognitive neural control and video target tracking", Department of Electrical Engineering, Arizona State University, Tempe, AZ (Member, 2012)

- Christine Zwart, Department of Bioengineering, Arizona State University, Tempe, AZ (Member, 2012)
- Lifeng Miao, Department of Electrical Engineering, Arizona State University, Tempe, AZ (Member, 2012)
- David Stanley, Department of Bioengineering, Arizona State University, Tempe, AZ (Member, 2011)
- Baohua Li, "Robust dynamic programming for Markov decision processes and filtering applications to video target tracking", Department of Electrical Engineering, Arizona State University, Tempe, AZ (Member, 2009)
- **Teresa Murray**, "Shedding light on nicotinic acetylcholine receptors: creation and use of fluorescently tagged receptors", Department of Bioengineering, Arizona State University (**Co-Chair**, Feb. 18, 2009)
- **Shivkumar Sabesan**, "Spatiotemporal brain dynamics in epilepsy: Application to seizure prediction and focus localization", Department of Electrical Engineering, Arizona State University, Tempe, AZ (**Chair**, 2008)
- **Niranjan Chakravarthy**, "A feedback systems perspective for modeling and controlling epileptic seizures", Department of Electrical Engineering, Arizona State University, Tempe, AZ (**Chair**, 2007)
- **Levi Good**, "Automated seizure prediction and control in a rat model of chronic epilepsy", Department of Bioengineering, Arizona State University (**Chair,** 2007).
- Tao Kang, "Design and control of cooperative mobile robotic systems", Department of Bioengineering, Arizona State University (Member, 2006)
- Byron Scott, "Use and adaptation of a novel brain machine interface", Department of Bioengineering, Arizona State University (Member, Dec., 2004)
- Derek Dosdall, "Modeling and experimental studies of rapid switching techniques for implantable defibrillators", Department of Bioengineering, Arizona State University (Member, 2004)
- **Kevin Otto,** "Intracortical Microstimulation for Sensory Inputs in Brain-Machine Interfaces", Department of Bioengineering, Arizona State University (**Co-Chair**, 2003)
- Darrin Rothe, Department of Bioengineering, Arizona State University (Member, 2001)
- Neil Euliano, Department of Electrical and Computer Engineering, University of Florida (Member, 1998)
- Ludong Wang, Department of Electrical and Computer Engineering, University of Florida (Member, 1996)

Masters theses

1. **Farnaz Rezaei,** "Fast Asymptotic algorithm for real-time analysis of multivariate systems and signals by DTF and PDC measures of connectivity", Mathematics, LA Tech University (**Co-Chair**, 2018-2020)
2. **Samuel Clary,** Biomedical Engineering program, "Seizure detection using Teager-Kaiser energy and a channel signal quality assessment algorithm", LA Tech University (**Co-Chair**, 2017-2019)
3. Farah Shabnam, "Extension of velocity feedback to two dimensions using Doppler ultrasound"**,** Biomedical Engineering program, LA Tech University (Member, 2015-2017)
4. **Biraj Shrestha**, "Distinguishing motor imagery from motor movements using phase locking value and eigenvector centrality", Biomedical Engineering program, LA Tech University (**Chair**, 2014-2016)
5. **Geetika Sruti**, "Analysis of brain network connectivity in P300-speller task", Biomedical Engineering program, LA Tech University (**Chair**, 2014-2016)

6. Francois Decuir, Biomedical Engineering program, LA Tech University (Member, 2013-2014)
7. Sri Akhila Kathari, Biomedical Engineering program, LA Tech University (Member, 2013-2015)
8. **Sai Rudrashetty Mohan**, “”EEG-based analysis of the brain dynamics in sleep”, Biomedical Engineering program, LA Tech University (**Chair**, 2013-2014)
9. **Rui Liu**, “Seizure predictability by multivariate matching pursuit”, Biomedical Engineering program, LA Tech University (**Chair**, 2012-2015)
10. Fernando Puno, Biomedical Engineering program, LA Tech University (Member, 2013-2015)
11. **Eddie Tobin**, “Long-term EEG dynamics following traumatic brain injury in a rat model of post-traumatic epilepsy”, Department of Bioengineering, Arizona State University (**Chair**, 2012)
12. **Vinay Venkataraman**, “Brain dynamics-based automated epileptic seizure detection algorithm”, Department of Electrical Engineering, Arizona State University, Tempe, AZ (**Chair**, 2012)
13. **Shashank Prasanna**, “Directional information flow and applications”, Department of Electrical Engineering, Arizona State University, Tempe, AZ (**Chair**, 2011)
14. Suneth Attygale, “Characterizing motor learning of a novel tracking task in a virtual environment using kinematic evaluation”, Department of Bioengineering, Arizona State University, Tempe, AZ (Member, 2010)
15. Jobi Scaria George, “Methods of phase estimation and synchronization: Application to epileptic seizure prediction”, Department of Electrical Engineering, Arizona State University, Tempe, AZ (Chair, 2009)
16. **Manikandan Ponnuswamy**, “Dynamical analysis of epileptic seizures using synchronization-based measures”, Department of Electrical Engineering, Arizona State University, Tempe, AZ (**Chair**, 2005)
17. **Mallika Mukherjee**, “Application of Lyapunov exponents to hyperthermia-induced spreading depression and focus localization in temporal lobe epileptic seizures”, Department of Bioengineering, Arizona State University, Tempe, AZ (**Chair**, 2003)
18. **Shivkumar Sabesan**, “Entropy and transfer of entropy: Application to the epileptic brain”, Department of Electrical Engineering, Arizona State University, Tempe, AZ (**Chair**, 2003)
19. **Balaji Veeramani**, “A modeling approach for detection of information flow: Application to epileptic brain”, Department of Electrical Engineering, Arizona State University, Tempe, AZ (**Chair**, 2003)
20. **Niranjan Chakravarthy**, “Autoregressive modeling and feature analysis of DNA sequences”, Department of Electrical Engineering, Arizona State University, Tempe, AZ (**Chair**, 2003)
21. **Rajesh Kumar Venugopal**, “Noise reduction and predictability of epileptic seizures”, Department of Electrical Engineering, Arizona State University, Tempe, AZ (**Chair**, 2002)
22. Charles H. Overman, Department of Electrical and Computer Engineering, University of Florida (Member, 1998)
23. **Konstantinos Pappas**, Department of Electrical and Computer Engineering, University of Florida (**Chair**, 1996)

Masters Applied Projects (Masters Practicum)

1. Ankit Jain, “Study of Epileptic Seizure Susceptibility by Spectral Analysis of EEG”, Biomedical Engineering program, LA Tech University (Chair, 2013-2015)
2. Joshua Hope, “Software development for long-term acquisition and analysis of peripheral vascular ultrasound Doppler waveform”, Department of Bioengineering, Arizona State University (Member, 2011)

Undergraduate theses (Senior Design / Capstone Projects, Honors Theses, FURI projects, REUs)

1. Aubrey Berger, **Capstone** Project, School of Biological and Health Systems Engineering, Arizona State University (2021-22)
2. Lauren Everett, **Capstone** Project, School of Biological and Health Systems Engineering, Arizona State University (2021-22)
3. Nyah Kshatriya, **Capstone** Project, School of Biological and Health Systems Engineering, Arizona State University (2021-22)
4. Margarito Hernandez Fuentes, **Capstone** Project, School of Biological and Health Systems Engineering, Arizona State University (2021-22)
5. Jason Haddad, **Senior Design** Project, Dept. of Biomedical Engineering, LA Tech University (Chair, 2019-20)
6. Alexandria Baldizon, **Senior Design** Project, Department of Biomedical Engineering, LA Tech University (Chair, 2019-20)
7. Natalie Roppolo, REU student, Dept. of Biomedical Engineering, LA Tech University (Summer 2019)
8. Nicholas Udstad, **Senior Design** Project, Department of Biomedical Engineering, LA Tech University (Chair, 2018-19)
9. Hunter Rasnic, **Senior Design** Project, Department of Biomedical Engineering, LA Tech University (Chair, 2018-19)
10. Kelly Kneale, **Senior Design** Project, Department of Biomedical Engineering, LA Tech University (Chair, 2017-18)
11. Miranda McMickens, **Senior Design** Project, Department of Biomedical Engineering, LA Tech University (Chair, 2017-18)
12. Christopher Mondragon, **Senior Design** Project, Department of Biomedical Engineering, LA Tech University (Chair, 2017-18)
13. Anthony Ellis, **Senior Design** Project, Department of Biomedical Engineering, LA Tech University (Chair, 2017-18)
14. Lana Larmeu, **Senior Design** Project, Department of Biomedical Engineering, LA Tech University (Chair, 2017-18)
15. Timothy Noah Hutson, **(Senior Design** Project: "Epilepsy Monitor"), Department of Biomedical Engineering, LA Tech (Chair, 2016-2017)
16. Samuel Clary, **(Senior Design** Project: "Epilepsy Monitor"), Department of Biomedical Engineering, LA Tech (Chair, 2016-2017)
17. Daniel Rivera, **(Senior Design** Project: "Anesthesia Monitor"), Department of Biomedical Engineering, LA Tech (Chair, 2015-2016)
18. John Basile, **(Senior Design** Project: "Anesthesia Monitor"), Department of Biomedical Engineering, LA Tech (Chair, 2015-2016)
19. Justin Huckaby **(Senior Design** Project: "Anesthesia Depth Monitor – iEsthesia"), Department of Biomedical Engineering, LA Tech (Chair, 2014-2015)
20. James Liman (**Senior Design** Project: "Anesthesia Depth Monitor – iEsthesia"), Department of Biomedical Engineering, LA Tech (Chair, 2014-2015)
21. Zach Lee (**Senior Design** Project: "Anesthesia Depth Monitor – iEsthesia"), Department of Biomedical Engineering, LA Tech (Chair, 2014-2015)
22. Ashmit Pyakurel (**Senior Design** Project: "Anesthesia Depth Monitor – iEsthesia"), Department of Biomedical Engineering, LA Tech (Chair, 2014-2015)
23. Austin Roth (**Honors Thesis)**, Department of Bioengineering, "Dynamical EEG analysis in the diagnosis and treatment of epilepsy", ASU (Chair, 2013)
24. Kashyap Barot (**Senior Design** Project), Dept. of Bioengineering, ASU (Chair, 2011-2012)
25. Manui Malhotra (**Senior Design** Project), Dept. of Bioengineering, ASU (Chair, 2011-2012)
26. Shaima Shahin (**Senior Design** Project), Dept. of Bioengineering, ASU (Chair, 2011-2012)
27. Aaron Ogata (**Senior Design** Project), Dept. of Bioengineering, ASU (Chair, 2011-2012)
28. Justin Green (**Senior Design** Project), Dept. of Bioengineering, ASU (Chair, 2011-2012)

29. Madeline Grade (**FURI** Project), Department of Bioengineering, ASU (Chair, 2011-2012)
30. Steven Mullane (**FURI** Project), Department of Bioengineering, ASU (Chair, 2011-2012)
31. David Eaton (**FURI** Project), Department of Bioengineering, ASU (Chair, 2010)
32. Oliver Letham(**FURI** Project), Department of Bioengineering, ASU (Chair, 2009-2011)
33. Austin Roth (**FURI** Project), Department of Bioengineering, ASU (Chair, 2009-2012)
34. Stathis Kondylis (**Honors Thesis)**, Department of Bioengineering, ASU, "Dynamical Brain Resetting as a means to quantify the efficacy of VNS therapy in Humans" (Chair, 2011)
35. Stathis Kondylis (**Senior Design** Project), Department of Bioengineering, ASU, "A monitoring software module for measurement of the efficacy of VNS stimulation in patients with epilepsy" (Chair, 2011)
36. Jose Rios (**Honors Thesis)**, Department of Bioengineering, ASU, "Using Signal Analysis Techniques to Assess the Effect of Therapy for Neurological Diseases" (Member, 2010)
37. Gatha Nair **(Honors Thesis)**, Department of Computer Science, ASU, "Dynamics of entrainment of EEG during sleep in epileptic and non-epileptic patients" (Chair, 2009-2010)
38. David Guffrey (**Senior Design** Project), Department of Bioengineering, ASU, "Diagnostic software for optimized VNS therapy in epilepsy" (Chair, 2008-9)
39. Aaron Faith (**Honors Thesis)**, Department of Bioengineering, ASU, **"**Dynamical EEG analysis of resetting in Epilepsy**"** (Chair, 2009)
40. Aaron Faith (**Senior Design** Project), Department of Bioengineering, ASU, "Improved seizure prediction algorithm for patients with epilepsy" (Chair, 2008-9)
41. Roman Fuentes (**Honors Thesis)**, Department of Bioengineering, ASU, Dynamical analysis of EEG: Applications to sleep and epilepsy" (Chair, 2007-9)
42. Sterling Noelck (**Honors Thesis)**, Department of Bioengineering, ASU, "Filtering of Electroencephalographic Signals: Application to Seizure Predictability", (Chair, 2007-8)
43. Aishwarya Ramachandran (**Senior Design** Project), Department of Bioengineering, ASU, "Testing and validation to improve an existing online real-time epileptic seizure prediction software performance" (Chair, 2006-7)
44. Jesse Martin (**Senior Design** Project), Department of Bioengineering, ASU, "Status epilepticus EEG analysis module" (Chair, 2006-7)
45. Trevor Boone (**Senior Design** Project), Department of Bioengineering, ASU, "Feedback loop for seizure control in lab rats" (Chair, 2006-7)
46. Andrew M. Vahabzadeh-Hagh (**Senior Design** Project), Department of Bioengineering, ASU, "Automated epileptic seizure control via a dynamic drug delivery system" (Chair, 2006-7)
47. Sterling Noelck (**Senior Design** Project), Department of Bioengineering, ASU, (Chair, 2005-7)
48. Alaa Obeid (**Senior Design** Project), Department of Bioengineering, ASU, "Filtering of scalp EEG recordings for epileptogenic focus localization" (Chair, 2005-6)
49. Maribel Hernandez (**Senior Design** Project), Department of Bioengineering, ASU, "Epileptic seizure drug delivery systems" (Chair, 2005-6)
50. Ting Chen (**Senior Design** Project), Department of Bioengineering, ASU, "Optimization of a brain stimulator for seizure control with respect to stimulus artifact" (Chair, 2005-6)
51. Chin Guan Lee (**Senior Design** Project), Department of Bioengineering, ASU, "Hardware design and evaluation of closed/open loop brain stimulator" (Chair, 2005-6)
52. Benjamin Letham (**Senior Design** Project), Department of Bioengineering, ASU, "EEG Analysis Module for seizure prediction" (Chair, 2004-5)
53. Andrew Woehler (**Senior Design** Project), Department of Bioengineering, ASU, "Towards a closed loop approach for the control of epileptic seizures" (Chair, 2003-4)
54. Melissa Blank (**Senior Design** Project), Department of Bioengineering, ASU, (Chair, 2002-3)

iii) SUPERVISED / SUPPORTED STUDENTS AND POST-DOCS

Postdoctoral fellows

1. Noah Hutson, Department of Biomedical Engineering, Louisiana Tech University (2019-2021)
2. Kevin Holly, Department of Biomedical Engineering, Louisiana Tech University (2017-2021)
3. Shabnam Siddiqui, Dept. of Biomedical Engineering, Louisiana Tech University (2017-2020)
4. Debottam Bakshi Gupta, Dept. Biomedical Engineering, Louisiana Tech University (2017-18)
5. Ioannis Vlachos, Department of Biomedical Engineering, Louisiana Tech University (2012-2015) and the Department of Biomedical Engineering, Arizona State University (2011- 2012)
6. Shivkumar Sabesan, Department of Bioengineering, Arizona State University (2008- 2010)
7. Levi Good, Barrow Neurological Institute, Phoenix (2007-8)
8. Zonghua Liu, Department of Bioengineering, Arizona State University (2003- 2004)
9. Narayanan Krishnamurti, Dept. of Bioengineering, Arizona State University (2001- 2004)
10. Awadhesh Prasad, Department of Bioengineering, Arizona State University (2001- 2003)
11. Martin Casdagli, Department of Physics, University of Michigan (1994 - 96)
12. Vladimir Krajca, Dept. of Neurology, Bulovka Hospital, Prague, Czech Republic (1995)
13. Armando Barretto, Dept. Electrical and Computer Engineering, University of Florida (1993)

Graduate students

1. Timothy Noah Hutson, Biomedical Engineering program, LA Tech University (2017-2020)
2. Omar Alamoudi, Biomedical Engineering program, LA Tech University (2016-2021)
3. Bharat Karumuri, Biomedical Engineering program, LA Tech University (2012-2018t)
4. Rui Liu, Biomedical Engineering program, LA Tech University (2012-2018)
5. Biraj Shrestha, Biomedical Engineering program, LA Tech University (2014-2016)
6. Geetika Sruti, Biomedical Engineering program, LA Tech University (2014-2016)
7. Joshua Adkinson, Biomedical Engineering program, LA Tech University (2012-2016)
8. Sai Rudrashetty Mohan, Biomedical Engineering program, LA Tech University (2012-2015)
9. Ankit Jain, Biomedical Engineering program, LA Tech University (2013-2015)
10. Ashfaque Bin Shafique, Dept. Electrical Engineering, Arizona State University (2011-2012)
11. Vinay Venkataraman, Dept. of Electrical Engineering, Arizona State University (2010-2012)
12. Eddie Tobin, Department of Bioengineering, Arizona State University (2010-2012)
13. Shashank Prasanna, Dept. of Electrical Engineering, Arizona State University (2010-2011)
14. Aaron Faith, Department of Bioengineering, Arizona State University (2008- 2012)
15. Balu Krishnan, Department of Electrical Engineering, Arizona State University (2007-2012)
16. Jobi George, Department of Electrical Engineering, Arizona State University (2007-2009)
17. Manikandan Ponnuswamy, Dept. Electrical Engineering, Arizona State University (2004-2005)
18. Niranjan Chakravarthy, Dept. of Electrical Engineering, Arizona State University (2002- 2007)
19. Levi Good, Department of Bioengineering, Arizona State University (2002- 2007)
20. S. Sabesan, Department of Electrical Engineering, Arizona State University (2001- 2008)
21. Balaji Veeramani, Dept. of Electrical Engineering, Arizona State University (2001- 2004)
22. Kevin Otto, Department of Bioenginering, Arizona State University (2000-2003)
23. Mallika Mukherjee, Department of Bioengineering, Arizona State University (2000- 2003)
24. Rajesh Kumar Venugopal, Dept. Electrical Engineering, Arizona State University (2000- 2002)
25. Jose Flores-Godoy, Department of Electrical Engineering, Arizona State University (2002)
26. Rahul Vohra, Department of Electrical Engineering, Arizona State University (2001)
27. Archint Srivastava, Department of Computer Science, University of Florida (1999-2001)
28. Art Chaovalitwongse, Dept. of Industrial Engineering, University of Florida (1999 - 2000)
29. Rahul Ponniah, Dept. Electrical & Computer Engineering, University of Florida (1999 - 2000)
30. Varun Bhagwan, Dept. Electrical and Computer Engineering, U. of Florida (1999 - 2000)
31. Ook Kim, Department of Electrical and Computer Engineering, U. of Florida (1998 - 2000)
32. Qiang Luo, Department of Electrical and Computer Engineering, U. of Florida (1998 - 2000)

33. Deng-Shan Shiau, Department of Statistics, University of Florida (1997-2000)
34. Changjian Sun, Dept. of Computer and Information Sciences, University of Florida (1997-98)
35. Radha Krishna Mohan Konyala, Dept. Computer & Information Sciences, U. of Florida (1997-98)
36. Sriram Subramanian, Dept. Electrical and Computer Engineering, University of Florida (1997)
37. Hsiao-Chun Wu, Department of Electrical and Computer Engineering (1996)
38. Jovan Sokolovic, Dept. of Electrical and Computer Engineering, University of Florida (1995)
39. Ludong Wang, Dept. of Electrical and Computer Engineering, University of Florida (1995-96)
40. John Neeley, Dept. of Electrical and Computer Engineering, University of Florida (1995-96)
41. Radu Manuka, Department of Physics, University of Michigan (1994-96)
42. Shannon Fields, Dept. Electrical and Computer Engineering, University of Florida (1994-95)
43. David Yu, Dept. of Electrical and Computer Engineering, University of Florida (1994)
44. Moschos Vogiatzis, Dept. Natural Resource Management, University of Florida (1994-95)
45. Konstantinos Pappas, Dept. of Electrical & Computer Engineering, U. of Florida (1993-97)

Undergraduate students

1. Aubrey Berger, Capstone project, School of Biological and Health Systems Engineering, Arizona State University (2021-22)
2. Lauren Everett, Capstone project, School of Biological and Health Systems Engineering, Arizona State University (2021-22)
3. Nyah Kshatriya, Capstone project, School of Biological and Health Systems Engineering, Arizona State University (2021-22)
4. Margarito Hernandez Fuentes, Capstone project, School of Biological and Health Systems Engineering, Arizona State University (2021-22)
5. Daniel Kumler, Department of Computer Science and Department of Electrical Engineering, LA Tech University (2018-2021)
6. Jason Haddad, Department of Biomedical Engineering, LA Tech University (2018-2020)
7. Hossam Elsaadawy, Department of Electrical Engineering, LA Tech University (2018-2019)
8. Natalie Roppolo, Department of Biomedical Engineering, LA Tech University (2018-2019)
9. Alexandria Baldizon, Dept. of Biomedical Engineering, LA Tech University (2019-2020)
10. Aaron Gray, Department of Computer Science, LA Tech University (2018-2019)
11. Parker Willmon, Department of Mathematics, LA Tech University (2018-2019)
12. Kelly Kneale, Department of Biomedical Engineering, LA Tech University (2016-2018)
13. Miranda McMickens, Dept. of Biomedical Engineering, LA Tech University (2016-2018)
14. Christopher Mondragon, Dept. of Biomedical Engineering, LA Tech University (2016-2018)
15. Charles Anthony Ellis, Dept. of Biomedical Engineering, LA Tech University (2017-2018)
16. Lana Larmeu, Department of Biomedical Engineering, LA Tech University (2017-2018)
17. Siyovush Abdurakhimov, Dept. of Electrical Engineering, LA Tech University (2017-18)
18. Timothy Noah Hutson, Dept. of Biomedical Engineering, LA Tech University (2013-2017)
19. Daniel Rivera, Department of Biomedical Engineering, LA Tech University (2014-2016)
20. John Basile, Department of Biomedical Engineering, LA Tech University (2014-2016)
21. Benjamin Sturgeon, Department of Biomedical Engineering, LA Tech University (2014-2015)
22. Willson Meli Ngong, Department of Biomedical Engineering, LA Tech University (2014-2015)
23. Anil Oberoi, Department of Biomedical Engineering, LA Tech University (2014-2015)
24. Akpofure Unukpo, Department of Biomedical Engineering, LA Tech University (2013-2014)
25. Logan Didier, Department of Biomedical Engineering, LA Tech University (2013-2015)
26. Alyssa Dyess Tregre, Dept. of Biomedical Engineering, LA Tech University (2013-2015)
27. Ashmit Pyakurel, Department of Biomedical Engineering, LA Tech University (2012-2014)
28. Ranjita Shrestha, Department of Biomedical Engineering, LA Tech University (2012-2015)
29. Madeline Grade (FURI), Department of Bioengineering, ASU (2011-2012)
30. Steven Mullane (FURI), Department of Bioengineering, ASU (2011-2012)

31. David Eaton (FURI), Department of Bioengineering, ASU (2010)
32. Oliver Letham(FURI), Department of Bioengineering, ASU (2009-2011)
33. Austin Roth (FURI), Department of Bioengineering, ASU (2009-2013)
34. Stathis Kondylis (FURI), Department of Bioengineering, ASU (2009-2011)
35. John Spanias, Department of Bioengineering, ASU (2009)
36. Elizabeth Marek, Department of Bioengineering, ASU (2009)
37. Stephen Brink, Department of Bioengineering, ASU (2001-2)
38. Gavin Lewis, Department of Computer Science, ASU (2001- 2006)
39. Thomas Brown, physician assistant program, Santa Fe Community College (1994-96)
40. Jason Czaplewski, Dept. Electrical and Computer Engineering, U. Florida (1994-97)
41. David Kerr, Bioengineering program, Santa Fe Community College (1997-2000)

iv) INTERNSHIP MENTORSHIP

1. Sandip Pati MD, Mayo Clinic Scottsdale (2007-8)
2. Shivkumar Sabesan, Banner Health Co. (2007)
3. Vanessa Xavier, The CORE Institute (2007)

v) PLACEMENT OF FELLOWS / STUDENTS

1. Joshua Adkinson, Research Scientist, Baylor College of Medicine, Houston, TX (2019)
2. Rui Liu, Cincinnati Children's Hospital Medical Center, Research Scientist, Cincinnati, OH (2018)
3. Kelly Kneale, Medtronic, Research Scientist (2018)
4. Christopher Mondragon, Research Engineer, GE Medical, New Orleans (2018)
5. Siyovush Abdurakhimov, Research Engineer, Entergy, New Orleans (2018)
6. Bharat Karumuri, Blue Cross Blue Shield, Research Scientist, Chicago, IL (2017)
7. Sai Mohan Rudrashetty, Research Engineer, FRASEN, (2016)
8. Steven Mullane, BIOTRONIK, Clinical Studies Engineer Team, Oswego, Oregon (2014)
9. Balu Krishnan, Research Fellow, Dept. of Neurology, Cleveland Clinic, Cleveland, OH (2012)
10. Stathis Kondylis, Medical School, U. Pittsburg, PA (2012)
11. Art Chaovalitwongse, Professor, Department of Radiology and Industrial Engineering, U. Washington, Seattle, WA (2011)
12. Shashank Prasanna, Research Fellow, Mathworks (MatLab), Cambridge, MA (2011)
13. Teresa Murray, Assist. Professor, Dept. of Bioengineering, Louisiana Tech University (2011)
14. Jobi George, Senior Engineer, Mathworks, Bangalore, India (2011)
15. Shivkumar Sabesan, Senior Scientist, Cyberonics Inc., Houston, TX (2010)
16. Niranjan Chakravarthy, Senior Scientist at Corventis Inc., St. Paul, MN (2009)
17. Levi Good, Department of Neurology, University of Texas Southwestern Medical Center, 5323 Harry Hines Blvd, Mail Code 8813, Dallas, Texas, 75390 (2008)
18. Trevor Boone, Quality Engineer, Gore Company, Flagstaff (2009)
19. Andrew M. Vahabzadeh-Hagh, Harvard U. Medical School (2007)
20. Manikandan Ponnuswamy, Intel, Phoenix (2006)
21. Kevin Otto, Assistant Professor, Cornell U. (2006); Associate Professor, U. of Florida (2014)
22. Benjamin Letham, in pursuit of M.S. in Biomedical Engineering at Johns Hopkins U, and Ph.D. in Applied Mathematics at MIT (2005, 2010 respectively)
23. Andrew Woehler, Dept. of Neuroscience, Max Planck Institute, in pursuit of Ph.D. (2005)
24. Stephen Brink, Department of Bioengineering, Georgia Tech, in pursuit of Ph.D. (2005)

25. Balaji Veeramani, Department of Biomedical Engineering, Johns Hopkins University in pursuit of Ph.D. (2004); Research Scientist, Dow Company (2011)
26. Zonghua Liu, Professor, Department of Physics, East China Normal University, Shanghai 200062, PR China (2004)
27. Awadhesh Prasad, Assistant Professor, Dept. of Physics, New Delhi University, India (2003)
28. Deng-Shan Shiau, VP Scientific Affairs, Optima Neuroscience Inc, Gainesville, FL
29. Varun Bhagwan, IBM Almaden Research Center, San Jose, CA
30. *Armando Barretto*, Associate Professor, Department of Electrical & Computer Engineering, Florida International University, Miami, FL. [E-mail: barreto@eng.fiu.edu]
31. *Martin Casdagli*, Senior Scientist, Nonlinear Prediction Company, Los Alamos, NM
32. *Vladimir Krajca*, Assistant Professor, Technical University at Ostrava; Senior Medical Engineer, Department of Neurology, Faculty Hospital Bulovka, Prague, Czech Republic [E-mail: krajca@neuro.anet.cz]
33. *Jason Czaplewski*, Systems Analyst, Shands Health Care, Gainesville, FL [E-mail: jason@sands.ufl.edu]
34. *Moschos Vogiatzis*, Remote Sensing Co., Thessaloniki, Greece
35. *Shannon Fields*, President, Navigation Technology Associates, Inc., Huntsville, AL [E-mail:shannon@hiwaay.net]
36. *Konstantinos Pappas*, Senior Engineer, Ericsson Co., Durham, NC [E-mail: kostas-pappas@ericsson.com]
37. *Radha Krishna Mohan Konyala*, Software Engineer, Informix Software Inc., Oakland, CA [E-mail: mohan@informix.com]
38. *Changjian Sun*, Software Engineer, i2 Technologies Inc., Boston, MA
39. Archint Srivastava, Software Analyst, Microsoft Corporation, SC.

IX. RESEARCH GRANTS

i) GRANTS AWARDED

Principal Investigator

1. **Probing and Understanding the Brain: Micro and Macro Dynamics of Seizure and Memory Networks** (09/16-08/21) **(**NSF EPSCoR RII Track-2 FEC; OIA 1632891; $6,000,000). Experimental Program to Stimulate Competitive Research (EPSCoR) from NSF's Office of Integrative Activities (OIA) as part of NSF's Research Infrastructure Improvement (RII) Track-2. Three participating sites: Louisiana Tech University (Lead), University of Alabama, University of Arkansas. Established the Neuronal Networks in Epilepsy and Memory Consortium: http://www.neuronem.latech.edu/. The proposed brain research, within the realms of the BRAIN initiative program, is conducted at LA Tech in collaboration with site-Co-PIs at the University of Alabama and University of Arkansas medical centers. Long-term recording and monitoring of the electromagnetic (EEG and MEG) and molecular (neurotransmitter) dynamics of the epileptic brain *en route* to seizures in humans and animals, in conjunction with longitudinal *in vivo* optical cellular imaging. Elucidation of the dynamics of ictogenesis at the molecular and cellular levels; identification of the epileptic and memory networks and prediction of epileptic seizures and memory impairment via advanced signal processing and modeling techniques; improvement of current and development of new tools and modalities for diagnosis and treatment of crises in brain dynamical disorders.
2. **EpiFocus** (05/16-05/17) Innovation Enterprise Fund (Louisiana Tech University Research Foundation; $20,000). A start-up company seed grant for epileptogenic focus localization from analysis of short-term interictal EEG and MEG recordings on an outpatient basis.
3. **Anaesthesia Depth Monitor** (03/15-03/16) (Biomedical Research Foundation of Northwest Louisiana; $33,400). Seed funding to develop state-of-the-art software for quantification of the depth of anaesthesia from EEG recordings in the OR.
4. **VNS Closed-Loop** (01/12-06/12) (Cyberonics Inc.; Total amount: $200,000). Area: Control of seizures via novel electrical stimulation paradigms.
5. **ASU High Performance Computing Center Allocation Grant** (250,000 CPU hours; 2011)
6. **Unrestricted research equipment donation; from Mayo** ($100K market value; 2011)
7. **Characterization of Novel Vagus Nerve Stimulation (VNS) Parameters' Efficacy, Based on Desynchronization of Brain Dynamics, in Open and Closed-Loop Configurations: A Study in an Animal Model of Chronic Epilepsy** (06/10-12/11) (Cyberonics Inc.; Total amount: $560,000; ASU: GES0149). Area: Optimization of seizure control via timely administered electrical stimulation.
8. **Mayo's grant GES 0161** ($21,149; 03/01/11-03/01/13) for identification and evaluation of the treatment of status epilepticus (SE) in the emergency room (ER).
9. **ASU High Performance Computing Center Allocation Grant** (100,000 CPU hours; 2010)
10. **Vagus Nerve Stimulation: A Bioengineering Approach to Assess its Effect on Resetting the Epileptic Brain Dynamics** (03/09-03/12) (NIH *R21 NS061310-01A2*, in collaboration with BNI; Co-PI: Dr. D. Treiman; Total amount: $414,714; ASU: GES0118) The major goal of this project is to relate the successes and failures of the VNS treatment of epileptic patients to the VNS capability of resetting the pathology in brain dynamics, as this is measured by mathematical analysis of scalp EEG.
11. **Optimizing Multidimensional Time Series Classification: Spatio-Temporal Data Mining in Epileptic Brain Dynamics** (07/08-07/09) (Science Foundation of Arizona **CAA 0281-08**; in

collaboration with Mayo at Scottsdale; Co-PI: Dr. J. Sirven ; Total amount: $267,000; ASU: GES0097)

12. **Seizure Control by Closed Loop Feedback in a Rat Model of Chronic Temporal lobe Epilepsy** (07/01/05-06/30/06) (Epilepsy Research Foundation, PI; Total amount: $100,000)
13. ***On-line Real-Time Seizure Prediction*** – PI at ASU site (07/05-06/06) (NIH; subcontract from the University of Florida; Total amount: $2,523,000)
14. **Dynamical modeling and control of epileptic seizures** (08/01/03-07/31/04) (Ira Fulton School of Engineering, ASU, Seed Grant, Total amount: $48,000)
15. **Dynamics of Hyperthermia-Induced Seizures in Immature Rat Hippocampal Slices** (02/02-02/03) (Biomedical Engineering Seed Grant, Department of Bioengineering, Arizona State University; Seed Grant, Total amount $20,000)
16. **Bioengineering Research Partnership for Brain Dynamics** – ASU site (05/01-05/06) (NIH, NS039687, subcontract from the University of Florida; Total amount: $4,600,000)
17. **Dynamical studies in generalized childhood epilepsy** (05/99-05/00) (Biomedical Engineering Seed Grant, Biomedical Engineering Program, The University of Florida; Total amount: $15,000)
18. **Spatio-temporal models and the epileptic brain** (06/94-06/95) (Division of Sponsored Research, The University of Florida; Total amount: $7,500)
19. **Equipment grant** (06/93-06/94) (Division of Sponsored Research, The University of Florida; Total amount: $10,000)

Co-Principal Investigator

20. **Employment of *in vivo* biosignal dynamics as biomarkers of SUDEP** (09/15-03/18) (CURE Foundation; PI: A.E. Glasscock; Total amount: $250,000). Investigations of brain-heart-respiratory dynamics in the case of sudden and unexpected death in epilepsy (SUDEP). Mathematical analysis of long-term EEG, ECG and plethysmographic recordings from genetically modified animal models of SUDEP.
21. **A new quantitative EEG technique for prediction of post-traumatic epilepsy (PTE) in individual subjects after traumatic brain injury (TBI)** (08/11-02/15) (Dept. of Defense - DoD Concept Award PT090712; PI: D. Treiman; Total amount: $300,000)
22. **Epileptogenic Focus Localization and Closed-Loop Control of Brain Dynamics in Epilepsy** (NSF, ECCS Division, Cyber Systems ECCS-1102390, 09/11-09/15; Total amount: $360,000; DWS 0692; PI: K. Tsakalis)
    In this proposed basic research, we will investigate the effect of the knowledge of the epileptogenic focus location in our previously developed just-in-time feedback decoupling scheme of seizure control. The experiments will be conducted on epileptic rats in real time over long periods of time (months) to study the short and long-term efficacy of the proposed electrical stimulation.
23. **IGERT: An Arts, Sciences, and Engineering Research and Education Initiative for Experimental Media** (NSF, 09/05-09/12; Senior personnel; Total amount: $3,000,000; PI: T. Rikakis)
24. **Closed-loop control of brain dynamics in epilepsy** (04/06-03/10) (NSF Cyber Systems *ECS-0601740*), Total amount: $240,000, PI: K. Tsakalis; ASU: DWS0193)
25. **A quantitative EEG method for real-time detection of neonatal seizures in the neonatal intensive care unit** (08/01/03-07/31/04) (Partnership for Pediatric Epilepsy Research, Epilepsy Foundation of America; Total amount: $75,000; PI: Paul Carney)
26. ***Advanced Neural Implants and Control*** (08/00-08/03) (DARPA; Total amount: $6,000,000; PIs: Daryl Kipke / Jiping He)

27. **Comparison of the dynamical responses of epileptogenic versus non-epileptogenic human cerebral cortex to weak magnetic stimuli** (06/00-06/01) (Division of Sponsored Research, The University of Florida; Total amount: $25,000; PI: Chris Sackellares)
28. **Transitions in correlated chaotic systems** (10/98-10/99) (Division of Sponsored Research, The University of Florida; Total amount: $35,000; PI: Chris Sackellares*)*
29. **Dynamical studies in temporal and frontal lobe epilepsy** (06/97-06/01) (NIH-NINCDS Grant R01 NS31451-05A1; Total amount: $715,974; PI: Chris Sackellares)
30. **Dynamical mechanisms initiating temporal lobe seizures** (04/97-04/00) (VA Merit Grant, Department of Veterans Affairs; Total amount: $195,600; PI: Chris Sackellares)
31. **Dynamical studies in temporal lobe epilepsy** (08/93-08/97) (NIH-NINCDS Grant R01 NS31451; Total amount: $539,466; PI: Chris Sackellares)

Co-Investigator

32. **Development of a closed-loop detect-and-treat system using transcranial direct current stimulation (tDCS) for epilepsy** (01/10-01/11) (CIMIT: The Center for Integration of Medicine and Innovative Technology in Boston; PI: Felipe Fregni, Department of Neurology, Harvard University)
33. **Seizure prediction system: A clinical and research tool for epilepsy** (09/05-09/06) (NIH–SBIR 1R43NS050931-01A1; Total amount: $100,000; PI: Victor Baidoon)
34. **Recognition of sound signatures using biologically plausible sensors and recurrent neural networks** (08/96-08/97) (Office of Naval Research N00014-94-1-0858; Amount: $15,397; PI: Jose Principe)
35. **Lasers, brains and epilepsy: The emergence and destruction of synchronized chaos** (09/92-09/93) (Office of Vice President of Research, The University of Michigan; Amount: $20,000; PI: Winful)
36. **Investigation via ultrasound of the structural damage caused by hyperthermia in soft tissues** (09/91-09/92) (Office of Vice President of Research, The University of Michigan; Amount: $20,000; PI: Ebbini)

ii) GRANTS PENDING

1. **Respiratory Mechanisms and Novel Network Dynamics contributing to Risk of SUDEP** (03/2023-02/2028) (NIH R01; Total amount: $3M; Dr. Iasemidis (PI), Dr. Glasscock (PI)) – Under Review.
2. **Biomarkers of SUDEP Risk based on Brain-Heart-Lungs Network Dynamics** (10/2022-09/2027) (NIH R01; Total amount: $3.5M; Dr. Iasemidis and Dr. Glasscock (PD/PIs) – Reviewed – Scored (13%).
3. **The first 9 hours after stroke** (10/2022-09/2027) (NIH R01; Total amount: 4M; Dr. Iasemidis (Co-I), Dr. Pascual (PI) – Not funded
4. **Electroconvulsive Therapy with high density EEG electrodes** (05/2023-04/2024) (NIH STTR phase I grant proposal with the U. of New Mexico and Soterix LLC; Total amount: $256K; Dr. Iasemidis (Consultant), Dr. Abhishek Datta (PI) – Under Review

X. SPIN-OFF COMPANIES

- Co-founded and VC funded the start-up company "Neurobionics"(-> "Bioneuronics" -> "**Neurovista**") in the area of Epilepsy, Seizure Prediction and Control, 2004.

- Co-founded the start-up company "ABS" (**Advanced Brain Systems**) in the area of Brain Dynamics and Control of Brain Disorders, 2010.

- Co-founded the start-up company “**EpiFocus**”, 2016 in Louisiana and 2022 in Arizona.

XI. PUBLICATIONS AND PATENTS

Sources for citations: ISI Web of Science and Google Scholar
(h-index=41; i10-index=100; # citations=7,540)

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C. BOOKS

i) BOOKS EDITOR

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ii) BOOK REVIEWS

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iii) BOOK CHAPTERS

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2. Meng-Chieh Lee, Shubhranshu Shekhar, Christos Faloutsos, T. Noah Hutson and Leon D. Iasemidis, “Detecting and Ranking Generalized Anomalies”, in the Proceedings of the *IEEE International Conference on Big Data* (12/15/2021 to 12/18/2021).
3. Karin Schiecke, Lutz Leistritz and Leon Iasemidis, “Brain-Heart Interactions in Long-Term Recordings of Epileptic Patients: Proof-of-Principle Application of Segmented Convergent Cross Mapping”, 11th Conference of the European Study Group on Cardiovascular Oscillations (ESGCO) July 15, 2020. DOI: 10.1109/ESGCO49734.2020
4. Mark DeCoster, Elnaz Khezerlou, Omar Alamoudi, Kevin Holly, Leon Iasemidis, “Network Connectivity Analysis of Neuronal Cell Cultures with High and Low Densities of Astrocytes Using Calcium Dynamics Data”**,** *6th Annual BRAIN Initiative Investigators Meeting, all US Federal Agencies for BRAIN initiative*, June 1-2, virtual, p. 65, 2020.
5. Timothy N. Hutson, Sandipan Pati, Leon Iasemidis, “Can status epilepticus be predicted long before it happens?” *6th Annual BRAIN Initiative Investigators Meeting, all US Federal Agencies for BRAIN,* June 1-2, p. 76, 2020.
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E. ABSTRACTS and POSTERS OF CONFERENCE PRESENTATIONS

1. M.I. Hossain, C. Tan, P. Doughty, G. Dutta, T. Murray, S. Siddiqui, L. Iasemidis & P.U. Arumugam, "A Novel Microbiosensor Microarray for Continuous *Ex Vivo* Monitoring of Gamma-Aminobutyric Acid in Real-Time", *The Electrochemical Society Conference*, Dallas, TX, May 26-31, 2019.
2. Mahboubeh Madadi, Giovanni Petris & Leonidas Iasemidis, "Seizure detection using a hidden Markov model", *INFORMS Annual Meeting*, Phoenix, AZ, Nov. 4-7, 2018.
3. L.D. Iasemidis, "Probing and Understanding the Micro and Macro Dynamics of Seizure and Memory Networks", 4th Annual Meeting of B.R.A.I.N. Initiative Principal Investigators, Washington DC, April 9th, 2018.
4. Omar Alamoudi & L.D. Iasemidis "Dynamical Connectivity in a Network of Neurons and Astrocytes in vitro in Response to Glutamate Excitation", 2018 REU, Louisiana Tech University, July, 2018.
5. Samuel Clary, Noah Huston, Dr. Hai Sun, Dr. Levi Good & Leonidas Iasemidis, "Detection of Epileptogenic Events Through Accelerometry, Electrodermal Activity, and Photoplethysmo-graphy from a Wrist Worn Wearable Watch", 2018 REU, Louisiana Tech University, July, 2018.
6. Kevin Holly & Leon Iasemidis, "Semi-automated MATLAB User Interface for sEEG Electrode Coordinate Approximation", 2018 REU, Louisiana Tech University, July, 2018.
7. Noah Hutson, Omar Alamoudi, Bharat Karumuri, Diana Pizzaro, Sandip Pati & Leonidas Iasemidis, "Epileptogenic Focus Localization from iEEG during Patients' Recovery from General Anaesthesia", 2018 REU, Louisiana Tech University, July, 2018.
8. Hunter Rasnic, Dr. Kevin Holly, Samuel Clary, Noah Hutson, Dr. Levi Good, Leon Iasemidis & Mark DeCoster, "The Role of Glial Density on Ca++ Mediated Events in Brain Cell Networks", 2018 REU, Louisiana Tech University, July, 2018.
9. Farnaz Rezaei, Kevin Holly, Sandip Pati & Leon Iasemidis, "Permutation Mutual Information and Application to Epileptogenic Focus Localization From intracranial EEG", 2018 REU, Louisiana Tech University, July, 2018.
10. Nicholas Udstad, Sai Mohan Rudrashetty, Noah Hutson, Levi Good & Leonidas Iasemidis, "iEEG Feature Analysis During Epileptogenesis in the Lithium-Pilocarpine Model of Epilepsy", 2018 REU, Louisiana Tech University, July, 2018.
11. Parker Willmon, Noah Hutson, Samuel Clary, Kevin Holly, Tim Doughty, Chao Tan, Prabhu Arumagam, Teresa Murray, Levi Good & Leonidas Iasemidis, "Mathematical Analysis of Simultaneously Recorded Glutamate and Electrical Current Signals in Rats induced to SE", 2018 REU, Louisiana Tech University, July, 2018.
12. Kelly Kneale, Emilia Toth, Dianna Pizzaro, Kristen Riley, Roy Martin, Leon Iasemidis & Sandip Pati, "Functional organization of the interictal state and its impact on cognition", American Epilepsy Society Annual Meeting, Washington DC, Dec. 1-5, 2017.
13. Noah Hutson, Omar Alamoudi, Bharat Karumuri, Diana Pizzaro, Sandip Pati & Leon Iasemidis, "Epileptogenic Focus Localization from iEEG Recordings before Tapering of AED Medication at the EMU", 2017 REU, Louisiana Tech University, July, 2017.

14. Wyatt Seed, Noah Hutson, Samuel Clary, Timothy Doughty, Teresa Murray, Marjan Madadi & Leon Iasemidis, "Effect of Status Epilepticus on Mean and Variance of Alpha EEG Power in the Rat Hippocampus", 2017 REU, Louisiana Tech University, July, 2017.
15. Javeia McCoy, Farnaz Rezaei, Noah Hutson, Samuel Clay, Sandip Pati & Leon Iasemidis, "Analysis of intracranial EEG in Epilepsy Via The Maximum Lyapunov Exponent in Different Frequency Bands", 2017 REU, Louisiana Tech University, July, 2017.
16. Joshua A. Adkinson, Bharat Karumuri, Ioannis Vlachos & Leonidas Iasemidis, "Localization of the epileptogenic focus from EEG frequency bands by network connectivity analysis of seizures of temporal lobe origin", 33nd Southern Biomedical Engineering Conference, Gulfport, Mississippi, March 17-19, 2017.
17. Bharat K. Karumuri, Vikas Mishra, Nicky Gautier, Rui Liu, Stephanie L. Villalba, Ioannis Vlachos, Edward Glasscock & Leonidas Iasemidis, "Brain-Heart Association as a biomarker for SUDEP", Industry Day 2016 Conference, Shreveport, October 1, 2016.
18. Joshua Adkinson, Bharat Karumuri, Rui Liu, Leonidas Iasemidis & Ioannis Vlachos, "Betweenness Centrality in Directed Brain Networks Localizes the Epileptogenic Focus from Low Frequency Activity in Seizures from Patients with Refractory Temporal Lobe Epilepsy", Industry Day 2016 Conference, Shreveport, October 1, 2016.
19. Biraj Shrestha, Ioannis Vlachos, Joshua Aaron Adkinson & Leonidas Iasemidis, "Distinguishing Motor imagery and motor execution limb movements using Phase Locked Value (PLV) and Eigen-Vector centrality", Industry Day 2016 Conference, Shreveport, October 1, 2016.
20. Rui Liu, Bharat Karumuri, Joshua Adkinson, Ioannis Vlachos & Leonidas Iasemidis , "Complexity Analysis of Preictal EEG using Gabor Entropy", Industry Day 2016 Conference, Shreveport, October 1, 2016.
21. Vikas Mishra, Nicky Gautier, Bharat K. Karumuri, Rui Liu, Ioannis Vlachos, Leonidas D. Iasemidis & Edward Glasscock, "*Scn2a*-null heterozygosity improves survival and modifies neurocardiac interaction in the *Kcna1*-null mouse model of SUDEP", Society for Neuroscience, October, 2015.
22. L.D. Iasemidis & K. Tsakalis, "Application of homeostasis of brain dynamics to closed-loop control of epileptic seizures", IEEE EMBS, The BRAIN Grand Challenges conference, Washington DC, Nov. 13-14, 2014.
23. B. K. Karumuri , R. Liu, N. Gautier, I. Vlachos, E. Glasscock & L.D. Iasemidis, A novel biomarker for susceptibility to SUDEP: Long-term disassociation of EEG from ECG", Industry Day, Shreveport, LA, September 26, 2014
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25. A. Jain, R. Lui, J. Adkinson, I. Vlachos & L.D. Iasemidis, "Study of epileptic seizure susceptibility by spectral analysis of the EEG", 30th Southern Biomedical Engineering Conference, Gulfport, Mississippi, April 2014 (SBEC2014).
26. S. M. Rudrashetty, A. Pyakurel, R. Lui, B.R. Karumuri, I. Vlachos & L.D. Iasemidis, "Quantitative EEG Analysis for Differentiation of Sleep Disorders, 30th Southern Biomedical Engineering Conference, Gulfport, Mississippi, April 2014 (SBEC2014).
27. B. Krishnan, I. Vlachos, Z.I. Wang, J. Mosher, L.D. Iasemidis, R. Burgess & A.V. Alexopoulos, , "MEG Source Analysis and Directional Information Flow for Non-Invasive Interictal Epileptogenic Focus Localization in Patients with Non-Lesional MRI and Neocortical Epilepsy", 67th American Epilepsy Society Annual meeting, Washington DC, December, 2013.

28. L. Iasemidis, I. Vlachos, R. Liu & J. Adkinson, "Dynamics of epileptic seizures as revealed by analysis of EEG", Louisiana Academy of Science Meeting, Grambling State University, March 9, 2013.
29. L. Iasemidis, I. Vlachos, B. Krishnan, R. Sidique, E. Tobin, V. Venkataraman, A. Faith, S. Prasanna, A. Shafique, K. Tsakalis, S. Marsh, D. Treiman, S. Sabesan, S. Maschino, Reduction of seizure frequency by responsive just-in-time VNS in an animal model of chronic epilepsy, 66th American Epilepsy Society Annual meeting, San Diego, CA, December, 2012.
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33. Edward C. Tobin, Jamie White-James, I. Vlachos, B. Krishnan, Vinay Kataraman, L.D. Iasemidis & D. Treiman, "Long-term EEG dynamics following Traumatic Brain Injury in a rat model of Post-traumatic Epilepsy", Neurotrauma 2012 Symposium, Phoenix, July 22-25, 2012.
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111. H.P. Zaveri, L.D. Iasemidis, J.C. Sackellares, W.J. Williams & T.W. Hood, "Multichannel spectral analysis in temporal lobe epilepsy", *J. of Clinical Neurophysiology*, 5: 340, 1988.

XII. NATIONAL AND INTERNATIONAL COLLABORATORS (current and past)

I) NATIONAL

1. ***Louisiana Tech University***

- **Katie Evans, PhD,** Associate Professor and Chair, Department of Mathematics and Statistics (2014 – 2021) (Mathematical Modeling)
- **Prabhu Arumugam, PhD,** Assistant Professor, Department of Mechanical Engineering (2014 – present) (Construction of novel electrochemical intracranial sensors)
- **Mark DeCoster, PhD,** Professor, Department of Biomedical Engineering (2014 – present) (Molecular and Cellular Biology – Neurotransmitters and Ca^{++} signals)
- **Terri Murray, PhD,** Assistant Professor, Department of Biomedical Engineering (2014 – present) (Long-term EEG and Optical Image monitoring in the brain of rodents)
- **Ioannis Vlachos, PhD,** Assistant Professor, Department of Mathematics and Statistics (2012 – 2016) (Time series and statistical Signal Processing)

2. ***Louisiana State University Shreveport Health Sciences***

- **Anil Nanda, MD,** Professor and Chair, Department of Neurosurgery (2013 - 2016) (EEG analysis in the OR)
- **Charles Fox, MD,** Professor and Chair, Department of Anaesthesia (2014-2015). (EEG analysis for depth of anaesthesia)

3. Southern Methodist University

- **Albert Edward Glasscock, PhD,** Associate Professor, Department of Biological Sciences (2014 – present) (Models of SUDEP; Heart-Brain-Lungs Interactions)

4. ***University of Arkansas***

- **John Greenfield, M.D.,** Professor and Chair, Department of Neurology (2014 - 2016) (Long-term EEG monitoring and analysis in epilepsy)
- **Linda Larson-Prior, PhD,** Professor, Department of Psychiatry (2016 – 2021) (Dense scalp EEG and Memory experiments)
- **Jennifer Kleiner Fausett, PhD,** Associate Professor, Department of Neuropsychology (2016 – 2021) (Memory experiments)
- **Jennifer Gess, PhD,** Associate Professor, Department of Neuropsychology (2016 – 2021) (Memory experiments)
- **Wanpracha Art Chaovalitwongse, PhD,** Professor, Department of Industrial Engineering (2004 - present) *(*Epileptic seizure prediction and diagnosis).

4. ***University of Alabama, Birmingham***

- **Timothy Gawne, PhD,** Associate Professor, Department of Vision Sciences (2016 – present) (MEG and Memory experiments)
- **Jerzy P. Szaflarski, MD, PhD,** Professor, Department of Neurology and Director of the Epilepsy Center (2016 – present) (Intracranial EEG at the EMU)
- **Roy Martin, MD,** Associate Professor, Department of Neuropsychology (2016 – present) (Memory experiments)

5. Arizona State University

- **Konstantinos Tsakalis**, **PhD,** Associate Professor, Department of Electrical Engineering (2000 – present) (Control of Systems, Implanted Closed-Loop Neurostimulators)
- **Andreas Spanias, PhD,** Professor, Department of Electrical Engineering (2000 – present). (Classical Signal Processing + Communications)
- **Jiping He, PhD,** Professor, Department of Bioengineering (2000 – 2004) (Prosthetics, Spinal Cord Rehabilitation, Adaptation, Cognition, Stroke Rehabilitation)
- **Jennie Si, PhD,** Professor, Department of Electrical Engineering (2000 – 2004) (Neural Networks + Pattern Recognition)
- **Frank Hoppenstead, PhD,** Professor, Director of the Center for Systems Science and Engineering Research, Departments of Electrical Engineering and Mathematics (2000 – 2006) (Neural Networks + Modeling)
- **Jim Sweeney, PhD,** Associate Professor and Associate Chair, Department of Bioengineering (2000 – 2006) (ECG, Pacemakers and Defibrillators)

6. University of Arizona

- **Hemant Kudrimoti, MD, PhD,** Assistant Professor, Department of Neurology,(2006-2007) (Epilepsy Monitoring Unit, Stimulation studies)
- **David Labiner, MD,** Professor, Department of Neurology, (2006-2007) (Epilepsy Monitoring Unit, Stimulation studies)

7. University of Florida

- **Panos M. Pardalos, PhD,** Professor, Department of Industrial and Systems Engineering (1993 – 2004) (Global Optimization, Modeling)
- **Jose C. Principe, PhD,** Professor, Department of Electrical and Computer Engineering (1993 - 2004) (Neural Networks, IC Design)
- **John G. Harris, PhD,** Professor, Department of Electrical and Computer Engineering (1999 – 2000) (BioMEMS, IC Design)
- **Zongan Qiu, PhD,** Associate Professor, Department of Physics (1998 – 2000) Statistical Physics, Phase Transitions.
- **J. Chris Sackellares, MD,** Professor, Departments of Neurology, Neuroscience and the Bioengineering Program (1986 – 2004) (Neurology, Epilepsy).
- **Paul Carney, MD,** Professor, Departments of Pediatrics and Neuroscience (1999 – 2004) (Neurology, Sleep, Epilepsy, Animal models)
- **Steven N. Roper, MD,** Professor, Department of Neurological Surgery (1993 – 2000) (Neurosurgery, Epilepsy Surgery)
- **Richard J. Melker, MD, PhD,** Professor, Departments of Anesthesiology and Pediatrics (1998 – 2000) (EEG and Anesthesia)
- **Johannes H. Van Oostrom, PhD,** Professor, Department of Biomedical Engineering (1999 – 2000) (Medical Instrumentation)

8. University of Michigan

- **William J. Williams, PhD,** Professor, Department of Electrical Engineering & Computer Science and Bioengineering Program (1984 -1993) (Digital Signal Processing, Time Frequency and Wavelet Transforms)
- **Daryl Kipke, PhD,** Professor, Department of Biomedical Engineering (2000 - 2004) (Neural Plasticity, Man-Machine Interfaces, Bio-electrodes)

9. Cleveland Clinic

- **Andreas Alexopoulos, MD,** Professor, Department of Neurology (2011 - present) (Dynamical analysis of MEG in epilepsy)
- **Demetris Serletis, MD, PhD,** Associate Professor, Department of Neurosurgery (2014 - present) (Neuromodulation in epilepsy)

10. Barrow Neurological Institute, Arizona

- **Jie Wu, PhD, MD,** Associate Professor and Director, Epilepsy Research (2001 – 2006) (Epilepsy, Neurophysiology, Animal models)
- **David Treiman, MD,** Professor Emeritus, Division of Clinical Epilepsy (2002 – present) (Electrical Stimulation, Seizure Control, Animal Models)
- **Sue Herman, MD,** Professor, Associate Chair of Neurology and Director of Clinical Epilepsy (2021 - present) (Epilepsy and Brain Injury Monitoring at EMU, ER and ICU)

11. Mayo Clinic, Arizona

- **Joseph Sirven, MD,** Professor and Chair, Department of Neurology (2003 - 2012) (Epilepsy Monitoring Unit, Clinical Neurophysiology).
- **Joseph Drazkowski, MD,** Associate Professor, Department of Neurology (2003 - 2012) (Epilepsy Monitoring Unit, Clinical Neurophysiology).
- **Katherine Noe, M.D., PhD,** Associate Professor, Department of Neurology (2003 - 2012) (Epilepsy Monitoring Unit, Clinical Neurophysiology).

12. Rutgers University

- **Hai Sun, MD**, **PhD,** Associate Professor, Department of Neurosurgery (2016 – 2020) (Epilepsy: Focus localization and stimulation studies)

13. Princeton University

- **Yannis Kevrekidis, PhD** , Professor, Department of Chemical and Biomedical Engineering and Applied Mathematics (2008 - 2009) (Dynamical Analysis of EEG)

14. Yale University

- **Hitten Zaveri, PhD,** Associate Research Scientist, Computational Neurophysiology Laboratory, Department of Neurology (1990 - present) (Epilepsy, Signal Processing)

15. Harvard University

- **Steven Schachter, MD,** Professor, Department of Neurology (2008 - 2010) Vagus nerve stimulation
- **Bernard Chang, MD,** Assistant Professor, Beth Israel Deaconess Medical Center, Department of Neurology (2008) (Epileptogenic focus localization)
- **Alexander Rotenberg, MD, Ph.D.,** Assistant Professor, Children's Hospital Boston, Department of Neurology (2008) (Animal and Human EMU)

16. Massachusetts Institute of Technology

- **John Guttag, PhD,** Dugald C. Jackson Professor, Department of Electrical Engineering and Computer Science (2008) (Dynamical analysis of brain waves)
- **Emery Brown, PhD, MD,** Edward Hood Taplin Professor of Medical Engineering and of Computational Neuroscience, Director, Harvard-MIT Health Sciences and Technology Program (2000-present) (Anaesthesia and EEG)

17. Carnegie Mellon University

- **Christos Faloutsos, PhD,** Professor, Department of Computer Science (2018-present) (Brain networks)
- **Bin He, PhD,** Professor and Chair, Department of Biomedical Engineering (2016-2021) (Modeling of iEEG and Seizure Prediction)

18. Johns Hopkins University

- **Nitish Thakor, PhD,** Professor, Department of Biomedical Engineering (2016-2021) (Brain Monitoring: From bench to bedside)

19. University of Pennsylvania

- **Brian Litt, MD,** Professor of Neurology and Bioengineering (2000-2012) (Seizure prediction)

20. University of Rhode Island

- **Walter Besio, PhD,** Professor, Department of Electrical, Computer and Biomedical Engineering (2008) (Epilepsy, Animal studies)

21. University of New Mexico

- **Fadi Xu, MD**, Associate Professor, Lovelace Respiratory Research Institute (Respiration animal studies in epilepsy)
- **Christopher Abbott, MD**, Professor, Psychiatry (2020-present) (ECT studies and Seizures)
- **Andrew Carlson MD,** Assistant Professor, Neurosurgery (2022 – present) (Spreading Depolarization)

22. University of Texas Southwestern Medical Center, Dallas, TX

- **Juan Pascual, MD, PhD,** Professor, Department of Neurology (2021 – present) (Stroke animal models)

23. University of Texas, Health Science Center, Houston, TX

- **Samden Lhatoo, MD,** Professor and Executive Vice Chair, Neurology; Director of Texas Comprehensive Epilepsy program (TCEP); Co-Director of Texas Institute of Restorative Neurotechnologies (2021 – present) (SUDEP studies in humans)
- **Sandip Pati, MD,** Associate Professor, Department of Neurology (2016 - present) (Focus localization, Epileptic and Memory networks)

24. Albert Einstein College of Medicine and Montefiore Medical Center

- **Aristea Galanopoulou MD, PhD**, Professor in Neurology and Neuroscience, Albert Einstein College of Medicine, New York (2021 – present) (Covid-19 neurological studies in humans)
- **Solomon (Nico) L. Moshe, MD**, Professor of Neurology, Neurosurgery, Neuroscience and Pediatrics, Vice Chair of Neurology, Director of Child Neurology and Clinical Neurophysiology (1991 – present) (Organomics studies in covid-19 patients)

II) INTERNATIONAL

25. University of Bonn, Germany

- **Klaus Lehnertz, PhD,** Professor, Director Neurophysics Group, Department of Epileptology, Medical Center (2001 - 2002) (Epileptic Seizure Prediction)

26. University of Jena, Germany

- **Karin Schiecke, PhD,** Senior Research Fellow, Institute of Medical Statistics, Computer and Data Sciences (2017 - present) (Computational Neuroscience)

27. The Free University of Amsterdam, Netherlands

- **Stiliyan Kalitzin, PhD,** Professor, Head of Medical Physics Department (2001 – 2012) (Epileptic Seizure Prediction)
- **Demetris Velis, MD,** Professor, Head of Neurology, Epileptology Clinic, (2001 – 2012) (Epileptic Seizure Prediction, Neurological Disorders)

28. The National Center for Scientific Research (CNRS) of France

- **Michel Le Van Quyen, PhD,** National Center of Scientific Research (CNRS), Institute of Federal Research in Neurosciences (IFNRS), Paris *(2001)* (Epileptic Seizure Prediction)

29. University of Vienna, Austria

- **Christoph Baumgartner**, **MD***,* Head, Comprehensive Epilepsy Center, Department of Neurology, General Hospital Hietzing with Neurological Center Rosenhugel, Riedelgasse 5, A-330, Vienna, Austria**,** christoph.baumgartner@wienkav.at, Ph. +43-1-88000-266, Fax +43-1-88000-384 (Seizure detection)

30. Foundation for Research and Technology, Heraclion, Crete, Greece

- **Giorgos Giannakakis, PhD**, Senior Scientist, Institute of Computer Science, Computatonal Biomedicine Lab, (2021-present) (Seizure Biomarkers)

31. Aristotle University, Thessaloniki, Greece

- **Dimitris Kugiumtzis, PhD**, Professor, Department of Mathematical, Physical and Computational Sciences (2001 – present) (Statistics of seizure prediction)

32. Norway

- **Paal Larsson, MD,** Professor, Epilepsy Monitoring Unit (Clinical neurophysiology studies)
- **Per Gunnar Kjeldsberg, PhD,** Associate Professor, Department of Electronics and Telecommunication, Norwegian University of Science and Technology, O.S. Bragstads Plass 2A, NO-7491 TRONDHEIM, NORWAY; Telephone: +47 7359 4405; Cell phone: +47 9345 9550; Fax: +47 7359 1441 per.gunnar.kjeldsberg@iet.ntnu.no. (2011 – 2012). (Hardware for a seizure prediction device)

33. Czech Republic

- **Vladimir Krajca, PhD,** Assistant Professor, Technical University at Ostrava; Senior Medical Engineer, Department of Neurology, Faculty Hospital Bulovka, Prague (1995 – 2000) (Conventional EEG analysis)

34. The University of Delhi, India

- **Awadhesh Prasad, PhD,** Associate Professor, Dept. of Physics (2001 – present*) (*Transitions in network of chaotic oscillators)

35. East China Normal University, Sanghai, China

- **Zonghua Liu, PhD,** Associate Professor, Dept. of Physics (2003 – present*) (*Phase estimation)

36. University of Florence, Italy

- **Leonardo Bocchi, PhD,** Professor, Dept. of Information Engineering (2018 – present) (Diabetes; ECG, Respiration, Perfusion)

37. University College, London, England

- **David Holder, PhD**, Professor of Biophysics and Clinical Neurophysiology (2018-present) (Vagus Nerve, ECG, Respiration)