

CURRICULUM VITAE

NAME	POSITION TITLE
Ibtissam Echchgadda	Senior Research Biological Scientist
ADDRESS WORK	ADDRESS WORK
Air Force Research Laboratory Human Systems Directorate 711 Human Performance Wing Radio Frequency Bioeffects Branch 4141 Petroleum Road JBSA Fort Sam Houston, Texas 78234, USA 210-539-8004 (Work) Ibtissam.echchgadda.1@us.af.mil	33 Park Mountain San Antonio, Texas 78255, USA 210-279-9739 (Cell) iechchga@hotmail.com

EDUCATION

INSTITUTION AND LOCATION	DEGREE	YEAR	FIELD OF STUDY
University of TX Health Science Center at San Antonio <i>Non-Thesis</i>	M.S.	2010	Clinical Investigation
University of TX Health Science Center at San Antonio Award for Academic Excellence in Doctoral Studies <i>Dissertation Title: Dehydroepiandrosterone Sulfotransferase Gene Induction through Bile Acid and Xenobiotic Signaling: The Central Role of Orphan Nuclear Receptors.</i> <i>Adviser: Dr. Bandana Chatterjee</i>	Ph.D.	2003	Cellular and Structural Biology
Vrije Universiteit Brussels, Belgium Great Distinction for Master Studies <i>Thesis Title: Degradation Products of Antisense Oligonucleotides: Effects of Hematologic Cell Growth.</i> <i>Advisers: Dr. Jean-Luc Vaerman and Dr. Dominique Lattine</i>	M.S.	1998	Medical and Pharmaceutical Research
University Mly Ismail, Meknes, Morocco	B.S.	1995	General Biology

PROFESSIONAL EXPERIENCE

2019 – Present

Senior Research Biological Scientist. Principal Investigator on biological effects research portfolio for 711 Human Performance Wing, Radio Frequency Bioeffects Branch (711HPW/RHDR). Oversee interdisciplinary team of government, contract, and military scientists, as well as students and postdocs on concurrent basic research focused on radio frequency (RF) electromagnetic fields (EMFs) bioeffects ensuring safe military use of RF systems and enabling directed energy (DE)-based technologies. Manage a \$3.5M research program. Research emphasis on the bioeffects and the molecular and biophysical mechanisms that govern RF EMF interaction with biological systems at the molecular, cellular, and organismal levels. Other research relates to inactivation of virus by RF-DE, brain damage thresholds to RF, impacts of high peak power, short pulse exposures, and profiling of epigenetics, genomic, and proteomic effects of RF exposures. Defend research endeavors at high levels to DoD leadership, make critical decisions towards RF research and innovation through basic research funding from extramural and intramural funders. Actively collaborate with university experts and other government agencies. Responsibilities include managing execution of research efforts/funds, writing research proposals, technical reports, and peer-reviewed publications, and presenting data at national and international conferences and meetings. Air Force Research Laboratory (AFRL), 711HPW/RHDR, Joint Base San Antonio, TX

- 2014 – 2018 Research Biological Scientist. Served as a Principal Investigator on EMF research efforts. The research focused on terahertz (THz) bioeffects and THz spectroscopy, use continuous and pulsed THz systems and fluorescent microscopy to study cell/tissue responses, development of theoretical and empirical models for THz molecular coupling, and measurements of genomic and proteomic effects of THz exposures. Additional research efforts focused on identifying neurological effects of RF EMFs exposures and RF-induced fast thermal gradients/deposition to understand the interaction of EMFs and living systems. The work ensures the safe use of EMF radiation for both military and civilian populations and advance DE free-field operations. Responsibilities include overseeing/mentoring junior civilian, military and contract scientists, students, and postdoc fellows, supporting program management and execution of funds (\$4M value), maintaining interactive collaborations, presenting work to DoD internal visitors, and at national and international conferences and meetings, writing research proposals and defending progress, technical reports, and peer-reviewed manuscripts. AFRL, 711HPW/RHDR, Joint Base San Antonio, TX
- 2013-2014 Senior Scientist/Defense Contractor. General Dynamics Information Technology (GDIT). Acted as a Principal Investigator and Subject Matter Expert (SME) for cellular and molecular studies on the effects of THz radiation in biological cell and tissues. Planned, conducted, and supervised all aspects of the experiments and data analysis, and reports crafting. Actively contributed improvement and development of new laboratory techniques and maintained outstanding performance while on schedule. Was responsible for preparing scientific reports and manuscripts that summarized the work/results, and for presenting the findings in internal and external communications. Also, contributed to grant proposals brainstorming and writing. Proactively provided theoretical and practical assistance to colleagues and team members. AFRL, 711HPW/RHDR, Joint Base San Antonio, TX
- 2011-2013 Senior Scientist. National Academy of Sciences NRC Senior Associate. Led the execution of varied projects in the THz research laboratory. Studied THz-cell/tissue interactions and contributed to important discoveries in this area of research. Managed execution of the first in vivo THz spectroscopy study conducted on human subjects. Performed genomic/bioinformatics analyses of the data that culminated into proceedings, manuscripts, in-house communications, and oral presentation at national and international conferences. Theoretically and technically assisted colleagues and team members with various molecular and cellular biology approaches. AFRL, 711HPW/RHDR, Joint Base San Antonio, TX
- 2006-2011 Instructor. Designed, planned, and conducted original research related to multiple ongoing NIH-funded projects. Performed as a collaborating investigator with faculties at UTHSCSA, at UTSA and at the Southwest Research Institute to study important questions in the field of prostate cancer biology. Research aimed used various approaches to inhibit the growth of prostate tumor in mouse cancer models. Prepared animal use protocols needed for implementation of studies. Developed and assumed a lead role in a new project that assessed the oncolytic activity of the respiratory syncytial virus (RSV) against prostate tumors. In recognition, received awards from the American Association for Cancer Research, the Institute for Integration of Medicine and Science and from the Endocrine Society. Published results in peer reviewed journals and presented findings at national and international conferences. Actively and patiently trained student, junior researchers and postdoctoral fellows in cellular and molecular laboratory techniques and animal procedures as well as taught them the theoretical necessary background. Department of Molecular Medicine, University of TX Health Science Center at San Antonio, San Antonio, TX.
- 2006-2011 Adjunct Faculty. Taught General Biology and Nutrition courses, giving didactic lectures and providing guidance in laboratory techniques. Ran a very interactive classroom where students were comfortable speaking up and asking questions. Developed a broad range of teaching styles that helped assessment each student's capability, goals, and needs. Gained experience in preparing and presenting covered topics in a clear and organized manner within the scheduled time frame. Viewed a great teacher and mentor as judged by several students. Northwest Vista College (NVC), San Antonio, TX
- 2003-2006 Postdoctoral Fellow. Conducted investigations on different studies related to the regulation of drug and xenobiotic metabolism and to prostate cancer biology. Utilized methods in molecular and cell biology and performed experiments in animal models. Produced, analyzed, interpreted, and prepared results for publications and presentations. Published work in high impact journals and presented at local, national, and international conferences. Department of Molecular Medicine, University of TX Health Science Center at San Antonio, San Antonio, TX.

AWARDS/HONORS

- 2023 Harry G. Armstrong Scientific Achievement Award, Bioeffects Division (RHD) Nominee

- 2023 Collaboration of the Year Team (HADES Team) Wing Award Winner
- 2022 Airman System Directorate (RH), Category III Civilian of Quarter Winner
- 2020 RH S&T Achievement Team Award (VIDER Team) of the Year
- 2020 John L. McLucas Basic Research Award, Wing Nominee
- 2020 AFRL Annual International Team (DE Team) Award Winner
- 2020 711 HPW RHD Commander's Cup Team (DE Emergency Response Team)
- 2020 711 HPW RHD Category III Civilian of Quarter Winner
- 2019 SE&T Management Awards, 711 HPW/RHDR Nominee
- 2018 711 HPW RHD Category III Civilian of Quarter Winner
- 2016 S&T Achievement Award (Team) of the Year, RH Nominee
- 2016 Collaboration Award Team of the Year, RH Nominee
- 2016 General James Ferguson Award, 711 HPW/RHD Nominee
- 2015 RH S&T Achievement Team Award
- 2015 711 HPW Bioeffects Division Category III Civilian of Quarter Winner
- 2011 Research Associateship Award, the National Research Council of the National Academy of Sciences, USA,
- 2011 Cancer Research Award, American Association for Cancer Research Minority-Serving Institution Faculty Scholar
- 2009 Translational Technology Resource Award, Institute for Integration of Medicine and Science, UTHSCSA
- 2004 The Grand Prize Research. Award for outstanding work of exceptional significance, UTHSCSA, Texas,
- 2004 Departmental Award for Academic Excellence in Doctoral Studies, UTHSCSA, Texas
- 2001 Glenn Foundation Scholarships for Research in the Biology of Aging Scholars, American Federation for Aging Research
- 1998 Great Distinction for Master Studies in Medical & Pharmaceutical Research, VUB, Brussels, Belgium

RECENT PROFESSIONAL SERVICE

2023-Present: Editorial Board Member, the Electromagnetic Biology and Medicine Journal

2023-Present: Board Member, AFRL/711 HPW Institutional Biosafety Committee (IBC)

2023-Present: Member of the IEEE International Committee on Electromagnetic Safety (ICES)

2020-Present: Reviewer for Bioelectromagnetics journal

2016-Present: Panelist for National Defense Science and Engineering Graduate Research Fellowship (NDSEG) Program

2015-Present: Panelist for Science, Mathematics and Research for Transformation (SMART) Scholarship Program

FUNDING:

- “Exploiting radiofrequency electromagnetic field hormesis to provide resilience to neurons” Air Force Office of Scientific Research LRIR, Role: Task Manager/PI, Funded at \$778,000 (2023-2025).
- “Assessment of Bioeffects from Thermal Wave Induced Transcranial Hyper-excitation (TWITCH)” AFRL/711th HPW Core Funds, Role: PI, Funded at \$595,118 (2021-2025).
- “Viral inactivation by directed energy radiation” Air Force Office of Scientific Research LRIR, Role: Co-PI, Funded at \$1,342,000 (2020-2024).
- “Establishment of a single-cell strategy to decipher biomarkers of directed energy exposure” 711th HPW Seedling Competition, Role: PI, Funded at \$93,000 (2021-2022).
- “Thermal dosimetry associated with brain exposure to 2.45 GHz (HAP studies)” AFRL/711th HPW Core Funds, Role: PI, Funded at \$225,000 (2021-2022).
- “Defining the intracellular mediators for radiofrequency wave modulation of neuronal activity” Air Force Office of Scientific Research LRIR, Role: Task Manager/PI, Funded at \$570,000 (2018-2021).
- “Exploration of cell noise: a new paradigm for biological control” DARPA RadioBio, Role: Co-PI, \$400,000 (2017-2018).
- “Epigenetic marks as readout for AF occupational stressors and their associated physiological events” 711th HPW Chief Scientist Seedling Award, Role: PI, Funded at \$120,000 (2017-2018).
- “Validating the existence of quantum mechanical coherence in cells (Fröhlich theory)” Air Force Office of Scientific Research LRIR, Role: Task Manager/PI, Funded at \$130,000 (2016-2017).
- “Validating the existence of quantum mechanical coherence in cells (Fröhlich theory)” 711th HPW Seedling Competition, Role: PI, Funded at \$100,000 (2015-2016).
- “Evoked Responses from Fast Thermal Gradients in the Brain” AFRL/711th HPW Core Funds, Role: PI, Funded at \$727,000 (2015-2018).
- “Terahertz Bioeffects” AFRL/711th HPW Core Funds, Role: PI, Funded at \$554,000 (2015-2018).

PUBLICATIONS

- Cantu, J. C., Butterworth, J. W., Payne, J. A., & [Echchgadda, I.](#) (2024). Transcriptional Response of Primary Hippocampal Neurons Following Exposure to 3.0 GHz Continuous Radiofrequency Electromagnetic Fields. *Bioelectromagnetics* (In Review).
- Mennona, N.J., Sedelnikova, A., [Echchgadda, I.](#), & Losert, W. (2023). Filament displacement image analytics tool for use in investigating dynamics of dense microtubule networks. *Physical Review E*, 108(3), 034411.
- Cantu, J. C., Butterworth, J. W., Peralta, X. G., Payne, J. A., & [Echchgadda, I.](#) (2023). Analysis of global DNA methylation changes in human keratinocytes immediately following exposure to a 900 MHz radiofrequency field. *Bioelectromagnetics*, 44(3-4), 77-89.
- Cantu, J. C., Barnes, R. A., Gamboa, B. M., Keister, A. S., [Echchgadda, I.](#), & Ibey, B. L. (2023). Effect of nanosecond pulsed electric fields (nsPEFs) on coronavirus survival. *AMB Express*, 13(1), 95.
- Cantu, J. C., Butterworth, J. W., Mylacraine, K. S., Ibey, B. L., Gamboa, B. M., Johnson, L. R., Thomas, R. J., Payne, J., Roach, W. P., & [Echchgadda, I.](#) (2023). Evaluation of inactivation of bovine coronavirus by low-level radiofrequency irradiation. *Scientific Reports* 13 (1), 9800.
- [Echchgadda, I.](#), Cantu, J. C., Butterworth, J., Gamboa, B., Barnes, R., Freeman, D. A., ... & Ibey, B. L. (2023). Evaluation of Viral Inactivation on Dry Surface by High Peak Power Microwave (HPPM) Exposure. *Bioelectromagnetics* 44(1-2), 5-16.
- [Echchgadda, I.](#), Cantu, J. C., Tolstykh, G. P., Butterworth, J. W., Payne, J. A., & Ibey, B. L. (2022). Changes in the excitability of primary hippocampal neurons following exposure to 3.0 GHz radiofrequency electromagnetic fields. *Scientific reports*, 12(1), 3506.
- Tolstykh, G. P., Ibey, B. L., Sedelnikova, A. V., Valdez, C. M., Cantu, J. C., & [Echchgadda, I.](#) (2020, February). Infrared laser-induced fast thermal gradient affects the excitability of primary hippocampal neurons. *Proc. SPIE 11238, Optical Interactions with Tissue and Cells XXXI*, 112380Z, pp. 100-110.
- Tolstykh, G. P., Sedelnikova, A. V., Ibey, B. L., Echchgadda, I., & Valdez, C. M. (2020, March). Pulsed infrared laser activates intracellular signaling in NG108 cells. *Proc. SPIE 11238, Optical Interactions with Tissue and Cells XXXI*, 1123810.
- Rafati, Y., Cantu, J. C., Sedelnikova, A., Tolstykh, G. P., Peralta, X. G., Valdez, C., & [Echchgadda, I.](#) (2020, February). Effect of microtubule resonant frequencies on neuronal cells. *SPIE 11238, Optical Interactions with Tissue and Cells XXXI*, 112381E, pp. 187-194).
- Peralta, X. G., Lipscomb, D., Wilmlink, G. J., & [Echchgadda, I.](#) (2019). Terahertz spectroscopy of human skin tissue models with different melanin content. *Biomedical optics express*, 10(6), 2942-2955.
- Roth, C. C., Glickman, R. D., Martens, S. L., [Echchgadda, I.](#), Beier, H. T., Barnes Jr, R. A., & Ibey, B. L. (2017). Adult human dermal fibroblasts exposed to nanosecond electrical pulses exhibit genetic biomarkers of mechanical stress. *Biochemistry and Biophysics Reports*, 9, 302-309.
- Moix, J. M., Parker, J. E., & [Echchgadda, I.](#) (2017). Qualitative behavior of the low-frequency vibrational dynamics of microtubules and the surrounding water. *The Journal of Physical Chemistry B*, 121(14), 3024-3031.
- Roth, C. C., Glickman, R. D., Tolstykh, G. P., Estlack, L. E., Moen, E. K., [Echchgadda, I.](#), ... & Ibey, B. L. (2016). Evaluation of the genetic response of U937 and jurkat cells to 10-nanosecond electrical pulses (nsEP). *PLoS one*, 11(5), e0154555.
- [Echchgadda, I.](#), Grundt, J. E., Cerna, C. Z., Roth, C. C., Payne, J. A., Ibey, B. L., & Wilmlink, G. J. (2015). Terahertz radiation: a non-contact tool for the selective stimulation of biological responses in human cells. *IEEE Transactions on Terahertz Science and Technology*, 6(1), 54-68.
- [Echchgadda, I.](#), Cerna, C. Z., Sloan, M. A., Elam, D. P., & Ibey, B. L. (2015, March). Effects of different terahertz frequencies on gene expression in human keratinocytes. *SPIE 11238, Optical Interactions with Tissue and Cells XXXI*, 9321, pp. 147-155
- Cerna, C. Z., Elam, D. P., [Echchgadda, I.](#), Sloan, M. A., & Wilmlink, G. J. (2014, March). State-of-the-art exposure chamber for highly controlled and reproducible THz biological effects studies. In *Optical Interactions with Tissue and Cells XXV; and Terahertz for Biomedical Applications* (Vol. 8941, pp. 253-261). SPIE.
- [Echchgadda, I.](#), Grundt, J. E., Cerna, C. Z., Roth, C. C., Ibey, B. L., & Wilmlink, G. J. (2014, September). Terahertz stimulate specific signaling pathways in human cells. In *2014 39th International Conference on Infrared, Millimeter, and Terahertz waves (IRMMW-THz)* (pp. 1-2). IEEE.
- [Echchgadda, I.](#), Roth, C. C., Cerna, C. Z., & Wilmlink, G. J. (2013). Temporal gene expression kinetics for human keratinocytes exposed to hyperthermic stress. *Cells*, 2(2), 224-243.
- [Echchgadda, I.](#), Grundt, J. A., Tarango, M., Ibey, B. L., Tongue, T., Liang, M., ... & Wilmlink, G. J. (2013). Using a portable terahertz spectrometer to measure the optical properties of in vivo human skin. *Journal of Biomedical Optics*, 18(12), 120503-120503.
- Lipscomb, D., [Echchgadda, I.](#), Ibey, B. L., Beier, H., Thomas, R. J., Peralta, X., & Wilmlink, G. J. (2012, February). Terahertz spectroscopy of dry, hydrated, and thermally denatured biological macromolecules. In *Optical Interactions with Tissue and Cells XXIII* (Vol. 8221, pp. 300-311). SPIE.
- Grundt, J. E., Cerna, C., Roth, C. C., Ibey, B. L., Lipscomb, D., [Echchgadda, I.](#), & Wilmlink, G. J. (2011, October). Terahertz radiation triggers a signature gene expression profile in human cells. In 2011

- [Echchgadda, I.](#), Chang, T. H., Sabbah, A., Bakri, I., Ikeno, Y., Hubbard, G. B., ... & Bose, S. (2011). Oncolytic targeting of androgen-sensitive prostate tumor by the respiratory syncytial virus (RSV): consequences of deficient interferon-dependent antiviral defense. *BMC cancer*, 11, 1-18.
- Alimirah, F., Vaishnav, A., McCormick, M., [Echchgadda, I.](#), Chatterjee, B., Mehta, R. G., & Peng, X. (2010). Functionality of unliganded VDR in breast cancer cells: repressive action on CYP24 basal transcription. *Molecular and cellular biochemistry*, 342, 143-150.
- [Echchgadda, I.](#), Kota, S., DeLa Cruz, I., Sabbah, A., Chang, T., Harnack, R., ... & Bose, S. (2009). Anticancer oncolytic activity of respiratory syncytial virus. *Cancer gene therapy*, 16(12), 923-935.
- Shi, L., Ko, S., Kim, S., [Echchgadda, I.](#), Oh, T. S., Song, C. S., & Chatterjee, B. (2008). Loss of androgen receptor in aging and oxidative stress through Myb protooncoprotein-regulated reciprocal chromatin dynamics of p53 and poly (ADP-ribose) polymerase PARP-1. *Journal of Biological Chemistry*, 283(52), 36474-36485.
- [Echchgadda, I.](#), Song, C. S., Oh, T., Ahmed, M., De La Cruz, I. J., & Chatterjee, B. (2007). The xenobiotic-sensing nuclear receptors pregnane X receptor, constitutive androstane receptor, and orphan nuclear receptor hepatocyte nuclear factor 4 α in the regulation of human steroid-/bile acid-sulfotransferase. *Molecular Endocrinology*, 21(9), 2099-2111.
- Seo, Y. K., Chung, Y. T., Kim, S., [Echchgadda, I.](#), Song, C. S., & Chatterjee, B. (2007). Xenobiotic-and vitamin D-responsive induction of the steroid/bile acid-sulfotransferase Sult2A1 in young and old mice: the role of a gene enhancer in the liver chromatin. *Gene*, 386(1-2), 218-223.
- Song, C. S., [Echchgadda, I.](#), Seo, Y. K., Oh, T., Kim, S., Kim, S. A., ... & Chatterjee, B. (2006). An essential role of the CAAT/enhancer binding protein- α in the vitamin D-induced expression of the human steroid/bile acid-sulfotransferase (SULT2A1). *Molecular Endocrinology*, 20(4), 795-808.
- Chatterjee, B., [Echchgadda, I.](#), & Song, C. S. (2005). Vitamin D receptor regulation of the steroid/bile acid sulfotransferase SULT2A1. *Methods in enzymology*, 400, 165-191.
- [Echchgadda, I.](#), Song, C. S., Oh, T. S., Cho, S. H., Rivera, O. J., & Chatterjee, B. (2004). Gene regulation for the senescence marker protein DHEA-sulfotransferase by the xenobiotic-activated nuclear pregnane X receptor (PXR). *Mechanisms of ageing and development*, 125(10-11), 733-745.
- [Echchgadda, I.](#), Song, C. S., Roy, A. K., & Chatterjee, B. (2004). Dehydroepiandrosterone sulfotransferase is a target for transcriptional induction by the vitamin D receptor. *Molecular pharmacology*, 65(3), 720-729.
- Song, C. S., [Echchgadda, I.](#), Baek, B. S., Ahn, S. C., Oh, T., Roy, A. K., & Chatterjee, B. (2001). Dehydroepiandrosterone sulfotransferase gene induction by bile acid activated farnesoid X receptor. *Journal of biological chemistry*, 276(45), 42549-42556.

Technical Reports

- Gomez J.A., Rivera-Lopez L.L., Rodriguez R. A., Maldonado L., Cerna C.Z., Williams W.C., Parker J.E. Voorhees W.B., Payne J.A., Butterworth J.W., [Echchgadda I.](#) Assessment of Bioeffects from Thermal Wave Induced Transcranial Hyper-excitation in Rats. (Technical Report No. AFRL-RH-FS-TR-2023; Distro C). JBSA Fort Sam Houston, TX: Air Force Research Laboratory. (RHDR).
- [Echchgadda, I.](#) (2023, September). Exploiting radio frequency electromagnetic field hormesis to provide resilience to neurons (Special Report No. AFRL RH-FS-SR-2023-124826, AFRL-2023-4806, cleared 2023, September 29, Distro A). JBSA Fort Sam Houston, TX: Air Force Research Laboratory. (RHDR)
- Boice, E. N., Rincon, M. G., Rangel, K. M., Maldonado, L. A., Mylacraine, K. S., [Echchgadda, I.](#) & Thomas, R. J. (2023, May). Effects of Exposure to a 6–11 GHz Sweep on a SARS-CoV-2 Surrogate Coronavirus. (Submitted) (Technical Report No. AFRL-RH-FS-TR-2023; Distro C). JBSA Fort Sam Houston, TX: Air Force Research Laboratory. (RHDR).
- [Echchgadda, I.](#) (2022, October) Defining the intracellular mediators for radiofrequency wave modulation of neuronal activity (Special Report No. AFRL-RH-FS-SR-2022-123704, AFRL-2022-5059; cleared 2022, October 19, Distro A). JBSA Fort Sam Houston, TX: Air Force Research Laboratory. (RHDR)
- Parker, J. E., Butterworth, J. W., Freeman, D. A., Rodriguez, R. A., Sloan, M. A., Tolstykh, G. P., Voorhees, W. B., Payne, J. A., & [Echchgadda, I.](#), (2022, March). Assessment of rodent brain injury induced by short duration, high peak power, 2.45 GHz microwave pulses (Technical Report No. AFRL-RH-FS-TR-2022-0016, cleared 2022, December 19, Distro C). JBSA Fort Sam Houston, TX: Air Force Research Laboratory. (RHDR)
- Cantu, J. C., Burns, J. M., Fines, D. A., Rodriguez, R. A., Downey, A. X., Payne, J. A., Valdez, C. M., & [Echchgadda, I.](#) (2022, April). Thermal Wave Induced Transcranial Hyper-excitation (TWITCH) in 2.45 GHz-Exposed Rat (*Rattus norvegicus*). (Technical Report No. AFRL-RH-FS-TR-2022; Distro C). JBSA Fort Sam Houston, TX: Air Force Research Laboratory. (RHDR).
- Butterworth, J. W., Rodriguez, R. A., Cantu, J. C., Freeman, D. A., Gamboa, B. M., Mylacraine, K. S., Ruhr, F. A., Williams, W. C., Barnes, R. A., Johnson, L. R., [Echchgadda, I.](#), Ibey, B. L., Thomas, R. J., & Payne, J. A. (2021, September). Empirical and computational dosimetry in support of microwave-induced virus inactivation studies (Technical Report No. AFRL-RH-FS-TR-2021-0011; cleared 2021, October 21, Distro C). JBSA Fort Sam Houston, TX: Air Force Research Laboratory. (RHDR)

- Echchgadda, I., Cantu, J. C., Tolstykh, G. P., Butterworth, J. W., & Payne, J. A. (2020, November) Defining the intracellular mediators for radiofrequency wave modulation of neuronal activity (Special Report No. AFRL-RH-FS-SR-2010-121520, TSRL-PA-2020-0197; cleared 2020, November 04, Distro A). JBSA Fort Sam Houston, TX: Air Force Research Laboratory. (RHDR)
- Echchgadda, I., Cantu, J. C., & Tolstykh, G. P. (2019, October). Defining the intracellular mediators for radiofrequency wave modulation of neuronal activity (Special Report No. AFRL-RH-FS-SR-2019-120511; cleared 2019, November 18, Distro A). JBSA Fort Sam Houston, TX: Air Force Research Laboratory. (RHDR)
- Burns, J. M., Omer, T. J., Cerna, C. Z., Tolstykh, G. P., & Echchgadda, I. (2019, March). Evoked responses from 1470 nm laser-induced fast thermal gradients in the brain in rats (Technical Report No. AFRL-RH-FS-TR-2019-0002; cleared 2019, March 19, Distro C). JBSA Fort Sam Houston, TX: Air Force Research Laboratory. (RHDR)
- Omer, T. J., Burns, J. M., Cerna, C. Z., & Echchgadda, I. (2018, February). Modeling of 1470 nm laser-tissue interaction in the brain in rats (Technical Report No. AFRL-RH-FS-TR-2018-0016; cleared 2018, July 9, Distro C). JBSA Fort Sam Houston, TX: Air Force Research Laboratory. (RHDR)
- Echchgadda, I., Cerna, C. Z., Roth, C. C., Grundt, J., Ibey, B. L., & Wilmink, G. J. (2014, April). Terahertz radiation: A non-contact tool for the selective stimulation of biological responses in human cells (Technical Report No. AFRL-RH-FS-TR-2014-0049; cleared 2015, March 20, Distro C). JBSA Fort Sam Houston, TX: Air Force Research Laboratory. (RHDR)
- Sloan, M. A., Cerna, C. Z., Echchgadda, I., Cook, M. C., & Goettl, B. P. (2015, July). Molecular bioeffects of 2.06 GHz microwave exposure in the laboratory rat (*Rattus norvegicus*) (Technical Report No. AFRL-RH-FS-TR-2015-0033; cleared 2016, April 22, Distro C). JBSA Fort Sam Houston, TX: Air Force Research Laboratory. (RHDR)

CONFERENCE PRESENTATIONS

- Echchgadda I, Cantu JC, Butterworth JW, Payne JA. Effect of Exposure to 3.0 GHz Radiofrequency Electromagnetic Fields on Gene Expression in Primary Hippocampal Neurons. BioEM 2023, June 18-23, Oxford, United Kingdom.
- Echchgadda I, Sedelnikova A, Cantu JC. Investigation of changes in tubulin post-modifications (PTMs) following radiofrequency (RF) exposure in cultured neuronal cells. BioEM 2022, June 19-24, Nagoya, Japan.
- Cantu JC, Ibey BL, Butterworth JW, Mylacraine KS, Gamboa BM, Johnson LR, Thomas RJ, Payne JA, Roach WP, Echchgadda I. Evaluation of Inactivation of Bovine Coronavirus by Low-Level Radiofrequency Irradiation. BioEM 2021, September 26 – October 1, 2021.
- Cantu JC, Echchgadda I, Butterworth JW, Mylacraine KS, Gamboa BM, Johnson LR, Thomas RJ, Payne JA, Roach WP, Ibey BL. Effect of High Peak Power Microwaves (HPPM) on Bovine Coronavirus (BCoV) Survival in Solution. BioEM 2021, September 26 – October 1, 2021.
- Huang CJ, Cantu JC, Echchgadda I. Profiling gene expression of human keratinocytes in response to 900 MHz radiofrequency exposure. SPIE Photonics West, San Francisco, California. March 6-11, 2021
- Echchgadda I, Tolstykh GP. Induced Fast Thermal Gradient Alters the Excitability and Synaptic Activity of Hippocampal Neurons. FENS Forum of Neuroscience, Glasgow, Scotland, UK. July 11-15, 2020
- Cantu JC, Tolstykh GP, Echchgadda I. Exposure to Microtubule Resonant Frequency Modulates Neuronal Activity. 12th FENS Forum of Neuroscience, Glasgow, Scotland, UK. July 11-15, 2020.
- Rafati Y, Cantu JC, Sedelnikova A, Tolstykh GP, Peralta XG, Valdez C, Echchgadda I. Effect of Microtubule Resonance Frequencies on Neuronal Cells. SPIE Photonics West, San Francisco, California. March 2-7, 2020
- Echchgadda I, Ibey BL, Peralta XG, Cerna CZ, Cantu JC. Epigenetic Changes Following Exposure to Radiofrequency Fields. 2019 BioEM, Montpellier, France June 23-28, 2019
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