

ELIE D. AL-CHAER, PHD, JD
LAWYER – INNOVATOR – EDITOR

120 Traveler Lane
Maumelle AR, 72113

www.alchaer.com

(501) 920-5242

FULL NAME: Elie Diab Al-Chaer
DATE OF BIRTH: April 1968
CITIZENSHIP: United States
LANGUAGES: English, French, and Arabic (*All 3 fluently spoken, read & written*)

A multilingual professional and a very quick mind with >20 years experience, an insider's perspective and proven leadership in research, science, healthcare and related laws. Outstanding organizational and writing skills, with high-impact executive presentation abilities. A demonstrated talent to select, train and retain self-motivated goal-oriented professionals. Well published and recipient of numerous awards and recognitions in Biomedical Research, Leadership and Law. Exceptional interpersonal and communication skills.

EDUCATION

After finishing High School at the "Collège des Frères, Mont La Salle" (a *Private French Catholic School*) Aïn Saadé, Lebanon,

B.S. (May 1988) Mathematics, Faculty of Arts and Sciences, American University of Beirut, New York Universities Board, Beirut, Lebanon
M.S. (Aug. 1991) Physiology, Faculty of Medicine, American University of Beirut, New York Universities Board, Beirut, Lebanon
Ph.D. (Dec. 1996) Neuroscience, Graduate School of Biomedical Sciences, University of Texas Medical Branch, Galveston, Texas, USA
J. D. (May 2002) Doctor of Jurisprudence, Houston College of Law (formerly South Texas College of Law), Houston, Texas, USA
Certificate (2005) International Policy and Foreign Affairs Course, Clinton School of Public Service, Little Rock, Arkansas, USA
Certificate (2007) Leadership Institute, University of Arkansas for Medical Sciences, Little Rock, Arkansas, USA

BIOMEDICAL WORK HISTORY

AMERICAN UNIVERSITY OF BEIRUT

2013 - 2022

Beirut, Lebanon

Professor of Neuroscience

- Research interests: neuroscience of sensory systems, pain mechanisms.
- Courses taught: Brain & Cognition, Neuroscience, Neuroethics

Chairman Department of Anatomy, Cell Biology and Physiological Sciences, Faculty of Medicine.

Manage the workings of an academic department with faculty at all ranks, lead staff meetings, handle budgetary issues, provide leadership and faculty mentoring and development, write annual performance reviews, promotion and tenure recommendations and advanced curricular proposals. Additionally, oversee the admission and selection of students as well as the functions of 3 departmental graduate programs.

Chairman Interfaculty Neuroscience Graduate Program
Oversee the core curriculum, the admission and selection of students as well as the functions of the graduate program between various schools on campus.

Other functions

Senate Steering Committee, Chair
Council of Economic Advisors to the President
Compliance working group, University Accreditation Committee
Campus Strategic Planning Steering Committee
Policies & Procedures Review Committee
Diana Tamari Sabbagh Scholars Program (DTSSP), Coordinator
Faculty of Medicine Advisory Committee
Promotion & Tenure - Policies and Implementation Task Force, co-Chair
Professionalism and Ethics Task Force
Institutional Review Board (IRB)

UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES **2004 - 2013**
Little Rock, AR, USA

Professor with tenure (since 2009) Departments of Pediatrics, Internal Medicine, Neurobiology and Developmental Sciences, College of Medicine.

Director of Planning and Governance Translational Research Institute (TRI)
Organization and funding with a transformative vision that integrates research and education between all schools and programs. Oversight of administration (compliance) and operations (streamlining), budget (prioritization and allocation), evaluation (benchmarking and outcomes) and continued strategic planning. Service on a great number of institutional committees as chair, member or ex-officio including the Chancellor's cabinet.

Other functions

Center for Pain Research, Director
Faculty development committee
Recruitment and retention committee

UNIVERSITY OF TEXAS MEDICAL BRANCH **1998 - 2004**
Galveston, TX, USA

Assistant Professor (tenure track) Departments of Internal Medicine and Anatomy and Neurosciences, School of Medicine.

Other functions

Admissions committee
Examination committee

LEGAL EXPERIENCE

Attorney & Counselor at Law

2002 - Present

District of Columbia, Court of Appeals

2006 - Present

State Bar of Texas

2002 - Present

Private practice:

AlChaer Law Firm - Galveston TX, Dallas TX, and Washington DC

Clients:

Healthcare organizations, professionals & select international clients.

Services:

- Business planning, professional liability, compliance & regulatory, contracts, strategy and representation, grievance, negotiations & conflict resolution, visas & immigration, blockchain technology, artificial intelligence, family law, advisory services
- Counseling and representation of individuals, professionals (medical practitioners, hospital staff, university professors) and corporate (healthcare agencies, small businesses)
- Drafting, reviewing and implementing pre-clinical, translational and clinical research and development plans, contracts and agreements including sponsored research and collaboration agreements, material transfer, in-licensing, IP management, etc.
- Drafting, reviewing and monitoring regulatory and compliance policies for corporate entities including compliance with US laws, rules and regulations (Title VII, Title IX, OSHA, FERPA, OFAC and SDN Lists, etc.)
- Drafting, reviewing and monitoring business strategies for corporate entities including strategic plans, organizational structure, bylaws, etc.
- Regularly invited to give Continuing Legal Education (CLE) talks on topics ranging from legal ethics in Medical Practice Law to Cryptocurrency and Blockchain Technology.

Professor of Law

Contracts and Commercial Law

Ivy Tech Community College, Indiana, USA

2023 - Present

Cryptocurrency for Lawyers

Artificial Intelligence and the Law

National Academy for Continuing Legal Education

2021 - Present

Professional / Legal Consultant

- Texas Virtual Legal Advice Clinic and the American Bar Association Free Legal Answers: *advisor and legal counsel* (pro bono)
Service Areas include: Family, Divorce, Custody, Housing, Eviction, Homelessness, Consumer Rights, Financial, Work, Employment, Unemployment, Health and Disability, Civil Rights, Income Maintenance, Juvenile and Education Law.
- Lebanese Order of Nurses, *advisor and legal counsel* (pro bono)
- AUBMC Medical Committee, *advisor and legal counsel*
- International Foundation for Functional Gastrointestinal Disorders (IFFGD), USA-based, *Advisory Board*
- Allergan Inc, Irvine, CA, USA, *Pain Advisory Board*
- Sigma Health Care, Inc. Galveston, TX, USA, *Strategic consultant, Governing Board*

PUBLIC SERVICE / LEADERSHIP

Healthcare Strategy and Advocacy

- National Response Committee to COVID-19, Lebanon
- Committee on Drafting the Ethical Framework and Guidelines for Emergency Response, Lebanon
- Healthcare Delivery and Reform Group (a volunteer NGO)
*In 2020 and in the aftermath of the COVID-19 pandemic and the economic collapse in Lebanon, I authored several position papers, chapters and talks ranging in scope from guidelines to rationing resources to fighting corruption (for a complete list, see publications under **Advocacy, Policy & Position Papers** section, p.20.*
- The National Steering Committee for the CTSA (Clinical and Translational Science Awards) Consortium, NIH, USA.

Professional Societies

Lebanese Society for Study of Pain (LSSP), *President Elect*
Healthcare Delivery and Reform Group (NGO), *Treasurer*
Association of Anatomy, Cell Biology and Neuroscience Chairs (AACBNC)
Lebanese Association for Diabetes Research (LADR), *Counsel & Executive Committee*
American Gastroenterological Association, *Political Action Committee (AGA-PAC)*
American Gastroenterological Association, *Underrepresented Minorities Committee*
Society for Clinical and Translational Sciences, *Finance Committee*
International Foundation for Functional Gastrointestinal Disorders, *Advisory Board*
Rome III Multinational Team on Functional Gastrointestinal Disorders Policy: a team of distinguished scientists and clinicians from around the world that meets every 10 years to shape the clinical and research policy of functional disorders for the next decade (Membership by invitation only).
American Pain Society (APS)
International Association for the Study of Pain (IASP)
Society for Neuroscience
DC Bar Association
American Bar Association (ABA)
State Bar of Texas

Scientific Review Panels

Chair NIH Special Council on Mind-Body Interactions and Health
Co-Chair NIH Special Emphasis Panel on Multi-disciplinary Approaches to the Study of Chronic Pelvic Pain (MAPP) Research Network (U01 grants).
Reviewer Peer Reviewed Medical Research Program (PRMRP), Department of Defense (DOD)
NIH Special Emphasis Panel for Specialized Centers of Interdisciplinary Research (SCOR) on Sex and Gender Factors Affecting Women's Health.
NIH Advisory Panel on Multidisciplinary Approach to the Study of Chronic Pelvic Pain (MAPP) Research Network
NIH Grant Application Study Sections: Somatosensory and Chemosensory Science (Pain); SCS, Clinical Neuroplasticity and Neurotransmitters; Brain Disorders and Clinical Neuroscience.

NIH Grant Application Review Council: Neural Sciences and Disorders (NSD-C).
Ad-hoc reviewer for the National Science Foundation (NSF), the Veterans Administration Health System (VAHS), the National Student Research Forum (NSRF) and several international scientific and funding organizations (British, Czech, Chinese, Japanese, etc.).

Peer-review services

[International Journal of Women's Health](#), *Editor-in-Chief*

Other journals: Neuroscience, J. Neuroscience, J. Neurophysiology, Brain Research, Experimental Brain Research, Pain, J. Pain, European J. Pain, Gastroenterology, Neuro-gastroenterology, GUT.

TEACHING RESPONSIBILITIES / EXPERIENCE

Medical and Graduate School (*more than 25 years of experience*)

Chairman, MED-II Class Teaching Committee, AUB
Student Affairs Committee, Faculty of Medicine, AUB
Lecturer and Lead Consultant, The Ethics and Laws of Health Care, AUB
Course Coordinator, Integrated Medical Neuroscience course (Brain & Cognition), AUB
Lecturer, Neuroscience, Physiology and Cellular Mechanisms, AUB, UAMS, UTMB

Graduate Students Exam Committees

I mentored, co-mentored and served on the graduate exam committees of more than 70 MS and PhD students in the USA, Lebanon and around the world.

Law and Legal Studies

Adjunct Professor of Law, Ivy Tech College
Teaching Torts, Contracts, Business Planning and Organization, and Legal Ethics to paralegal, pre-law, and law students.
Certified Faculty, National Academy of Continuing Legal Education (NACLE)
Teaching Continuing Legal Education courses to lawyers in all 50 states of the USA.

RESEARCH / FUNDING

Following my relocation to Lebanon, all US-based funding stopped, including NIH and other.

Grant Support

1) Research Grants:

A) INTRAMURAL FUNDING:

Grant 1:

"Preemptive cuddling reduces long-term consequences of neonatal colon injury" \$37,000.00

Elie D. Al-Chaer, PhD, JD: Principal Investigator

07/01/13-06/30/19

Agency: AUBMC

Type: URB/MPP

Grant 2:

"Nitrous oxide alters hippocampal neurogenesis" \$15,000.00
 Elie D. Al-Chaer, PhD, JD: Principal Investigator 04/01/16-03/31/19
 Co-I: Wassim Abou Kheir, Georges Bekhazi
 Agency: AUBMC
 Type: URB/MPP

Grant 3:

"TBI and environmental enrichment" \$10,000.00
 PI: Hala Darwish, PhD 04/01/16-03/31/18
 Co-I: Elie D. Al-Chaer, PhD, JD (50%)
 Agency: AUBMC
 Type: URB/MPP

Grant 4:

"Flexible, high-density, photovoltaic penetrating retinal interface" \$28,000.00
 PI: Massoud Khreiche 04/01/18-03/31/20
 Co-I: Elie D. Al-Chaer PhD, JD (30%)
 Agency: AUB Farouk Jabre Award

B) EXTRAMURAL FUNDING:**Grant 1:**

"Role of the nociceptive innervation in the incisor's rat homeostasis" \$30,000.00
 PI: José Chidiac, DDS 03/01/16-02/28/19
 Co-I: Elie D. Al-Chaer, PhD, JD (50%)
 Agency: **CNRS**

Grant 2:

"Role of Microglia in Chronic Visceral Pain" \$415,352.00
 Elie Al-Chaer, Ph.D.: Principal Investigator (20%) 06/01/09-05/31/12
 Agency: National Institute of Digestive Diseases and Kidney (**NIDDK, NIH**)
 Type: R21DK081628

Grant 3:

"Sex Hormones and Visceral Hypersensitivity" \$1,800,000.00
 Elie D. Al-Chaer, PhD: Principal Investigator (50%) 04/01/08-03/31/14
 Agency: National Institute of Digestive Diseases and Kidney (**NIDDK, NIH**)
 Type: RO1 DK077733

Grant 4:

"Spinal Microglial Mechanisms of Visceral Hypersensitivity" \$484,316.00
 PI: Carl Y. Saab, PhD (Rhode Island Hospital) 07/01/10-06/30/12
 Elie Al-Chaer, PhD: Sub-contract Principal Investigator (20%)
 Agency: National Institute of Digestive Diseases and Kidney (**NIDDK, NIH**)
 Type: R21 DK081845

Grant 5:

"Mechanisms of Chronic Visceral Hyperalgesia" \$1,450,000.00
 Elie D. Al-Chaer, PhD: Principal Investigator 04/01/01-03/31/07
 Agency: National Institute of Neurological Disorders and Stroke (**NINDS, NIH**)
 Type: 1 RO1 NS/DK 40434

Grant 6:

"Visceral Pain"

Project 1 of a Program Project Grant (6 individual projects):

Program Director: William D. Willis, M.D., Ph.D.

Elie D. Al-Chaer, PhD: Collaborator

08/01/01-07/31/04

Agency: National Institute of Neurological Disorders and Stroke (**NINDS, NIH**)

Type: 5P01 NS 11255-24

08/15/96-07/31/06

2) Training Grants:

A) CENTRE NATIONAL DE RECHERCHE SCIENTIFIQUE:

Grant 1:

"Role of astrocyte Gq GPCR signaling in synapse function: implication for neurodegenerative diseases."

PI: Elie D. Al-Chaer, PhD, JD

10/17/16-10/16/19

Co-PI: Cendra AGULHON (Paris Descartes, France)

Agency: Centre National de Recherche Scientifique (**CNRS**)

B) NATIONAL INSTITUTES OF HEALTH:

Grant 1:

"Novel Mechanisms of Visceral Pain: Functional Properties of Microglia"

PI: Jennifer L. Watts, MD-PhD Student

7/1/09-6/30/13

Elie D. Al-Chaer, MS, PhD, JD: co-Investigator/mentor

Role: Sponsor / Supervisor

Agency: National Institutes of Health, **NIDDK**

Type: 1 F30 DK084606

Grant 2:

"Alpha2-adrenoceptors modulate TRPV4 and reduce inflammation-induced visceral pain"

PI: Martin R. Watts, MD-PhD Student

9/1/10-8/31/14

Elie D. Al-Chaer, MS, PhD, JD: co-Investigator/mentor

Role: Sponsor / Supervisor

Agency: National Institutes of Health, **NIDDK**

Type: 1 F30 DK089660

3) Institutional Grants:

A) NATIONAL INSTITUTES OF HEALTH:

Grant 1:

"Institute for Clinical and Translational Science"

\$22,560,000.00

PI: Curtis L. Lowery, Jr., MD

09/01/09-08/31/14

Elie D. Al-Chaer, MS, PhD, JD: co-Investigator

10%

Role: Director of Planning, co-Director of Governance

Agency: National Institutes of Health, **NCRR, NIH**

Type: UL1 RR029884, CTSA application

Grant 2:

"Institute for Clinical and Translational Science"

09/01/06-08/31/07

PI: Philip Kern, MD

Elie D. Al-Chaer, MS, PhD, JD: co-Investigator (20%)

Role: Director of Planning

Agency: National Institutes of Health, **NCRR**

Type: P20, planning application

Grant 3:

"The Center for Translational Neuroscience"

09/01/04-07/31/09

PI: Edgar Garcia-Rill, PhD

Elie D. Al-Chaer, MS, PhD, JD: Member (6%)

Role: Mentor

Agency: National Institutes of Health, **NCRR**

Type: COBRE application

4) Industry Research Grants:

Allergan, Inc , Irvine, CA.		\$639,530.00
Elie D. Al Chaer, PhD, JD: Principal Investigator	04/01/08 - 03/31/12	
Allergan, Inc , Irvine, CA.		\$1,426,530.00
Elie D. Al Chaer, PhD, JD: Principal Investigator	04/01/00 - 12/31/07	
GlaxoSmithKline , UK.		\$360,000.00
Elie D. Al Chaer, PhD, JD: Principal Investigator	05/01/02-09/30/07	

5) Biotechnology Development:

Designed, tested and implemented

- Electromagnetic Field Chamber for the enhancement of parasympathetic responses and treatment of cardiovascular and GI symptoms, pain and discomfort.
- Ultrasound stimulator to replace invasive electrical stimulation of deep brain tissues.
- Brain implantable, bioresorbable photovoltaic membrane with multi-array nano-electrodes.

ENTREPRENEURSHIP**A. Healtech, Inc.**

Austin, Texas

Founder, President and Chief Executive Officer of Healtech, Inc

2023 - Present

www.heal-tech.ai

HEALTECH is an Artificial Intelligence in Health startup founded in 2023 in collaboration with clinicians, healthcare industry experts, researchers, university professors, lawyers, and AI specialists. It is driven by the goal of revolutionizing healthcare through the power of data. We believe that AI has the potential to significantly optimize healthcare delivery processes, improve patient outcomes, enhance operational efficiency, and drive growth for healthcare providers and related businesses. Our primary focus is on delivering innovative solutions that empower our clients to thrive in the digital age. We understand the challenges faced by healthcare organizations in today's rapidly evolving landscape, and we provide them with cutting-edge technologies and strategies to succeed.

B. Solvit AI, Inc.

Austin, Texas

Founder, President and Chief Executive Officer of Healtech, Inc

2024 - Present

www.solvit.ltd

Solvit is an AI-powered solution for patient relations and healthcare management.

ADDITIONAL INFORMATION

A. Honors, Scholarships and Awards

International co-Chair, Global Symposium on Pain, hosted by the Pavlov Institute of Physiology and the Russian Academy of Science, St. Petersburg, Russia.

Plenary speaker, The Neuroscience International Symposium at Minas Gerais: "Dialogues between Neurosciences and the Clinic", Title of talk: "*The physiological basis of sex differences in pain mechanisms and management*"
Universidade Federal de Minas Gerais, Belo Horizonte, Brazil.

Plenary speaker, The Institute of Chinese Medicine Forum on Irritable bowel syndrome: "When East Meets West", Title of talk: "*Irritable Bowel Syndrome: A Tale of Sex, Drugs and Pain*" The Golden Egg Auditorium, Hong Kong Science Park, Shatin, Hong Kong, China.

Plenary speaker at the joint conference of the American Gastroenterological Association (AGA) and the British Society of Gastroenterology (BSG), Title of talk: "*Neuroplasticity in visceral pain*", Cambridge, UK.

Plenary speaker, professional development course, the British Society of Gastroenterology

Plenary speaker, Spring Brain Conference, Title of talk: "*The role of the dorsal columns in pain states*" Sedona, AZ, USA.

Invited speaker on "*The art and science of visceral pain: from neonatal plasticity to adult perception*" the Pain Research Center, the Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA.

Invited to evaluate a \$7.5 Million Program Project Grant and to speak on "*Plasticity of visceral pain circuitry in adult rats with neonatal colon injury*", Pain Program, University of Maryland Dental School, Baltimore, MD, USA.

The John C. Liebeskind Early Career Scholar Award, for exceptional accomplishment and promise in pain scholarship, *American Pain Society*

Outstanding Educator Award, Generalist Physician Investigator Program, UTMB
American Pain Society, Young Investigator Travel Award

The James E. Beall II Memorial Award in Anatomy and the Neurosciences

The Stephen C. Silverthorne Memorial Award for outstanding research in neurology

The Mustard Seed Award in Research for outstanding research and service in cancer pain, offered by the Sealy Society

High Honors, District of Columbia Courts

Pro Bono Leader, American Bar Association (ABA)

Judge, National Competitions in Negotiation, Mediation, ADR (ABA)

Phi Beta Phi, International Legal Fraternity, Highest award In International Law.

Who's Who among American Law Students

Dean's Honor List, South Texas College of Law

Law Review, South Texas College of Law

B. Invited Lectures

- 2024 (Nov) Invited speaker, the 22nd Annual International Conference of the Arab Academy of Sciences. Conference topic: Higher Education in the Arab World: Artificial Intelligence. Title of Talk: *"Mind the Algorithm: Charting a Responsible Course for AI in Higher Education"*, Beirut, Lebanon.
- 2024 (Apr) Invited speaker, the National Academy for Continuing Legal Education (NACLE), USA. Title of talk: *"The Rise of the Machines: A Lawyer's Guide to Avoiding Legal Extinction"*, online. (CLE: 1.25 credit).
- 2023 (Nov) Invited speaker, the 21st Annual International Conference of the Arab Academy of Sciences. Conference topic: Higher Education in the Arab World: Digital Transformation. Title of Talk: *"Intelligence Amplified: Exploring the Future of Higher Education in the AI Age"*, online.
- 2023 (Oct) Invited speaker, Internal Medicine / Cardiology Grand Rounds, SSM Health System, St. Louis, MO. Title of Talk: *"The Heartbeat of Innovation: Gauging AI's Rhythm at the Intersection of Health and Technology"*, online.
- 2023 (Oct) Invited speaker, LexTEN Society. Title of my Talk: *"Artificial Intelligence for Natural Dummies"*, Nashville, TN.
- 2023 (Apr) Invited speaker, the National Academy for Continuing Legal Education (NACLE), USA. Title of my talk: *"Navigating the Uncharted Legal Terrain of Artificial Intelligence"*, online. (CLE: 1.5 credit).
- 2023 (Jan) Invited speaker, Homo Libri and Jurista Sapientes Devil's Advocate series. Title of my talk: *"Bend it. Don't Break it: How to survive corruption without getting tainted or caught"*, Chicago, IL.
- 2022 (Nov) Invited speaker, the 20th Annual International Conference of the Arab Academy of Sciences. Conference topic: Higher Education in the Arab World: E-Learning and Distance Education. Title of my Talk: *"The Future of the University in a 21st Century Economy"*, online.
- 2022 (Apr) Invited speaker, the National Academy for Continuing Legal Education (NACLE), USA. Title of my talk: *"Bitcoin: Is it Time for Lawyers to Take a Byte?"*, online. (CLE: 1 credit).
- 2021 (Nov) Invited speaker, the 19th Annual International Conference of the Arab Academy of Sciences. Conference topic: Higher Education in the Arab World: New Priorities in the Post Covid-19 Era. Title of my Talk: *"The Future of the University Campus in the 21st Century"*, online.
- 2020 (Nov) Invited speaker, the 18th Annual International Conference of the Arab Academy of Sciences. Conference topic: Major Challenges Facing Higher Education in the Arab World: Research and Development. Title of my Talk: *"Managing Creativity on a Budget: The Future of Academic Research and Development in Lebanon"*, online.
- 2016 (Jul) Invited speaker, Academic Planning and Resources Symposium, Policies, Economics and Management, Title of Talk: *"The Nuts and Bolts of an Academic Strategic Plan"*, London, UK
- 2015 (Oct) Invited speaker, Medicine, Psychotherapy and Cultural Transmission Convention organized by the World Association of Psychotherapy, Title of Talk: *"Pain: Wormholes into Extra-Sensory Dimensions"*, Beirut, Lebanon

- 2015 (Sep) Invited speaker, Opiates and Pain Management (a Joint Symposium organized by the Lebanese Society for the Study of Pain (LSSP) and the Lebanese Society for the Treatment of Pain (LSTP), Title of talk: "*Opiates: A Historical Perspective*", Beirut, Lebanon
- 2015 (May) Invited speaker, Research Misconduct and Collaborative Research (a symposium by the Lebanese Association for Biosafety, Biosecurity & Bioethics, LABBB), Title of talk: "*Detecting Misconduct: Policies & Procedures*", Beirut, Lebanon
- 2015 (Apr) Invited Speaker, Mediterranean Conference on Higher Education, Title of Talk: "*Managing People's Creativity on an Institutional Budget: The Paradox of Academic Leadership*", Genoa, Italy
- 2014 (Dec) Invited speaker, Make Fibromyalgia Visible (a symposium by the Lebanese Society for the Study of Pain, LSSP), Title of talk: "*Fibromyalgia: a basis for translational studies*", Beirut, Lebanon
- 2014 (Nov) Guest speaker, Joint Symposium on Pain by the LSSP and the Lebanese Society for the Treatment of Pain, Title of talk: "*Chronic Functional Pain: Early-Life Residues and a Path of Redemption*", Phoenicia Hotel Conference Center, Beirut, Lebanon
- 2013 (Mar) Invited plenary speaker, Visceral Pain Symposium (organized by the LSSP), Title of talk: "*Hurting from Within: The Ins and Outs of Visceral Pain*", Beirut, Lebanon
- 2012 (Aug) Invited plenary speaker, Global Symposium on Pain 2012, Title of talk: "*Early Life Colon Injury and Adult Functional Abdominal Pain*", St. Petersburg, Russia.
- 2012 (Jun) Invited plenary speaker, the 2012 Neuroscience International Symposium at Minas Gerais: "Dialogues between Neurosciences and the Clinic", Title of talk: "*The physiological basis of sex differences in pain mechanisms and management*" Universidad Minas Gerais, Belo Horizonte, Brazil.
- 2010 (Oct) Invited plenary speaker, International Pelvic Pain Society Annual Scientific Meeting, Title of talk: "*Chronic Pelvic Pain: Early-Life Residues and a Path of Redemption*", Chicago, IL, USA.
- 2010 (July) Invited speaker, The American University of Beirut – Faculty of Medicine and Faculty of Arts and Sciences, Title of talk: "*A Translational Approach to the Study and Management of Visceral Pain*" Beirut, Lebanon.
- 2010 (Jan) Invited speaker, Perinatal Research Rounds, The University of Chicago – Pritzker School of Medicine and the NorthShore University Health System, Title of rounds: "*Visceral Pain: Insights from the Platonic Fold*" Evanston, IL, USA.
- 2010 (Jan) Invited speaker, Medicine and Obstetrics Gynecology Grand Rounds, The University of Chicago – Pritzker School of Medicine and the NorthShore University Health System, Title of grand rounds: "*Pain the Paradox of Scientific Advances and Clinical Retreats*" Chicago, IL, USA.
- 2010 (Jan) Invited speaker, Nationwide Children's Hospital and Ohio State University, Title of talk: "*Age, Pain and Neuroplasticity: Scientific Constructs and Outcome Realities*" Columbus, OH, USA.
- 2009 (Oct) Keynote speaker, Arkansas Chapter of the Society for Neuroscience, Title of talk: "*Neuroplasticity in Animal Models of Pain*" Little Rock, AR, USA.

- 2009 (July) Invited seminar, Eli Lilly and Company Pain and Migraine Drug Hunting Team, Title of seminar: "*Visceral Pain: Insights from the Platonic Fold*" Indianapolis, IN, USA.
- 2009 (Apr) Invited workshop, the 8th International Symposium on Functional Gastrointestinal Disorders, Title of workshop: "*Pain Pathways*" Milwaukee, WI, USA.
- 2009 (Mar) Invited plenary speaker, The Institute of Chinese Medicine Forum on Irritable Bowel Syndrome: "When East Meets West", Title of Talk: "*Irritable Bowel Syndrome: A Tale of Sex, Drugs and Pain*" Hong Kong Science Park, Shatin, Hong Kong.
- 2008 (Oct) Invited speaker, Department of Medicine, State University of New York (SUNY) Downstate Medical Center, Title of Talk: "*Functional Abdominal Pain: a Gut Feeling in the Brain*", Brooklyn, NY, USA.
- 2008 (Apr) Invited speaker, Rural Hospital Program, Title of Talk: "*Pain: a Primer on Neural Mechanisms and Management*" (satellite broadcast) Little Rock, AR, USA.
- 2007 (Apr) Invited plenary speaker, the 6th International Symposium on Functional Gastrointestinal Disorders, Title of Talk: "*Neuroplasticity and Functional Pain*" Milwaukee, WI, USA.
- 2007 (Apr) Invited workshop, the 6th International Symposium on Functional Gastrointestinal Disorders, Title of workshop: "*Pain Pathways*" Milwaukee, WI, USA.
- 2006 (Oct) Distinguished lecture, the Oklahoma Center for Neuroscience and the Department of Physiology, Oklahoma University Health Science Center. Title of talk: "*Visceral Pain: Reflections on Phylogeny, Physiology and Pathways*", Oklahoma City, OK, USA.
- 2006 (Sep) Invited Speaker, Queen Mary, University of London and The Royal London Hospital, Title of Talk: "*Visceral Pain: The Rhapsody of a Nervous System*", invited speaker, London, England, UK.
- 2006 (Sep) Plenary lecture, the joint conference of the American Gastroenterological Association and the British Society for Gastroenterology. Title of talk: "*Neuroplasticity in Visceral Pain*", Cambridge University, England, UK.
- 2006 (Jul) Plenary lecture, the Brain-Gut Symposium held at St. Anne's College, Oxford University. Title of talk: "*Animals Models of Visceral Pain*", Oxford, England, UK.
- 2005 (June) Invited Speaker, The University of Florida Comprehensive Center for Pain Research and the College of Dentistry Dean's Seminar Series, Title of talk: "*Functional Pain: the Rhapsody of a Nervous System*" The University of Florida, Gainesville, FL, USA.
- 2005 (Apr) Invited plenary speaker, the 6th International Symposium on Functional Gastrointestinal Disorders, Title of Talk: "*Neuroplasticity and Functional Pain*" Milwaukee, WI, USA.
- 2005 (Apr) Invited workshop, the 6th International Symposium on Functional Gastrointestinal Disorders, Title of workshop: "*Pain Pathways*" Milwaukee, WI, USA.
- 2005 (Mar) Invited Physiology Seminar, Title of talk: "*Behavioral and Neural Changes in Adult Rats Exposed to Neonatal Colon Injury*" Department of Physiology, College of Medicine, UAMS.

- 2005 (Feb) Invited Neurology Grand Rounds, Title of talk: "*Pain: Reflections on Phylogeny, Physiology and Pathways*" Department of Neurology, College of Medicine, UAMS
- 2005 (Feb) Seminar, "*Pain: the Rhapsody of a Nervous System*" Pain Arkansas Club, UAMS.
- 2005 (Jan) Invited Neurosurgery Grand Rounds, Title of talk: "*Visceral Pain: Mechanisms, Pathways and Surgical Solutions*" Department of Surgery, College of Medicine, UAMS.
- 2003 (Nov) Guest Speaker, The Arkansas Children's Hospital and the Department of Pediatrics at the University of Arkansas Medical School, Title of talk: "*Neonatal injury: an etiology of functional pain in adults*" Little Rock, AR, USA.
- 2003 (May) Invited Chair and Speaker, Symposium on Central Sensitization, Title of talk: "*Animal models of sensitization*" Digestive Diseases Week 2003, Orlando, FL, USA.
- 2003 (Mar.) Invited Plenary Speaker, Postgraduate Professional Development Course - British Society of Gastroenterology, Title of talk: "*Neonatal stressors and adult visceral hypersensitivity in GI disease*" Birmingham, UK.
- 2003 (Mar.) Invited Plenary Speaker, Spring Brain Conference, Plenary Session III, Title of talk: "*The role of the dorsal columns in pain states*" Sedona, AZ, USA.
- 2003 (Feb.) Guest Speaker, The Pain Advisory Board for Allergan Inc, Title of Talk: "*Pharmacological validation of an animal model of chronic functional abdominal pain*" Irvine, CA, USA.
- 2002 (Sep.) Moderator, Symposium on Basic Science – American Motility Society. Galveston, TX, USA.
- 2002 (June) Guest Speaker, The Pain Research Center at the Brigham and Women's Hospital, Harvard University. Title of talk: "*The art and science of visceral pain: from neonatal plasticity to adult perception*" Boston, MA, USA.
- 2002 (April) Speaker, The Spring Pain Research Conference. Title of talk: "*Chronic abdominal pain: the ghost of a painful past*" Grand Cayman, British West Indies.
- 2002 (April) Speaker, GlaxoSmithKline/Cambridge University Symposium. Title of talk: "*Functional bowel disorders in an animal model of chronic visceral pain*" Harlow, UK.
- 2002 (Mar.) Speaker, NIH Symposium: Oral, Craniofacial and Persistent Deep Pain. Title of talk: "*Neural plastic changes initiated by neonatal injury: the culprit in chronic visceral pain*" Baltimore, MD, USA.
- 2002 (Mar.) Guest Speaker, University of Maryland Dental School, Pain Program. Title of talk: "*Plasticity of visceral pain circuitry in adult rats with neonatal colon injury*" Baltimore, MD, USA.
- 2001 (Nov.) Speaker, The 2nd Annual International Course and Workshop On Gastrointestinal Motility/Functional Disorders. Title of talk: "*Biological Basis of Abdominal Pain*" Galveston, TX, USA.
- 2001 (Sep.) Speaker, The 18th International Symposium on Neurogastroenterology and Motility. Title of talk: "*Painful neonatal memories and functional bowel disorders*" Madison, Wisconsin, USA.

- 2001 (July) Speaker, "2001: A Brain-Gut Odyssey" meeting of the International Society for Brain-Gut Studies. Title of talk: "*On the Journey of Pain: from Gut to Brain*" University of Oxford, Oxford, UK.
- 2001 (May) Speaker, "Evolving Animal Models for Functional Gastrointestinal Disorders" a research symposium at the Digestive Diseases Week, 2001. Title of talk: "*Rat Model of Persistent Visceral Hyperalgesia Following Early Life Gut Irritation*" Atlanta, GA, USA.
- 2001 (April) Speaker, Seminar series at CURE, University of California at Los Angeles. Title of talk: "*Chronic Abdominal Pain: The Wounds That Never Heal*" Los Angeles, CA, USA.
- 2000 (Dec.) Speaker, International Course on Motility and Functional Bowel Disorders. Title of talk: "*The Pathogenesis of Visceral Hyperalgesia.*" Galveston, TX, USA.
- 2000 (Dec.) Coordinator and Speaker, Symposium on Gastrointestinal Pain. Title of talk: "*An Animal Model of IBS: The Key to the Puzzle in a Long Abandoned Challenge?*" University of Texas Medical Branch, Galveston, TX, USA.
- 2000 (Nov.) Chair and Speaker, Professional Development Course for the American Pain Society, Atlanta, GA, USA. Title of talk: "*Management of chronic visceral pain: an overview of basic research, psychophysics, symptoms, treatments and social correlates.*"
- 1999 (Oct.) Chair and Speaker, Symposium for the American Pain Society, Ft. Lauderdale, FL: "*Pathogenesis, pathways and processing of colon pain: a "state of the science" address.*"
- 1999 (Oct.) Speaker, Lecture for the Society for Neuroscience, "*Pain Research - On the Threshold of a New Millennium.*" Miami, FL.
- 1999 (May) Speaker, Seminar given for the Neuroscience Graduate Program, University of Texas Medical Branch, Title of talk: "*Ode to an Empty Bowel*" Galveston, Texas.
- 1998 (May) Speaker, Seminar, Digestive Disease Week 98, Title of talk: "*A quantitative basis for the dorsal column dominant role in visceral pain*". New Orleans, LA, USA.
- 1996 (Oct.) Speaker, Dissertation Defense Seminar, Dept. of Anatomy and Neurosciences, University of Texas Medical Branch, Title of talk: "*The role of the dorsal column in visceral pain*"; Galveston, Texas, USA.
- 1996 (Feb.) Speaker, Seminar given at the University of Oklahoma, Health Sciences Center. Title of talk: "*The role of the dorsal column in visceral pain*" Oklahoma City, OK.
- 1995 (Jan.) Speaker, Dissertation Proposal seminar for the degree of Doctor of Philosophy, Dept. of Anatomy and Neurosciences, UTMB, "*Visceral input into the ventral posterolateral nucleus of the thalamus: a pathway in the fasciculus gracilis involving the postsynaptic dorsal column system*" Galveston, Texas, USA.
- 1994 (Aug.) Speaker, Seminar given at the Dept. of Anatomy and Neurosciences, UTMB, title of talk: "*Viscero-somatic interactions in the thalamus: a possible role of the dorsal column*" Galveston, Texas, USA.

- 1991 (July) Speaker, Dissertation Defense seminar for the degree of Master of Sciences, Dept. of Physiology, Faculty of Medicine, AUB. Title of talk: "*Dorsal column input into the nucleus locus coeruleus*" Beirut, Lebanon.
- 1990 (June) Speaker, Seminar given at the dept. of Physiology, AUB. Title of talk: "*The role of the nucleus locus coeruleus in antinociception*" Beirut, Lebanon.

D. Making News

- Guest on the live broadcast of the COVID Studio (an AUB-ANNAHAR joint venture) talking about the *impact of COVID-19 on legal rights and duties*.
- Guest on the live broadcast of the National Public Radio: "Science Café" for a call-in interview on Pain; followed by a community forum at Science Café – Little Rock (<http://youtu.be/zjFhjGYcRLA>)
- Interviewed on the live broadcast of Voice of America's (VOA) daily international radio discussion "Talk to America", on the topic of Pain. "Talk to America" is the world's only international daily call-in/discussion program, broadcast in English aired over VOA's global short-wave transmitter network, as well via satellite, local radio stations overseas and the Internet. <http://www.voanews.com/talk>.
- Interviewed by *Science News* for an article entitled "Pain, Pain, Go Away" *Science News* 155: 108-110, February 1999.
- Interviewed by *BioPhotonics International* for an article entitled "Functional MRI shows pathway for visceral pain" *BioPhotonics International* pp. 26-28, March/April 1999.
- Interviewed by the British Broadcasting Corporation (BBC), Science Department, for a program entitled BBC Horizon.
- Interviewed by Medscape, CBS.
- Interviewed by *Radiology and Imaging Letter* for a Feature Article entitled "Researchers use Brain fMRI to find New Pathway to Resolve Pelvic Pain."
- Featured in *the Galveston County Daily News* under "UTMB Society awards 5 for services" *The Galveston County Daily News*.
- Interviewed by "*Le Nouveau Magazine*" (weekly political, economical and cultural Middle Eastern magazine in French) for an article entitled "Le Club Culturel de L'OCP en mission diplomatique." *Le Nouveau Magazine*.

INVENTIONS & PATENTS

- 2019 Alteration of Systemic Functional Outcomes Using Electromagnetic Field (EMF) and Methods of Use. U.S. Provisional Patent Application Serial No. 62/852,486

PUBLICATIONS

A. Articles in Peer-Reviewed Journals

1. **Al-Chaer, E.D.**, Lawand, N.B., Westlund, K.N. and Willis, W.D. Visceral nociceptive input into the ventral posterolateral nucleus of the thalamus: a new function of the dorsal column. *J. Neurophysiol.* 76:2661-2674, 1996.
2. **Al-Chaer, E.D.**, Lawand, N.B., Westlund, K.N. and Willis, W.D. Pelvic visceral input into the nucleus gracilis is largely mediated by the postsynaptic dorsal column pathway. *J. Neurophysiol.* 76: 2675-2690, 1996.
3. Hirshberg, R.M., **Al-Chaer, E.D.**, Lawand, N.B. Westlund, K.N. and Willis, W.D. Is there a pathway in the dorsal funiculus that signals visceral pain? *Pain* 67:291-305, 1996.
4. **Al-Chaer, E.D.**, Westlund, K.N. and Willis, W.D. Potentiation of thalamic responses to colorectal distension by visceral inflammation. *NeuroReport* 7:1635-1639, 1996.
5. **Al-Chaer, E.D.**, Westlund, K.N. and Willis, W.D. The dorsal column: A possible role in visceral hyperalgesia. In Jensen, T.S., Turner, J.A. and Wiesenfield-Hallin, Z. (ed): *Proceedings of the 8th world congress on pain*, vol. 8, 1997, pp. 839-853.
6. **Al-Chaer, E.D.**, Westlund, K.N. and Willis, W.D. The nucleus gracilis: an integrator for visceral and somatic information. *J. Neurophysiol.* 78:521-527, 1997.
7. **Al-Chaer, E.D.**, Westlund, K.N. and Willis, W.D. Effects of colon inflammation on the responses of postsynaptic dorsal column cells to visceral and cutaneous stimulation. *NeuroReport* 8: 3267-3273, 1997.
8. **Al-Chaer, E.D.**, Feng, Y. and Willis, W.D. A role for the dorsal column in nociceptive visceral input into the thalamus of primates. *J. Neurophysiol.* 79 (6): 3143-3150, 1998.
9. Feng, Y., Cui, M., **Al-Chaer, E.D.** and Willis, W.D. Epigastric antinociception by cervical dorsal column lesion in rats. *Anesthesiology* 89 (2): 411-420, 1998.
10. **Al-Chaer, E.D.**, Feng, Y. and Willis, W.D. A comparative study of viscerosomatic input onto postsynaptic dorsal column and spinothalamic tract neurons in the primate. *J. Neurophysiol.* 82 (4):1876-1882, 1999.
11. Willis, W.D., **Al-Chaer, E.D.**, Quast, M. J. and Westlund, K. N. A visceral pain pathway in the dorsal column of the spinal cord. In: *The Neurobiology of Pain*. By: The National Academy of Sciences (USA). *PNAS* 96 (14): 7675-7679, 1999.

12. Saab C.Y., Makki A., Quast M., Wei J., **Al-Chaer E.D.**, Willis W.D. Is the cerebellum involved in pain? In: *Proceedings of the 9th World Congress on Pain*, vol 16. IASP Press, Seattle, pp 515–522, 2000.
13. **Al-Chaer, E.D.**, Kawasaki, M. and Pasricha, P.J. A new model of chronic visceral hypersensitivity: in adult rats induced by colon irritation during postnatal development. *Gastroenterology* 119: 1276–1285, 2000.
14. Saab C.Y., Kawasaki M., **Al-Chaer E.D.** and Willis, W.D. Cerebellar cortical stimulation increases spinal visceral nociceptive responses. *J. Neurophysiol.* 85(6): 2359-2363, 2001.
15. Zhang, H.Q., **Al-Chaer, E.D.** and Willis, W.D. Effect of tactile inputs on thalamic responses to noxious colorectal distension in rat. *J. Neurophysiol.* 88:1185-1196, 2002.
16. Zhang, H.Q., Rong, P.J., Zhang, S.P., **Al-Chaer, E.D.** and Willis, W.D. Noxious visceral inputs enhance cutaneous tactile responses in rat thalamus. *Neurosci. Lett.* 336:109-112, 2003.
17. Lin, C. and **Al-Chaer, E.D.** Long-term sensitization of primary afferents in adult rats exposed to neonatal colon pain. *Brain Res.* 971: 73-82, 2003.
18. Kawasaki, M. and **Al-Chaer, E.D.** Intradermal capsaicin inhibits lumbar dorsal horn neuronal responses to colorectal distension. *NeuroReport* 14 (7): 985-9, 2003.
19. Arai, Y-C.P., Ueda, W. and **Al-Chaer, E.D.** Pre-anesthetic maternal separation increases pups' locomotor behavior during emergence from anesthesia in rats. *Acta Anaesthesiol Scand* 48: 174-177, 2004.
20. Saab, C.Y., Arai, Y-C.P. and **Al-Chaer, E.D.** Modulation of visceral nociceptive processing in the lumbar spinal cord following thalamic stimulation or inactivation and after dorsal column lesion in rats with neonatal colon irritation. *Brain Res.* 1008 (2): 186-192, 2004.
21. Arai, Y-C.P., Ueda, W and **Al-Chaer, E.D.** Pre-anesthetic presence of an injured dam influences pups' locomotor behavior during emergence from anesthesia in rats. *Acta Anaesthesiol Scand* 49: 166-169, 2005.
22. Lin, C and **Al-Chaer, E.D.** Differential effects of glutamate receptor antagonists on dorsal horn neurons responding to colorectal distension in a neonatal colon irritation rat model. *World J Gastroenterol* 41:6495-6502, 2005.
23. Grundy, D., **Al-Chaer, E.D.**, Aziz, Q., Collins, S.M., Ke, M., Tache, Y., Wood, J.D. Fundamentals of neurogastroenterology: basic science. *Gastroenterology* 130(5):1391-1411, 2006.

24. Saab, C.Y., Wang J., Gu, C., Garner, K.N. and **Al-Chaer, E.D.** Microglia: A newly discovered role in visceral hypersensitivity? *Neuron Glia Biology* 2: 271-277, 2006.
25. Hayar A.M., Gu C. and **Al-Chaer E.D.** An improved method for patch clamp recording and calcium imaging of neurons in the intact dorsal root ganglion in rats. *J. Neurosci. Methods* 173(1): 74-82, 2008.
26. Wang, J., Gu, C. and **Al-Chaer, E.D.** Altered behavior and digestive outcomes in adult male rats primed with minimal colon pain as neonates. *Behav Brain Funct.* 4(1): 28, 2008.
27. Chaloner A., Rao A., **Al-Chaer E.D.**, Greenwood-Van Meerveld B. Importance of neural mechanisms in colonic mucosal and muscular dysfunction in adult rats following neonatal colonic irritation. *Int J Dev Neurosci.* 28(1):99-103, 2010.
28. Romanovsky D., Wang J., **Al-Chaer E.D.**, Stimers J.R., Dobretsov M. Comparison of metabolic and neuropathy profiles of rats with streptozotocin-induced overt and moderate insulinopenia. *Neuroscience.* 170(1):337-347, 2010.
29. Norwood A.P., **Al-Chaer E.D.**, Fantegrossi W.E. Predisposing effects of neonatal visceral pain on abuse-related effects of morphine in adult male Sprague Dawley rats. *Psychopharmacology (Berl)*: 231(22): 4281-4289, 2014. Epub 2014 Apr 23.
30. Gil D., Wang J., Gu C., Donello J., Cabrera, S. and **Al-Chaer E.D.** Role of sympathetic nervous system in rat model of chronic visceral pain. *Neurogastroenterol. Motil.* 28(3): 423-431, 2016. Epub 2015 Dec 16.
31. Charlier P, **Al-Chaer ED**, Bou Abdallah F, Massaad C, Hervé C. Peer (and brothers) review? Ethical challenges in author-proposed peer-reviewers. *Eur J Intern Med.* 47: e24-e25, 2018. Epub 2017 Aug 18.
32. Chidiac JJ, Kassab A, Rifai K, Saadé NE, **Al Chaer ED**. Modulation of incisor eruption in rats by sympathetic efferents. *Arch Oral Biol.* 89:31-36, 2018. Epub 2018 Feb 7.
33. Chamaa F, Bahmad HF, Makkawi AK, Chalhoub RM, **Al-Chaer ED**, Bikhazi GB, Nahas Z, Abou-Kheir W. Nitrous Oxide Induces Prominent Cell Proliferation in Adult Rat Hippocampal Dentate Gyrus. *Front. Cell. Neurosci.* 12:135. doi: 10.3389/fncel.2018.00135.
34. Chidiac JJ, Kassab A, Rifai K, **Al-Chaer ED**, Saadé NE. Contribution of capsaicin-sensitive innervation to the continuous eruption of the rat mandibular incisors. *Anat Sci Int.* 94(1): 136-143, 2019. doi: 10.1007/s12565-018-0460-z. Epub 2018 Sep 18.
35. **Al-Chaer ED**. Standards of healthcare in a crisis: ethical framework and practical guidelines. *Human and Health* 51: 12-15, Spring 2020. (in Arabic)

B. Reviews

1. **Al-Chaer, E.D.**, Feng, Y. and Willis, W.D. Visceral pain: a disturbance in the sensorimotor continuum? *Pain Forum* 7 (3): 117-125, 1998.
2. **Al-Chaer, E.D.** and Traub R.J. Biological basis of visceral pain: recent developments. *Pain* 96: 221-225, 2002.
3. Grundy D, **Al-Chaer ED**, Aziz Q, Collins SM, Ke M, Tache Y, Wood JD. Fundamentals of neurogastroenterology: basic science. *Gastroenterology* 130(5):1391-1411, 2006.

C. Book Chapters

1. Willis, W.D., **Al-Chaer, E.D.**, Quast, M. J. and Westlund, K. N. Evidence for the presence of a visceral pain pathway in the dorsal column of the spinal cord. In *Somatosensory processing: from single neuron to brain imaging*. Editors: Rowe, M.J. and Iwamura Y. pp. 51-75, 2001. Harwood Academic Publishers, Amsterdam, The Netherlands.
2. K. J. S. Anand, A. T. Bhutta, R. W. Hall, C. R. Rovnaghi, and **E. D. Al-Chaer**. Long-term effects of repetitive pain in the neonatal period: neuronal vulnerability, imprinting, and plasticity. In *Neonatal Pain*, Hodgson DM (Ed), Section IV, Chapter 15, pp. 197 – 210, Taylor and Francis Medical Books, London, 2005.
3. **Al-Chaer, E.D.** Descending Modulation of Visceral Pain. In *Descending Modulation of Spinal Nociceptive Processing*. Section Editor: Ronald Dubner. Encyclopedia of Pain. Schmidt R. and Willis W.D. Springer-Verlag, Heidelberg, Germany, 2006, pp. 576-578.
4. **Al-Chaer, E.D.** Visceral Pain / Irritable Bowel Syndrome Model. In *Animal Models and Experimental Tests to Study Nociception and Pain*. Section Editor: Jin Mo Chung. Encyclopedia of Pain. Schmidt R. and Willis W.D. Springer-Verlag, Heidelberg, Germany, 2006, pp. 2623-2626.
5. Wood JD, Grundy D, **Al-Chaer ED**, Aziz Q, Collins SM, Ke M, Tache Y. Fundamentals of neurogastroenterology: basic science. In *ROME III, The Functional Gastrointestinal Disorders, 3rd Ed.* (Drossman et al. Eds.), Degnon Associates, Inc. McLean, VA, pp. 31-88, 2006.
6. **Al-Chaer, E.D.** Postsynaptic Dorsal Column Neurons, Responses to Visceral Input. In *Ascending Transmission of Nociceptive Signals*. Section Editor: Glenn J. Giesler Jr. Encyclopedia of Pain. Schmidt R. and Willis W.D. editors. Springer-Verlag, Heidelberg, Germany, 2006, pp. 1954-1956.
7. **Al-Chaer, E.D.** and Willis W.D. Neuroanatomy of visceral pain: Pathways and processes in "Chronic abdominal and visceral pain: theory and practice" PJ Pasricha, WD Willis and GF Gebhart (Eds), Chapter 4, pp. 33-44, Informa Health Care, Inc. New York, NY, 2007.

8. Anand KJS, **Al-Chaer ED**, Bhutta AT and Hall RW. Development of Supraspinal Pain Processing. In: 3rd Edition of "Pain in Neonates & Infants" (Anand, Stevens, McGrath Eds.) Pain Research and Clinical Management, Chapter 3, Elsevier Churchill-Livingstone, Edinburgh, pp. 25-44, 2007.
9. Sternberg W.F. and **Al-Chaer, E.D.** Long-term Consequences of Neonatal and Infant Pain from Animal Models. In: 3rd Edition of "Pain in Neonates & Infants" (Anand, Stevens, McGrath Eds.) Pain Research and Clinical Management, Chapter 5, pp. 57-66, Elsevier Churchill-Livingstone, Edinburgh, 2007.
10. **Al-Chaer, E.D.** and Hyman, P.E. Visceral pain in infancy, In: 3rd Edition of "Pain in Neonates & Infants" (Anand, Stevens, McGrath Eds.) Pain Research and Clinical Management, Chapter 14, pp. 201-210, Elsevier Churchill-Livingstone, Edinburgh, 2007.
11. **Al-Chaer, E.D.** Visceral Pain. In "*Mechanisms of Pain in Peripheral Neuropathy*" (Maxim Dobrestov and Jun Ming Zhang, Eds), chapter 2, pp 29 – 45, 2008.
12. **Al-Chaer, E.D.** The Neuroanatomy of Pain and Pain Pathways, In "Biobehavioral Approaches to Pain" (Rhonda J. Moore, Editor), Chapter 2, pp 17 - 44, Springer, New York, 2009.
13. **Elie D. Al-Chaer** and Shelley A. Weaver. Early life trauma and chronic pain. In "*Functional Pain Syndromes: Presentation and Pathophysiology*", (Emeran A. Mayer and M. Catherine Bushnell, Editors), Chapter 20, pp 423 – 454, IASP press, Seattle, WA, 2009.
14. **Al-Chaer ED.** Neuroanatomy of pain and pain pathways, In "*Handbook of Pain and Palliative Care: Biobehavioral Approaches for the Life Course*" (Rhonda J. Moore, Editor), Chapter 18; pp. 273-294. Springer: New York, NY; 2012.
15. Rabih A. Moshourab, Michael Schäfer, and **Elie D. Al-Chaer**. Chronic Pain in Neurotrauma: Implications on Spinal Cord and Traumatic Brain Injury, In "*Brain Neurotrauma: Molecular, Neuropsychological, and Rehabilitation Aspects*" (Firas H. Kobeissy, Editor), Chapter 11; pp. 117-129. CRC Press 2015.
16. **E.D. Al-Chaer. E.D. Al-Chaer.** Government, Governance, and the University: The Case for Lebanon. In: Badran, A., Baydoun, E., Hillman, J.R. (eds) Higher Education in the Arab World. Chapter 9; pp. 219-264. Springer, Cham. 2020. https://doi.org/10.1007/978-3-030-58153-4_9.
17. **E.D. Al-Chaer.** Managing Creativity on a Budget: The Future of Academic Research and Development in Lebanon. In: Badran, A., Baydoun, E., Hillman, J.R. (eds) Higher Education in the Arab World: Research and Development. pp 275–296 Springer, Cham. 2022. https://doi.org/10.1007/978-3-030-80122-9_16.

18. **E.D. Al-Chaer**. The Future of the University in a 21st Century Economy. In: Badran, A., Baydoun, E., Hillman S., Mesmar J. (eds), Higher Education in the Arab World: E-Learning and Distance Education Springer, pp 53–77 Springer, Cham. 2023. https://doi.org/10.1007/978-3-031-33568-6_4.

19. **E.D. Al-Chaer**. Intelligence Amplified: Exploring the Future of Higher Education in the AI Age. In: Badran, A., Baydoun, E., Hillman S., Mesmar J. (eds), Higher Education in the Arab World: Digital Transformation. Springer, pp xx – yy. Springer, Cham. 2024.

D. Abstracts/Proceedings

Authored and presented more than 150 papers, abstracts and posters at national and international meetings.

ADVOCACY, POLICY & POSITION PAPERS

1. **Al-Chaer ED**. Standards of healthcare in a crisis: ethical framework and practical guidelines. *Human and Health* 51: 12-15, Spring 2020. (*in Arabic*).

2. Isma'eel H, El Jamal N, Dumit NY and **Al-Chaer ED**. Saving the Suffering Lebanese Healthcare Sector. Arab Reform Initiative, October 15, 2020 <https://www.arab-reform.net/publication/saving-the-suffering-lebanese-healthcare-sector-immediate-relief-while-planning-reforms/>

3. El-Jamal N, Usta U, Nasrallah M, **Al-Chaer ED**, Hamadeh G and Isma'eel H. Solutions for the “Vanishing Drug” Conundrum in Lebanon. Arab Reform Initiative, November 17, 2020 <https://www.arab-reform.net/publication/solutions-for-the-vanishing-drug-conundrum-in-lebanon-a-change-in-the-subsidy-system-coupled-with-a-digital-prescribing-platform/>

4. El Jamal N, Hajjali T, Isma'eel H and **Al-Chaer ED**. Lessons learned from the COVID-19 pandemic: Physician safety and coverage in Lebanon. March 12, 2021 <https://www.arab-reform.net/publication/lessons-learned-from-the-covid-19-pandemic-physician-safety-and-coverage-in-lebanon/>

5. **E.D. Al-Chaer**. Government, Governance, and the University: The Case for Lebanon. In: Badran, A., Baydoun, E., Hillman, J.R. (eds) Higher Education in the Arab World. Chapter 9; pp. 219-264. Springer, Cham. 2020. https://doi.org/10.1007/978-3-030-58153-4_9

6. **E.D. Al-Chaer**. Managing Creativity on a Budget: The Future of Academic Research and Development in Lebanon. In: Badran, A., Baydoun, E., Hillman, J.R. (eds) Higher Education in the Arab World: Research and Development. pp 275–296 Springer, Cham. 2022. https://doi.org/10.1007/978-3-030-80122-9_16.

7. **E.D. Al-Chaer.** The Future of the University in a 21st Century Economy. In: Badran, A., Baydoun, E., Hillman S., Mesmar J. (eds), Higher Education in the Arab World: E-Learning and Distance Education Springer, pp 53–77 Springer, Cham. 2023. https://doi.org/10.1007/978-3-031-33568-6_4.

RECREATION

"You can build your mind, you can build your body and you can build your CV."
Elie D. Al-Chaer

Besides a few visits to the gym every now and then, a game of tennis when a partner is available or a hike to the nearest trail when the weather permits, I am not much of a body builder. So, when I am not engaged in activities that build my CV, I immerse myself in problems of geometry, philosophy, knowledge and existence; "mental gymnastics." The mathematician in me likes to draw logical deductions that the philosopher likes to challenge. The geometrician likes to draw lines and to sketch plans in an attempt to realize a nagging idea or give shape to a fleeting dream. The strategist often calls for another game of chess or backgammon, or sometimes SimCity® where my political and public administration skills are put to test at reasonable risk, in the virtual world of tomorrow. At the end of the day (or the night), I find myself with an idiosyncratic house plan, a highly critical opinion written in a blog on a website of my design, or on my knees purifying my soul and praying for a revelation that will bring me closer to the Truth. On my 50th birthday, I picked up motorcycling and after intense training in Lebanon and in the USA and a broken knee, I became a certified Motorcycle Safety Foundation (MSF) rider. Nothing is more exhilarating than a ride on the iron horse.

Having said all that, I find the most rewarding activity to be the playtime and quality-time that I spend with my son. Seeing the world through the fresh eyes of a young man never fails to give me a renewed perspective on life.