

# CURRICULUM VITAE

## ALON BEN-ARI, MD

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### APPOINTMENTS AND POSITIONS

#### **CLINICAL:**

2017 – Present	Staff Anesthesiologist, Department of Anesthesia, Sacramento VA Medical Center.
2012 – 2017	Staff Anesthesiologist, Department of Anesthesia, Seattle VA Medical Center.
2012 – 2014	Director of Regional Anesthesia, Department of Anesthesia, VA Medical Center
2008 – 2011	Staff Anesthesiologist - Acute Interventional Postoperative Pain Service University of Pittsburgh Medical Center (UPMC), Pittsburgh, PA.
2007 – 2008	Fellow - Regional Anesthesia and Acute Pain University of Pittsburgh Medical Center (UPMC), Pittsburgh, PA.
2002 – 2007	Anesthesiology Resident Hadassah, Hebrew University Hospital, Jerusalem, Israel.
2001 – 2002	Clinical Internship Hadassah, Hebrew University Hospital, Jerusalem, Israel.

#### **ADMINISTRATIVE:**

2017 – Present	Chief Medical Information Officer, Associate Chief of Staff for Clinical Informatics, VA's Northern California Healthcare System.
2015 – 2017	Acting Chief Medical Information Officer, Puget Sound VA Healthcare System.
2013 – 2014	Director Medical Informatics Fellowship Program. (One of Six VA's Office of Academic Affiliations sponsored programs nationwide).
2013 – 2016	Member of the Seattle VA informatics committee.

#### **ACADEMIC:**

2017- Present	Associate Professor, University of California Davis, School of Medicine, Department of Anesthesiology, Sacramento CA.
2012 – 2016	Assistant Professor, University of Washington Medical School, Department of Anesthesiology and Pain medicine, Seattle WA.
2016	Co-Chair Health Learning track at the Hawaiian International Conference on System Science - HICSS (2016).(IEEE conference)
2008 – 2011	Instructor (School of Medicine) University of Pittsburgh Medical Center (UPMC), Pittsburgh, PA, USA.
2006 – 2007	Instructor (School of Medicine) Hadassah, Hebrew University Medical Center, Jerusalem, Israel.

## **INDUSTRY:**

- 2008 – 2011      Clinical Trials & Safety Co-Investigator  
Acute Interventional Postoperative Pain Service  
University of Pittsburgh Medical Center (UPMC), Pittsburgh, PA.
- 2002 – 2007      Scientific and Clinical Director  
FortiCell / Hapto Biotech LTD, Jerusalem, Israel.
- Spearheaded the development of a therapeutic tissue engineering based technology; resulted in successful feasibility trial of patented fibrin technology applied to the repair of a non healing bone defect; Hapto Biotech was subsequently acquired by Forticell.
- 1998 – 2000      Research Associate  
LevRam, Medical Start-Up, Haifa, Israel.
- Analyzed pre-clinical data recordings associated with innovative device to alleviate congestive heart failure; developed theoretical framework for cardiac muscle contraction dynamics.

## **MILITARY:**

- 2002 – 2007      Military Reserve – Medical Doctor  
Givati infantry brigade,  
Israeli Defense Force, Israel.
- 1995 – 2007      Military Reserve – Data Analytics Unit – Programmer  
Israeli Army Center of Computing and Information Systems,  
Israeli Defense Force, Israel.
- 1991 – 1994      Data Analytics Unit - Programmer  
Israeli Army Center of Computing and Information Systems,  
Israeli Defense Force, Israel.

## **CERTIFICATION AND LICENSURE**

### **MEDICAL LICENSE:**

- 2009 – Present      Unrestricted license in medicine #MD438007, Pennsylvania.
- 2002 - Present      Unrestricted license in medicine # 34268, Israel.

### **SPECIALTY CERTIFICATION:**

- 2008 - Present      Specialist in Anesthesia, Israel Board of Anesthesia # 26312.
- 2007 - Present      European Academy of Anesthesiology (DEAA).

## **EDUCATION AND TRAINING**

- 2014 – 2019      Biomedical Informatics MSc  
Stanford University, CA, USA.
- 2012 – 2013      Certificate in Data Science, University of Washington Continuing Education
- Parallel processing implementation (i.e Hadoop, on Amazon Cloud).
  - Machine learning.
  - Statistics and Data Visualization.
  - New concepts of database applications (i.e. matrix factorization) using MapReduce algorithms.
- 2007 – 2008      Regional Anesthesia Fellowship  
University of Pittsburgh Medical Center (UPMC), Pittsburgh, PA, USA.
- Excellence in Research Award (top one percent).
- 2002 – 2007      Anesthesia Residency - Dept. of Anesthesiology and Critical Care Medicine  
Hadassah, Hebrew University Hospital, Jerusalem, Israel.
- Young Researcher Award for Residents (top one percent).
- 2001 – 2002      Internship ,  
Hadassah, Hebrew University Medical Center, Jerusalem, Israel.
- 1997 – 2000      Doctor in Medicine (Cum Laude), Technion - Israel Institute of Technology.
- 1994 – 1997      BSc (Cum Laude), Technion - Israel Institute of Technology.
- Appointed teaching assistant in school of medicine.
- 1991 – 1992      Programmer – Israeli Army Center of Computing and Information Systems  
Top 10 software professionals schools in the world.

## **PROGRAMING LANGUAGES**

**Operating Systems:** Linux/Unix, Windows

**Programing Languages:** Python, C#, JavaScript

**Web and Mobile:** ASP.NET, Xamarin, C#, Python (Flask, Django), Javascript (jQuery)

**Databases:** SQL, Pig, RDF/SPARQL, Neo4j, Apache Spark, MongoDB.

**Statistics and Data Analysis:** R, Excel, Python.

**Simulation frameworks** NetLogo, Python(AgentBase, Mesa, simPy).

**Reporting:** LaTeX, Word, Power Point, Excel

## **CITIZENSHIP AND LANGUAGES**

**Citizenship:** USA, Canada, EU, Israel

**Languages:** English, French, Hebrew

## PUBLICATIONS

### PEER REVIEWED:

- Starr J., Rozet I. and **Ben-Ari A.**, 2018. A Risk Calculator Using Preoperative Opioids for Prediction of Total Knee Revision Arthroplasty. *The Clinical journal of pain*, 34(4), pp.328-331.
- Lee A.T., Gagnidze A., Pan, S.R., Sookplung P., Nair B., Newman S.F., **Ben-Ari A.**, Zaky A., Cain K., Vavilala MS. and Rozet I., 2017. Preoperative low-dose aspirin exposure and outcomes after emergency neurosurgery for traumatic intracranial hemorrhage in elderly patients. *Anesthesia & Analgesia*, 125(2), pp.514-520.
- Baciewicz AM., Lee C., **Ben-Ari A.**, Kim H., Lee AT. Intravenous Tissue Plasminogen Activator Administration for Ischemic Stroke 1 Hour After Epidural Catheter Removal: A Case Report. *A&A Case Reports*. 2017 Jan 11.
- **Ben-Ari A.**, Chansky H., Rozet I. Preoperative Opioid Use Is Associated with Early Revision After Total Knee Arthroplasty. *Journal of Bone and Joint Surgery (JBJS)*, 2017 Jan 4;99(1):1-9.
- **A. Ben-Ari** and K. Hammond, "Text Mining the EMR for Modeling and Predicting Suicidal Behavior among US Veterans of the 1991 Persian Gulf War," *2015 48th Hawaii International Conference on System Sciences*, 2015, pp. 3168-3175, doi: 10.1109/HICSS.2015.382.
- Hammond KW., **Ben-Ari A.**, Laundry RJ., Boyko E, Samore MH. The Feasibility of Using Large Scale Text Mining To Detect Adverse Childhood Experiences in a VA-Treated Population. *Journal of Traumatic Stress. Journal of Trauma and Stress* 2015 Dec;28(6):505-14.
- **Ben-Ari A.**, Hammond KW. Text Mining the EMR for Modeling and Predicting Suicidal Behavior among US Veterans of the 1991 Persian Gulf War. *IEEE Hawaii International Conference on System Sciences (HICSS)*, 2015.
- **Ben-Ari A.**, Moreno M., Chelly JE., Bigeleisen PE. Ultrasound-Guided Paravertebral Block Using an Intercostal Approach. *Anesthesia Analgesia* 2009;109(5):1691-4.
- **Ben-Ari A.**, Joshi R., Chelly JE. Ultrasound Localization of the Sacral Plexus Using a Parasacral Approach. *Anesthesia Analgesia* 2009;108(6):1977-1980.
- **Ben-Ari A.**, Rivkin R., Miryam F., Gaberman E., Levdansky L., Gorodetsky R. Isolation and Implantation of Bone Marrow-Derived Mesenchymal Stem Cells with Fibrin Micro Beads to Repair a Critical-Size Bone Defect in Mice. *Tissue Engineering Part A* 2009;15(9):2537-46.
- Rifkin R., **Ben-Ari A.**, Gorodetzky R. High yield Isolation Expansion and Differentiation of Murine Bone Marrow Derived Mesenchymal Stem Cells Use in Fibrin Microbeads (FMB). *Cloning and Stem Cells* 2007;9(2):157-75.
- **Ben-Ari A.**, Lewis MC, Davidson E. Chronic administration of ketamine for analgesia. *Journal of pain & palliative care pharmacotherapy*. 2007 Jan 1;21(1):7-14.
- Szalat S., Gershkovich P., **Ben-Ari A.**, Shaish A., Liberman Y., Boutboul E., Gotkine M., Hoffman A., Harats D., Leitersdorf E., Meiner V. Rifampicin-Induced CYP3A4 Activation in CTX Patients Cannot Replace Chenodeoxycholic Acid Treatment. *Biochimica et Biophysica Acta* 2007; 1771(7):839-844.
- Lewis MC., Nevo I., Paniagua MA., **Ben-Ari A.**, Pretto E., Eisdorfer S., Davidson E., Matot I., Eisdorfer C. Uncomplicated General Anesthesia in the Elderly Results in Cognitive Decline: Does Cognitive Decline Predict Morbidity and Mortality? *Medical Hypotheses* 2007;68(3):484-92.

- **Ben Ari A.**, Elinav E., Elami A., Matot I. Off-Pump Coronary Artery Bypass Grafting in a Patient with Child Class C Liver Cirrhosis Awaiting Liver Transplantation. *British Journal of Anaesthesia* 2006;97(4):468-472.
- Shimony N., Gorodetsky R., Marx G., Gal D., Rivkin R., **Ben-Ari A.**, Landsman A., Haviv YS. Fibrin Microbeads (FMB) as a 3D Platform for Kidney Gene and Cell Therapy. *Kidney International* 2006;69(3):625-633.

## REVIEWS:

- **Ben-Ari A.**, Lewis MC., Davidson E. Prolonged Administration of Ketamine for Analgesia. *Journal of Pain & Palliative Care Pharmacotherapy* 2007;21(1):7-14.
- **Ben-Ari A.**, Davidson E. Ketamine for Chronic Pain. *The Israeli Journal of Symptoms and Pain Control* 2006;16:16-23.
- Pawar R., **Ben-Ari A.** Domb AJ. Protein and Peptide Parenteral Controlled Delivery. *Expert Opinion on Biological Therapy* 2004;4(8):1203-12.

## BOOK CHAPTERS:

- Biegeleisen PE., Ben-Ari A., Fanelli A., Ghisi DEF. Ultrasound Guided Thoracic Paravertebral Pectoralis, and Serratus Anterior Blocks, in *Ultrasound-Guided Regional Anesthesia and Pain Medicine*, ed. Biegeleisen PE.(Wolters Kluwer, 2015).
- **Ben-Ari A.**, Ben-David B. Ultrasound Guided Parasacral Block, in *Ultrasound Guided Regional Anesthesia and Pain Medicine*, ed. Biegeleisen PE. (LW&W, 2009), 120-122.
- Biegeleisen PE., **Ben-Ari A.** Ultrasound Guided Thoracic Paravertebral Nerve Block, in *Ultrasound Guided Regional Anesthesia and Pain Medicine*, ed. Biegeleisen PE. (LW&W, 2009), 150-155.

## CONFERENCE PRESENTATIONS:

- Starr J., **Ben-Ari A.** A risk calculator incorporating preoperative opioid use to predict total knee arthroplasty revision. *American Society of Anesthesiologists (ASA)*, 2016.
- Starr J., **Ben-Ari A.** Variation in Opioid Prescribing Patterns Before Total Knee Arthroplasty in Veterans Affairs Patients. *American Society of Anesthesiologists (ASA)*, 2016.
- **Best paper in Information Technology in Healthcare Track**  
**Ben-Ari A.**, Hammond KW. Text Mining the EMR for Modeling and Predicting Suicidal Behavior among US Veterans of the 1991 Persian Gulf War (Presented at *Hawaii International Conference on System Sciences (HICCS)*, Kauai HI, 2015).
- **Ben-Ari A.**, Rozet I. Chronic Preoperative opioids are associated with early knee revision in patients undergoing knee replacement. (Presented at the *American Society of Anesthesiologists (ASA)*, New Orleans LA, 2014).
- **Ben-Ari A.**, Hammond KW. Adverse Childhood Experiences and Adult Illness in Gulf War Veterans. (Presented at the *American Medical Informatics Association*, Washington DC, 2013).

- **Ben-Ari A.,** Chelly JE. Different Opioids Impact on PCA Pattern of Usage. (Presented at the *Association of University Anesthesiologists meeting*, Philadelphia PA, 2011).
- **Ben-Ari A.,** Marr L. Role of Continuous Peripheral Nerve Blocks (cPNB) in the Incidence of Post-Operative Nausea and Vomiting (PONV) in Major Joint Replacement. A Bayesian Approach to Retrospective Analysis. (Presented at the *European Society of Anesthesia*, Amsterdam, 2011).
- **Ben-Ari A.,** Marr L. Modeling Opioid Hydromorphone ED50 in Surgical Patients for Postoperative Pain, and Quantifying the Pharmacological Effect of a Nerve Block. (Presented at the *Italian Society of Anesthesiology*, Parma, Italy, October 2010).
- **Ben-Ari A.,** Chelly JE, Williams JP. Defining a Quantitative Clinical Phenotype Using Stochastic Modeling. (Presented at the *Association of University Anesthesiologists Meeting*, Denver CO, April 2010).
- Ghisi D., **Ben-Ari A.** Determining Placement Accuracy of Continuous Bilateral Paravertebral Catheters: A Comparison Between Ultrasound Guidance and Blind Technique. (Presented at the *American Society Regional Anesthesia Meeting*, Toronto, April 2010).
- **Ben-Ari A.,** Ruttum D., Biegeleisen PE. Ultrasound Guided Suprascapular Nerve Block in the Supraclavicular Fossa. (Presented at the *American Society Regional Anesthesia Meeting*, Toronto, April 2010).
- **Ben-Ari A.,** Shik V., Chelly JE. Two Unilateral Continuous Thoracic Paravertebral Blocks for the Pain Management of Extensive Rib Fractures. (Presented at the *American Society Regional Anesthesia Meeting*, Toronto, April 2010).
- Wilson S., **Ben-Ari A.** Placement of Peripheral Nerve Catheters for Lower Extremity Amputation in a Patient with a History of Surgical Revascularization: An Indication for Ultrasound. (Presented at the *American Society Regional Anesthesia Meeting*, Toronto, April 2010).
- **Ben-Ari A.,** Belfer I., Dai F., Chelly JE. Quantitative Sensory Testing (QST) and Clinical Variables in Total Knee Arthroplasty (TKA) in Patients with Continuous Peripheral Nerve Blocks (cPNB). (Presented at the *6th Congress of the European Federation of IASP Chapters (EFIC). Pain in Europe, VI*, Lisbon, Portugal, September, 2009).
- **Ben-Ari A.,** Belfer I., Dai F., Chelly JE. Low Dose Continuous Femoral Blocks Does Not Impact Quadriceps Strength After Knee Arthroplasty. (Presented at the *American Society of Anesthesiologists Meeting*, New Orleans, October, 2009).
- **Ben-Ari A.,** Belfer I., Dai F., Chelly JE. Quantitative Measurement of Quadriceps Muscle Function Following Major Orthopedic Surgery. (Presented at the *Annual American Society of Regional Anesthesia Meeting*, Pheonix, April, 2009).
- **Ben-Ari A.,** Moreno GM., Biegeleisen PE., Chelly JE. Ultrasound Guided Continuous Approach to the Paravertebral Space. (Presented at the *International Anesthesia Research Society Meeting*, San Diego, March 2009).
- **Ben-Ari A.,** Uskova A., Rama J., Chelly JE. Ultrasound Guided Sciatic Nerve Block using the Parasacral Approach - Description of Technique. (Presented at the *American Society of Anesthesiologists Meeting*, Orlando, October, 2008).
- **Ben-Ari A.,** Biegelesen PE., Chelly JE. Antero-Medial Ultrasound Guided Approach to a Sciatic Nerve Block. (Presented at the *American Society of Anesthesiologists Meeting*, Orlando, October 2008).

- **Ben-Ari A.**, Frishman M., Rivkin R., Levdansky L., Gaberman Y., Gorodetsky R. Using Fibrin Micro Beads (FMB) for Isolation, Differentiation and In-Vivo Implantation of Mouse Mesenchymal Stem Cells in a Model of Ectopic Bone Formation and Repair of Critical Size Bone Defect. (Presented at the *Symposia in Tissue Engineering and Developmental Biology*, Utah, April, 2007).
- Rivkin R., **Ben-Ari A.**, Levdansky L., Gaberman E., Hotovely AS., Marx G., Gorodetsky R. Fibrin-Microbeads (FMB) for Isolation, Differentiation and Implantation of Bone-Marrow-Derived Mouse Mesenchymal Stem Cells. (Presented at the *International Workshop on Stem Cells and Calcified Tissues*, Tel-Aviv, Israel, 2006).
- **Ben-Ari A.**, Rivkin R., Levdansky L., Gaberman E., Solomon AH., Marx G., Gorodetsky R. Isolation Differentiation and In-Vivo Implantation of Osteogenic and Chondrogenic Cells Derived from Mice Mesenchymal Stem cells using Fibrin Micro Beads (FMB). (*20th International Congress of the Israeli Society of Anesthesia*, Tel-Aviv, Israel, 2005).

#### INVITED SPEAKER AND WORKSHOPS:

- From computer science to bedside, a clinician's perspective. Keynote Speaker Digital Health Track *Seattle Start-Up Week*, Seattle, Washington, November 2016.
- Data Mining; finding New Gold, *Think Tech Hawaii*, Honolulu Hawaii, May 2015.
- Suicidal behavior in OEF/OIF veterans, from text mining through machine learning to social network analysis. UC Davis Department of Informatics. Sacramento, California, May 2014.
- Ultrasound Guided Peripheral Nerve Blocks Workshop. *Jerusalem University – Anesthesia Department*. Jerusalem Israel, October 2013.
- Ultrasound Guided Peripheral Nerve Blocks Workshop. *American Society of Anesthesiologists Meeting*. New Orleans LA, October 2010.
- Lower Extremity Peripheral Nerve Blocks. *The 4th Regional Anesthesia & Hemostasis Symposium*. Nemacolin resort, Farmington PA, April 2008.
- Ultrasound Guided Peripheral Nerve Blocks Workshop. *The 5th Annual UPMC Pain Management Symposium*. Nemacolin resort, Farmington PA, November 2008.

#### PUBLISHED SOFTWARE:

- **Ben-Ari A.** Abstraction of Generic Opioid Drug Names and Dosages from Full Text Prescription Records. <https://github.com/alon-benari>, GITHUB, 2014