# *Curriculum vitae*

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## Education

| Year | Degree (Honors) | Field of Study (Thesis advisor for PhDs) | Institution |
|---|---|---|---|
| 1996-2000 | B.Pharm. | Pharmacy | The Hebrew University of Jerusalem, Jerusalem, Israel |
| 2001-2003 | M.Sc. | Medicinal Chemistry (Thesis: Boronated cationized acrylic polymers as a potential targeting tool for boron neutron capture therapy for colon cancer, Mentors: Prof. Morris Srebnik and Prof. Abraham Rubinstein) | The Hebrew University of Jerusalem, Jerusalem, Israel |
| 2003-2007 | Ph.D. | Pharmaceutical Sciences (Thesis: Novel Approaches for Targeted Adjuvant Chemo- and Radiotherapy for Colorectal and Breast Cancer and Their Applications by Polymeric Vehicles, Mentors: Prof. Morris Srebnik and Prof. Abraham Rubinstein) | The Hebrew University of Jerusalem, Jerusalem, Israel |

## Postdoctoral Training

| Year(s) | Titles | Specialty/Discipline<br>(Lab PI for postdoc research) | Institution |
|---|---|---|---|
| 2007-2012 | Post Doctoral Fellow | Cancer Cell Biology and Immunology<br>(Prof. Irene Ghobrial Lab) | Harvard Medical School/ Dana-Farber Cancer Institute, Boston, MA. |

## Current Licensure and Certification

Licensure

| Year | Titles | Institution |
|---|---|---|
| 2000 | Israeli license for Practicing Pharmacy. | Israeli Ministry of Health, Jerusalem, Israel. |

## Honors and Awards

| Year | Name of Honor/Award | Awarding Organization |
|---|---|---|
| 2001 | Excellent Teaching Assistant | Pharmaceutical Preparations Laboratory, School of Pharmacy, The Hebrew University of Jerusalem, Israel. |
| 2001 | Abraham and Ada Barzilai Award for Outstanding Work Proposal in Cancer Research | The Israeli Ministry of Justice & The Hebrew University of Jerusalem, Israel. |
| 2002 | Excellent Teaching Assistant | Bioorganic Chemistry Laboratory, School of Pharmacy, The Hebrew University of Jerusalem, Israel. |
| 2003 | Excellent Teaching Assistant | Bioorganic Chemistry Laboratory, School of Pharmacy, The Hebrew University of Jerusalem, Israel. |
| 2004 | Excellent Teaching Assistant | Bioorganic Chemistry Laboratory, School of Pharmacy, The Hebrew University of Jerusalem, Israel. |
| 2005 | Excellent Teaching Assistant | Bioorganic Chemistry Laboratory, School of Pharmacy, The Hebrew University of Jerusalem, Israel. |
| 2006 | Excellent Research Student | School of Pharmacy, The Hebrew University of Jerusalem, Israel. |
| 2006 | First Place Poster Award | Gordon Research Conference on Drug Carriers in Medicine and Biology, Big Sky, Montana, USA. |
| 2006 | Participant | The 18th Meeting of Nobel Prize Laureates in Chemistry Lindau, Lake Constance, Germany. |
| 2008 | Travel Award | American Society of Hematology Annual Meeting, San-Francisco, California, USA. |
| 2008 | Fellow Award | Multiple Myeloma Research Foundation, Norwalk, Connecticut, USA. |

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| 2009 | Travel Award | American Society of Hematology Annual Meeting, New Orleans, Louisiana, USA. |
| 2009 | Merit Award | American Society of Clinical Oncology Annual Meeting, Orlando, Florida, USA |
| 2010 | Young Investigator Award | 6th International Workshop on Waldenstrom's Macroglobulinemia, Venice, Italy |
| 2010 | AACR-Amgen, Inc. Fellowship in Clinical/Translational Cancer Research | American Association of Cancer Research, Washington DC, USA. |
| 2011 | Abstract Achievement Award | Annual Meeting of the American Society of Hematology, San Diego, California, USA. |
| 2015 | Bear Cub Competition for Innovation and Entrepreneurship | Skandalaris Center, Washington University in Saint Louis. |
| 2016 | i6 Spark | Biogenerator-BioSTL, Saint Louis, MO. |
| 2016 | Bear Cub Competition for Innovation and Entrepreneurship | Skandalaris Center, Washington University in Saint Louis. |
| 2017 | WashU Inventor Award | Office of Technology Management, Washington University in St. Louis |
| 2017 | LEAP Leadership in Entrepreneurial Acceleration Program | Skandalaris Center, Washington University in Saint Louis. |
| 2019 | WashU Inventor Award | Office of Technology Management, Washington University in St. Louis |
| 2020 | WashU Inventor Award | Office of Technology Management, Washington University in St. Louis |
| 2022 | CPRIT Rising Star Award | Cancer Prevention and Research Institute of Texas, Dallas, TX |

## Faculty Academic Appointments

| Year(s) | Academic Title | Department | Academic Institution |
|---|---|---|---|
| 2012- 2020 | Assistant Professor | Department of Radiation Oncology | Washington University in Saint Louis, Saint Louis, MO. |
| 2017-2022 | Affiliated Faculty | Department of Biomedical Engineering | Washington University in Saint Louis, Saint Louis, MO. |
| 2017-2022 | Adjunct Clinical Instructor | | Saint Louis College of Pharmacy, Saint Louis, MO. |
| 2020-2022 | Associate Professor | Department of Radiation Oncology | Washington University in Saint Louis, Saint Louis, MO. |
| 2022- Current | Associate Professor | Department of Biomedical Engineering | University of Texas Southwestern, Dallas, TX |

## Appointments at Hospitals/Affiliated Institutions

| Past | | | |
|---|---|---|---|
| Year(s) | Position Title | Department/Division | Institution |
| 2001 | Pharmacy Intern | | Clalit Health Services, Jerusalem, Israel. |
| 2001- 2003 | Pharmacist | | SuperPharm, Jerusalem, Israel. |
| 2003- 2006 | Pharmacist | | Clalit Health Services, Jerusalem, Israel. |
| 2017- 2022 | Pharmacy Preceptor | | Saint Louis College of Pharmacy, Saint Louis, MO. |

## Other Professional Positions

| Year(s) | Position Title | Institution |
|---|---|---|
| 2015-Current | Founder | Cellatrix LLC, Saint Louis, MO |
| 2016-Current | Founder | Targeted Therapeutics LLC, Saint Louis, MO |
| 2022-Current | Co-Founder (50%) | CovACE Nanotechnology LLC, Saint Louis, MO |
| 2022-Current | Co-Founder (33%) | OncInsights LLC, Saint Louis, MO |

## Professional Societies

| Dates | Society Name, member |
|---|---|
| 2005 | Controlled Release Society, Member |
| 2007 | American Society of Hematology, Member |
| 2006 | International Myeloma Society, Member |
| 2009 | American Society of Clinical Oncology, Member |
| 2010 | American Association of Cancer Research, Member |
| 2012 | American Association of Pharmaceutical Sciences, Member |
| 2015 | American Chemical Society, Member |
| 2015 | American Society for Radiation Oncology, Member |
| 2017 | Radiation Research Society, Member |
| 2022 | Biomedical Engineering Society, Member |

## Grant Review Activities

| Year(s) | Name of Review Committee | Organization |
|---|---|---|
| | STTR-NCI Cancer Drug Development | National Institute of Health |
| | | Canada Foundation for Innovation |
| | | Arthritis Research UK |
| | | South African Medical Research Council |
| | | Cancer Society of Finland |
| | | USA-Israel Binational Foundation |
| | | European Research Area Network |
| | | Florida Department of Health |
| | | Pennsylvania Department of Health |

## Editorial Activities

| Year(s) | Journal Name |
|---|---|
| Editor/Associate Editor | |
| | Frontiers Oncology |
| | Cancers |
| | American Journal of Cancer Biology |
| | Stem Cells International |
| | Journal of Cancer Biology and Research |
| | International Journal of Medical Students |
| | BioMed Research International |
| Ad Hoc Reviewer | |
| | ACS Nano |
| | Advances in Hematology |
| | American Journal of Cancer Biology |
| | Biomaterial |
| | Blood |
| | British Cancer Journal |
| | British Journal of Hematology |
| | Cancer Letter |
| | Cancer Research |
| | Clinical Cancer Research |
| | Drugs of the Future |
| | Drugs of Today |
| | European Journal of Hematology |

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|---|---|
| | European Journal of Pharmaceutics |
| | Heamatologica |
| | International Journal of Radiation Oncology |
| | International Journal of Pharmaceutics |
| | Journal of Clinical Investigation |
| | Journal of Controlled Release |
| | Leukemia |
| | Medicinal Chemistry |
| | Molecular Cancer Research |
| | Molecular Cancer Therapy |
| | Nature Biotechnology |
| | Nature Communications |
| | Nature Reviews |
| | Oncotargets |
| | Pharmaceutical Research |
| | Science Translational |
| | Scientific Reports |

**Grant Support**

| | |
|---|---|
| Present | *Cancer Prevention and Research Institute of Texas* |
| | *Development of pan-cancer immunotherapeutic strategies* |
| | *Principal Investigator* |
| | *$400,000/Year; 2022-2027* |
| | *$2,000,000* |
| | |
| Present | *Department of Biomedical Engineering, UT Southwestern* |
| | *Start Up Fund* |
| | *Principal Investigator* |
| | *$200,000/Year; 2022-2027* |
| | *$1,000,000* |
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|---|---|
| Past | *Donation from Rodger and Paula Riney* |
| | *3D-Tissue Engineered Bone Marrow to predict therapeutic efficacy for personalized medicine in multiple myeloma patients* |
| | *Principal Investigator* |
| | *$200,000/Year; 2017-2022* |
| | *$1,000,000* |
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|---|---|
| Past | *Glycomimetics Inc.* |
| | *E-selectin-targeted nanoparticles for Myeloma* |
| | *Principal Investigator* |
| | *$70,000 /Year; 2021-2022* |
| | *$70,000* |
| | |
| Past | *TL1 Program, Washington University in St. Louis* |
| | *Multivalent nanoparticles for targeted immunotherapy in multiple myeloma* |
| | *Mentor* |
| | *$33,000 /Year; 2018-2021* |
| | *$100,000* |
| | |
| Past | *Center for Multiple Myeloma Nanotherapy, NIH-P54, Project 2* |
| | *Radiation-induced treatment of multiple myeloma* |
| | *Co- Investigator (PI: Achilefu)* |
| | *$50,000 /Year; 2015-2020* |
| | *$250,000* |
| | |
| Past | *Center for Multiple Myeloma Nanotherapy, NIH-P54, Project 3* |
| | *Modulation of bone environment to enhance response of cancers* |
| | *Co- Investigator (PI: DiPersio)* |
| | *$90,000 /Year; 2015-2020* |
| | *$450,000* |
| | |
| Past | *Duke University* |
| | *PK analysis of blood Disulfiram* |
| | *Principal Investigator* |
| | *$40,000 /Year; 2018-2019* |
| | *$40,000* |
| | |
| Past | *LEAP Leadership in Entrepreneurial Acceleration Program, SkandalarisCenter, Washington University in Saint Louis.* |
| | *Cellular delivery system for therapy and imaging of cancer* |
| | *Principal Investigator* |
| | *$50,000 /Year; 2017-2018* |
| | *$50,000* |
| | |
| Past | *Center for Multiple Myeloma Nanotherapy, NIH-P54, Pilot Award* |

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|---|---|
| | *Endothelial progenitor cells (EPCs) as trojan-horse drug-carriers for imaging and therapy in multiple myeloma* |
| | *Principal Investigator* |
| | *$30,000 /Year; 2017-2018* |
| | *$30,000* |
| | |
| Past | *International Waldenstrom Macroglobulinemia Foundation* |
| | *CD47 as a therapeutic target in multiple myeloma* |
| | *Principal Investigator* |
| | *$150,000 /Year; 2016-2018* |
| | *$300,000* |
| | |
| Past | *Vasculox Inc.* |
| | *E-selectin-targeted nanoparticles for Myeloma* |
| | *Principal Investigator* |
| | *$60,000 /Year; 2016-2018* |
| | *$60,000* |
| | |
| Past | *Glycomimetics Inc.* |
| | *GMI-1271 and GMI -1359 as potential therapy in MM* |
| | *Principal Investigator* |
| | *$50,000 /Year; 2016-2018* |
| | *$100,000* |
| | |
| Past | *Cleave Bioscience* |
| | *Effect of p97 inhibitor CB-5083 on progression of primary MM patient samples with p17 deletion* |
| | *Principal Investigator* |
| | *$20,000 /Year; 2016-2017* |
| | *$20,000* |
| | |
| Past | *Multiple Myeloma Research Foundation* |
| | *Targeted nano-particle for the treatment of multiple myeloma* |
| | *Mentor* |
| | *$75,000 /Year; 2015-2016* |
| | *$75,000* |
| | |
| Past | *Bear Cub entrepreneurship grant, Washington University in St. Louis* |
| | *Development of new markers for MM* |

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|---|---|
| | *Principal Investigator* |
| | *$20,000 /Year; 2015-2016* |
| | *$25,000* |
| | |
| Past | *Bear Cub entrepreneurship grant, Washington University in St. Louis* |
| | *Biodegradable hydrogel implants for localized radio-chemo-therapy in brain tumors* |
| | *Principal Investigator* |
| | *$42,000 /Year; 2015-2016* |
| | *$42,000* |
| | |
| Past | *Institute of Clinical and Translational Studies-Washington University in St. Louis* |
| | *The role of hypoxia in Pgp-mediated drug resistance in multiple myeloma* |
| | *Principal Investigator* |
| | *$50,000 /Year; 2014-2015* |
| | *$50,000* |
| | |
| Past | *Krayopharm Inc.* |
| | *The role of XPO1 in development of micro-residual disease in multiple myeloma* |
| | *Principal Investigator* |
| | *$60,000 /Year; 2014-2015* |
| | *$60,000* |
| | |
| Past | *Cellworks Inc.* |
| | *In silico simulation of the bone marrow microenvironment in multiple myeloma for drug development* |
| | *Principal Investigator* |
| | *$25,000 /Year; 2014-2015* |
| | *$25,000* |
| | |
| Past | *Verastem Inc.* |
| | *The role of PYK2 in development of cancer stem cells in multiple myeloma* |
| | *Principal Investigator* |
| | *$65,000 /Year; 2014-2015* |
| | *$65,000* |
| | |
| Past | *Selexys Pharmaceuticals* |
| | *Sensitization of multiple myeloma cells to therapy by specific inhibition of P-selectin* |
| | *Principal Investigator* |
| | *$45,000 /Year; 2014-2015* |

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|---|---|
| | *$45,000* |
| | |
| Past | *Multiple Myeloma Research Foundation* |
| | *The role of hypoxia in the micro-residual disease in multiple myeloma* |
| | *Mentor* |
| | *$75,000 /Year; 2013-2014* |
| | *$75,000* |
| | |
| Past | *International Waldenstrom's Macroglobulinemia Foundation* |
| | *The role of hypoxia in the dissemination of Waldenstrom's Macroglobulinemia* |
| | *Principal Investigator* |
| | *$62,500 /Year; 2012-2014* |
| | *$125,000* |
| | |
| Past | *AACR-Amgen, Inc. Fellowship in Clinical/Translational Cancer Research* |
| | *The role of hypoxia in the dissemination of Multiple Myeloma* |
| | *Principal Investigator* |
| | *$50,000 /Year; 2010-2011* |
| | *$50,000* |
| | |
| Past | *Multiple Myeloma Research Foundation* |
| | *The role of Selectins in Multiple Myeloma* |
| | *Principal Investigator* |
| | *$75,000 /Year; 2008-2009* |
| | *$75,000* |
| | |

## Teaching Activities

| Year(s) | Activity |
|---|---|
| Medical and graduate school didactic and small group teaching | |
| 2013-2022 | Lecturer in "Radiation Oncology" for Medical Residents, Washington University in St. Louis School of Medicine. The course is given every spring. |
| 2016-2022 | Lecturer in "Medical Imaging", a course for Graduate Students, Washington University in St. Louis School of Medicine. |
| 2018-2022 | Course Leader, "Drug Delivery: Principles and Applications", Department of Biomedical Engineering - Washington University in St. Louis School of Engineering. The course is given every fall. |
| 2021-2022 | Lecturer in "Cancer Biology Advanced Topics", a course for Graduate Students, Washington University in St. Louis School of Medicine |

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|---|---|
| Dissertation committees | |
| 2012-2015 | Diana Zhao |
| 2015-2019 | Fiona Ruiz |
| 2017-2021 | Daniel Lane |
| 2017-2021 | Gregory Fox |
| 2021-Current | Julia Wang |
| 2021-Current | Conor O'Neill |
| 2021-Current | Hengbo Huang |
| 2021-Current | Amanda Cimino |
| Qualifying examination committees | |
| | |
| Graduate student rotations | |
| 2014 | Shahd Qassem |
| 2016 | Karam Khateeb |
| 2016 | Marissa Maciej |
| 2017 | Marion Geoffroy |
| 2017 | Flora Haddadu |
| 2021 | Aya Salama |
| 2022 | Raquel Lopez |
| Medical and Pharmacy student rotations | |
| 2012-2014 | Joseph Abraham (for PharmD) |
| 2012-2015 | Nicholas Potter (for PharmD) |
| 2013 | Omer Vural (for MD) |
| 2013 | Osman Arif (for MD) |
| 2013 | Osman Arif (for MD) |
| 2013-2015 | Benjamin Minch (for PharmD) |
| 2014 | Fatma Betul Yildiz (for MD) |
| 2014 | Feyza Askin (for MD) |
| 2014 | Sumeyra Nur Gurler (for MD) |
| 2015 | Faith Slaton (for PharmD) |
| 2014-2016 | Nancy Quan (for PharmD) |
| 2015-2017 | Rachel Ghazarian (for PharmD) |
| 2014-18 | Hubert Kusdono (for PharmD) |
| 2014-2018 | Ryan Soo Hoo (for PharmD) |
| 2016-18 | Farrah Yuan (for PharmD) |
| 2017-2020 | Joseph Kotsybar (for PharmD) |
| 2018-2021 | Matea Markovic (for PharmD) |
| Graduate Student Trainees | |
| 2013-2017 | Micah Luderer (for PhD) |

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| 2017-2022 | Kinan Alhallak (for PhD) |
| 2017-2022 | Jennifer Sun (for PhD) |
| 2018-2020 | Zhe Wang (for MSc) |
| 2020-2021 | Luna Zhang (for MSc) |
| 2020-2022 | Anupama Melam (for MSc) |
| 2021-2022 | Mina Maksimos (for MSc) |
| Postgraduate medical education (graduate & continuing medical education) | |
| 2015-2016 | Mustafa Arslan, MD |
| 2018-2019 | Ahmet Surucu, MD |
| Postdoctoral trainees | |
| 2012-2017 | Barbara Muz, PhD |
| 2012-2017 | Pilar de la Puente, PhD |
| 2015-2016 | Farideh Ordikhani, PhD |
| 2016-2018 | Cinzia Federico, PharmD/PhD |
| 2018-2019 | Nassera Aouali, PhD |

## Invited Lectures

| Year(s) | Title | Location |
|---|---|---|
| International | | |
| 2010 | International Workshop on Waldenstrom's Macroglobulinemia | Venice, Italy |
| 2014 | Tel Aviv University | Tel Aviv, Israel |
| 2015 | Institute for Applied Research | The Galilee Society, Israel. |
| 2017 | Keynote Speaker, at the Annual Conference of the Young Arab Scientists Association (YASA) | Tel-Aviv, Israel. |
| 2017 | Luxembourg Institute of Health | Luxembourg, Luxembourg. |
| 2017 | Universitätsklinikum Freiburg | Freiburg, Germany |
| 2017 | San Raffaele Hospital-Milan | Milan, Italy |
| 2017 | Università degli Studi “Magna Graecia” | Catanzaro, Italy |
| 2017 | Arab Women in Science and Engineering (Let’s Talk Science Series) | Baqa, Israel |
| 2017 | Faculty of Business & Economics, Birzeit University | Birzeit, Palestinian Territories. |
| 2017 | Faculty of Pharmacy and Paramedical Sciences, Birzeit University | Birzeit, Palestinian Territories. |
| 2018 | Translational medicine focused on cell/molecular biology and metabolomics Conference, Dalian Institute of Chemical Physics (DICP), Chinese Academy of Sciences | Dalian, China. |
| 2019 | Arab Woman in Science and Engineering | Nazareth, Israel |

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|---|---|---|
| 2021 | A talk to Arab High School Students in Israel, Israeli Counsel of Higher Education | Zoom, Israel |
| 2021 | 2nd Global Oncology Virtual Summit, Abbott Inc. | Zoom, International |
| 2021 | Arara-Ara High School, | Zoom, Israel |
| 2021 | Hematology Research Group, at Champalimaud Foundation | Zoom, Lisbon, Portugal |
| 2022 | HemOnc Discovery Group, Janssen, J&J | Zoom, International |
| 2022 | Cancer Immunotherapy Group, Astra Zeneca | Zoom, International |
| 2022 | Gilead, Inc | Zoom, International |
| 2022 | Pionyr Immunotherapeutics | Zoom, International |
| 2023 | Hamasa for Health and Culture Advancement, Copenhagen, Denmark | Zoom, International |
| National | | |
| 2013 | Dana-Farber Cancer Institute, Harvard Medical School | Boston, MA |
| 2014 | North Illinois University | DeKalb, IL |
| 2014 | Predictive, Preventive and Personalized Medicine & Molecular Diagnostics | Las Vegas, NV. |
| 2015 | Dana Farber Cancer Institute, Harvard Medical School | Boston, MA |
| 2015 | Karyopharm Pharmaceuticals | Boston, MA |
| 2016 | University of Wisconsin, | Madison, WI |
| 2016 | Juno Therapeutics | Seattle, WA |
| 2017 | Advanced Oncology Course, University of Missouri | Columbia , MO. |
| 2017 | The Annual Meeting of American Chemical Society | San Francisco, CA. |
| 2018 | Cancer Grand Rounds at Rhode Island Hospital, The Warren Alpert Medical School, Brown University | Providence, RI. |
| 2018 | 4th Annual Immunotherapy in Myeloma Scientific Workshop | San Francisco, CA. |
| 2018 | Midwest Drug Development Conference | Omaha, NB |
| 2018 | Annual Investigators' meeting of the NCI Alliance for Nanotechnology in Cancer, National Cancer Institute, National Institute of Health | Rockville, MD. |
| 2018 | Hematologic Malignancies Symposium, The Warren Alpert Medical School, Brown University | Providence, RI. |
| 2019 | Department of MMICB, Southern Illinoi University | Springfield, IL. |
| 2019 | Brews and Breakthroughs lecture series, Missouri Cures, | St. Louis, MO |
| 2020 | Student Chapter of the American Association of Pharmaceutical Scientists, Saint Louis College of Pharmacy | Saint Louis, MO. |
| 2021 | 2nd Global Oncology Virtual Summit, Abbott Inc. | Zoom, Chicago, IL |

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|---|---|---|
| 2021 | Lunch with a Researcher: Precision Medicine. Missouri Cures, | Zoom, St. Louis, MO |
| 2022 | University of Texas Southwest | Dallas, TX |
| 2022 | University of Arkansas for Medical Sciences | Little Rock, AR |
| 2022 | BMT CTN Immune and Cellular Therapy in Multiple Myeloma Workshop | Zoom, Minneapolis, MN |
| 2022 | Musculoskeletal Biology and Regeneration Meeting | St. Louis, MO |
| 2022 | 2nd Tumor Myeloid-Directed Therapies Summit | Boston, MA |
| 2022 | Ground Rounds. University of Missouri | Zoom, Columbia, MO |
| Regional/Local | | |
| 2012 | Turkish Cultural Center | Boston, MA |
| 2013 | Saint Louis College of Pharmacy | St. Louis, MO |
| 2016 | BioEntrepreneurship Core | St. Louis, MO |
| 2016 | Neuro-Oncology Working Group, Siteman Cancer Center | St. Louis, MO |
| 2016 | Eurofins Bioanalytics | St. Charles, MO |
| 2016 | Solid Tumors Therapy Retreat, Siteman Cancer Center | St. Louis, MO |
| 2016 | Neuro-Oncology Working Group, Siteman Cancer Center | St. Louis, MO |
| 2016 | Imaging Working Group, Siteman Cancer Center | St. Louis, MO |
| 2018 | Center for Multiple Myeloma Nanomedicine, Siteman Cancer Center, Washington University in Saint Louis | St. Louis, MO |
| 2019 | Cancer Biology Division Research Seminar, Washington University in St. Louis. | St. Louis, MO |
| 2022 | Myeloma Translational Meeting, Washington University in St. Louis | St. Louis, MO |
| 2022 | Department of Physiology, UTSW Medical Center | Dallas, Texas |
| 2022 | Hematology-Oncology Group, UTSW Medical Center | Dallas, Texas |
| 2022 | AIRC Seminar Series, UTSW Medical Center | Dallas, Texas |
| 2022 | Hammon Center of Therapeutic Oncology Research, UTSW Medical Center | Dallas, Texas |
| 2022 | Department of Biomedical Engineering, University of North Texas | Dallas, Texas |
| 2022 | | |

**Technological and Other Scientific Innovations**

| Patents |
|---|

| Awarded: |
|---|
| Azab AK, de la Puente P and Azab F (Inventors). Hydrogels for localized radiotherapy. US15/300,158. |
| Azab AK, and de la Puente P (Inventors). 3D tissue-engineered bone marrow for personalized therapy and drug development. US14/942,543. |
| Azab AK, and de la Puente P (Inventors). 3D tissue-engineered bone marrow for personalized therapy and drug development. US15/585,653. |
| Pending: |
| Azab AK, Sun J, and Hyun K. (Inventors). Organ tattoo. Provisional Patent Application 9/2021. |
| Azab AK, Sun J, and Hyun K. (Inventors). CTMRker. Provisional Patent Application 9/2021. |
| Azab AK and Alhallak K (Inventors). Liposomal phytohemagglutinin as a pan cancer T cell therapy. Provisional Patent Application 5/2021 |
| Azab AK, and Armin Ghobadi. Compositions for treatment of viral respiratory infections and methods of use thereof. PCT 2021, WO2021202912A1 |
| Azab AK, Federico C, Sun J, Schwarz JK (Inventors). Implant devices and methods for treatment of cervical cancer. PCT 2021, WO2021202595A1. |
| Azab AK and Federico C. (Inventors). Liposome compositions and methods of treatment targeted to tumor endothelium. PCT 2021, WO2021096951A1 |
| Azab AK, Muz B, and de la Puente P (Inventors). Compositions and methods for targeted treatment and imaging of cancer or tumors. US 2020, US20200179520A1. |
| Azab AK and Alhallak K (Inventors). Nanoparticulate multi-specific T cell engagers for the treatment of multiple myeloma. US 2020, US20200172629A1 |
| Azab AK, and de la Puente P (Inventors). Nanoparticle compositions comprising cd38 and methods of use thereof. PCT 2019, WO2018081291A1. |
| Azab AK, Muz B and Azab F (Inventors). Biomarkers for multiple myeloma. US 2016, US20160299148A1 |
| Rabinovitz E., Rubinstein, A., Khazanov E., Azab AK., Yavin E., Barenholz Y. and Emmanuel N., (Inventors), Device for in vivo detection of a cancer biomarker. US 2011, 0092768. |
| Rubinstein A, Azab AK, Orkin B, Nisan A, Srebnik M, and Udassin R (Inventors), Biodegradable composite for internal local radiotherapy. US 2009, 0304587. |

## Bibliography

### Peer-Reviewed Publications

Original Research Articles


| | |
|---|---|
| 1. | Azab AK, Srebnik M, Doviner V, Rubinstein A. Targeting normal and neoplastic tissues in the rat jejunum and colon with boronated, cationic acrylamide copolymers. J Control Release. 2005 106(1-2):14-25. |
| 2. | Azab AK, Orkin B, Doviner V, Nissan A, Klein M, Srebnik M, Rubinstein A. Crosslinked chitosan implants as potential degradable devices for brachytherapy: in vitro and in vivo analysis. J Control Release. 2006. 111(3):281-9. |
| 3. | Azab AK, Kleinstern J, Doviner V, Orkin B, Srebnik M, Nissan A, Rubinstein A. Prevention of tumor recurrence and distant metastasis formation in a breast cancer mouse model by biodegradable implant of 131I-norcholesterol. J Control Release. 2007. 123(2):116-22. |
| 4. | Azab AK, Doviner V, Orkin B, Kleinstern J, Srebnik M, Nissan A, Rubinstein A. Biocompatibility evaluation of crosslinked chitosan hydrogels after subcutaneous and intraperitoneal implantation in the rat. J Biomed Mater Res A. 2007. 83(2):414-22. |
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