

Andrew B. Sharabi, M.D., Ph.D.

CURRENT POSITION

2015-Present Assistant Professor, Department of Radiation Medicine and Applied Sciences, University of California at San Diego

EDUCATION

1998-2001 B.S. - Bioengineering (Summa Cum Laude)
University of California at San Diego (UCSD), San Diego, CA

2002-2010 M.D./Ph.D. Program
Baylor College of Medicine (BCM), Houston, TX

2009 Ph.D. - Immunology
Thesis Title: "Elucidating the Role of Twist-2 in Myeloid Lineage Development and Function"
Baylor College of Medicine (BCM), Houston, TX

2010 M.D.
Baylor College of Medicine (BCM), Houston, TX

POSTGRADUATE TRAINING

2010-2011 Internship
Department of Medicine - Transitional Year Program
The Methodist Hospital, Houston, TX

2011-2015 Residency - Radiation Oncology
Department of Radiation Oncology and Molecular Radiation Sciences
Johns Hopkins University School of Medicine (JHU), Baltimore, MD

HONORS AND AWARDS

1997 Provost's Honors, Quarterly, University of California at San Diego
2000 Phi Beta Kappa National Honor Society
2001 Summa Cum Laude, University of California at San Diego
2001 UCSD Bioengineering Dept. Highest Academic Achievement Award
2003 BCM M.D./Ph.D. Program Academic Achievement Award
2006 2nd Place Poster, BCM Immunology Department Annual Symposium
2006 2nd Place Talk, BCM Center for Cell and Gene Therapy Conference

- 2007 2nd Place Poster, BCM Center for Cell and Gene Therapy Conference
2007 1st Place Talk, BCM Immunology Department Annual Symposium
2008 1st Place Talk, BCM MD/PhD Program Annual Symposium
2012 1st Place John G. Rangos Medal of Honor for Creativity in Cancer
Discovery, Johns Hopkins University (\$20,000)
2013 ASTRO Residents/Fellows in Radiation Oncology Research Seed Grant,
Johns Hopkins University (\$25,000)
2013 Hopkins Spore Grant Pilot Project Co-Investigator: Cellular Immunity
in HPV Oropharyngeal Cancer, Johns Hopkins University (\$25,000)
2014 American Society for Radiation Oncology (ASTRO) Resident Clinical
Basic Science Research Award
2015 American Society for Radiation Oncology (ASTRO) Travel Award
2015 Roentgen Resident/Fellow Research Award

RESEARCH EXPERIENCE

- 1998-2002 Scientific Intern: The Scripps Research Institute, Department of Cell
Biology, Vito Quaranta M.D.
“Custom Microarray Protocol and Analysis” &
“Role of Laminin-5 in Cancer Cell Migration and Invasion”
- 2004-2009 Graduate Student: Baylor College of Medicine, Center for Cell and Gene
Therapy & Department of Immunology.
Si-Yi Chen M.D., Ph.D. (Major Advisor)
Margaret Goodell, Ph.D. (Co-Mentor)
“Role of Twist-2 in Hematopoiesis and Immunotherapy”
- 2013-2014 Resident Physician Research Year:
Johns Hopkins Medical Institute School of Medicine
Dr. Charles Drake (Mentor) and Dr. Theodore Deweese (Co-mentor)
"Radiation Induced Antigen Specific Immune responses"

PUBLICATIONS

1. Hintermann E, Bilban M, **Sharabi A**, Quaranta V. “Inhibitory role of alpha 6 beta 4-associated erbB-2 and phosphoinositide 3-kinase in keratinocyte haptotactic migration dependent on alpha 3 beta 1 integrin.” *J Cell Biol.* 2001 Apr 30;153(3):465-78.
2. Hintermann E, Haake SK, Christen U, **Sharabi A**, Quaranta V. “Discrete proteolysis of focal contact and adherens junction components in Porphyromonas gingivalis-infected oral keratinocytes: a strategy for cell adhesion and migration disabling.” *Infect Immun.* 2002 Oct;70(10):5846-56.
3. Pirila E, **Sharabi A**, Salo T, Quaranta V, Tu H, Heljasvaara R, Koshikawa N, Sorsa T, Maisi P. “Matrix metalloproteinases process the laminin-5 gamma 2-chain and

- regulate epithelial cell migration." *Biochem Biophys Res Commun.* 2003 Apr 18;303(4):1012-7.
4. Koshikawa N, Schenk S, Moeckel G, **Sharabi A**, Miyazaki K, Gardner H, Zent R, Quaranta V. "Proteolytic processing of laminin-5 by MT1-MMP in tissues and its effects on epithelial cell morphology." *FASEB J.* 2004 Feb;18(2):364-6.
 5. Bilban M, Ghaffari-Tabrizi N, Hintermann E, Bauer S, Molzer S, Zoratti C, Malli R, **Sharabi A**, Hiden U, Graier W, Knofler M, Andrae F, Wagner O, Quaranta V, Desoye G. "Kisspeptin-10, a KiSS-1/metastatin-derived decapeptide, is a physiological invasion inhibitor of primary human trophoblasts." *J Cell Sci.* 2004 Apr 15;117(Pt 8):1319-28.
 6. Koshikawa N, Minegishi T, **Sharabi A**, Quaranta V, Seiki M. "Membrane-type matrix metalloproteinase-1 (MT1-MMP) is a processing enzyme for human laminin gamma 2 chain." *J Biol Chem.* 2005 Jan 7;280(1):88-93.
 7. **Sharabi AB.**, Aldrich M., Sosic D., Olson EN., Friedman AD., Lee SH., Chen SY. "Twist-2 Controls Myeloid Lineage Development and Function." *PLoS Biology.* 2008 Dec 16;6(12)
 8. Lee SH., Hong B., **Sharabi AB.**, Huang XF., Chen SY. "Embryonic Stem Cells and Mammary Luminal Progenitors Directly Sense and Respond to Microbial Products." *Stem Cells* 2009 Jul;27(7):1604-15.
 9. **Sharabi AB.**, Lee SH., Goodell MA., Huang XF., Chen SY. "Enhanced Generation of Myeloid Lineages in Hematopoietic Differentiation from Embryonic Stem Cells by Silencing Transcriptional Repressor Twist-2". *Cloning Stem Cells.* 2009 Dec;11(4):523-33.
 10. Pinkawa M, Schoth F, Böhmer D, Hatiboglu G, **Sharabi A**, Song D, Eble MJ. "Current standards and future directions for prostate cancer radiation therapy." *Expert Rev Anticancer Ther.* 2013 Jan;13(1):75-88
 11. Wild AT, Hiniker SM, Chang DT, Tran PT, Khashab MA, Limaye MR, Laheru DA, Le DT, Kumar R, Pai JS, Hargens B, **Sharabi AB**, Shin EJ, Zheng L, Pawlik TM, Wolfgang CL, Koong AC, Herman JM. "Re-irradiation with stereotactic body radiation therapy as a novel treatment option for isolated local recurrence of pancreatic cancer after multimodality therapy: Experience from two institutions." *J Gastrointest Oncol.* 2013 Dec;4(4):343-51.
 12. McNutt T., Evans K., Moore J., Yang W., Herman J., Quon H., **Sharabi A.**, Wong J., DeWeese T. "WE-G-108-02: Oncospace: A Database Designed for Personalized Medicine in Radiation Oncology" *Med. Phys.* 40, 501 (2013);
 13. **Sharabi AB.**, Herman J., Weiss V., Laheru DA., Tuli R., "Role of radiotherapy combined with chemotherapy, targeted therapy, and immunotherapy in the management of pancreatic cancer." *J Radiat Oncol* (2013) 2:369–379
 14. Yang WY., Moore J., Quon H., Evans K., **Sharabi A.**, Herman J., Hacker-Prietz A., McNutt T. "Browser Based Platform in Maintaining Clinical Activities – Use of the iPads in Head and Neck Clinics." 2014 *J. Phys.: Conf. Ser.* 489 012095
 15. Raval RR., **Sharabi AB.**, Walker AJ., Drake CG., Sharma P. "Tumor immunology and cancer immunotherapy: summary of the 2013 SITC primer." *Journal for ImmunoTherapy of Cancer* 2014, 2:14 (14 May 2014)
 16. **Sharabi AB**, Nirschl CJ, Kochel CM, Nirschl TR, Francica BJ, Velarde E, DeWeese TL, Drake CG. "Stereotactic Radiation Therapy Augments Antigen-

- Specific PD-1 Mediated Anti-Tumor Immune Responses via Cross-Presentation of Tumor Antigen." *Cancer Immunol Res.* 2014 Dec 19.
17. **Sharabi AB.**, Drake CG. "Radiation boosts immunotherapy." *Cancer Discov. – News in Brief* 2014 Dec;4(12):1360-1. Epub 2014 Oct 16.
 18. **Sharabi AB.**, Tran PT., Lim M., Drake CG., DeWeese TL., "Stereotactic Radiotherapy combined with Immunotherapy: Augmenting Radiation's Role in Local and Systemic Treatment." *Oncology.* 2015 May;29(5):331-40.
 19. Robertson SP, Quon H, Kiess AP, Moore JA, Yang W, Cheng Z, Afonso S, Allen M, Richardson M, Choflet A, **Sharabi AB.**, McNutt TR. A data-mining framework for large scale analysis of dose-outcome relationships in a database of irradiated head and neck cancer patients. *Med Phys.* 2015 Jul;42(7):4329.
 20. **Sharabi AB.**, Drake CG. "Radiation Combined with Checkpoint Blockade Immunotherapy: Radiosensitization and Potential Mechanisms of Synergy." 2015 *Lancet Oncology – In Press*
 21. **Sharabi AB.**, Myers L., Bin S., Dah S., Duhon M., Ford K., Zellars RC., Asrari F. "Dosimetric Impact and 3D Non-Deformable Modeling of Metallic Breast Expander Ports During Post-Mastectomy Radiation Therapy." *In Preparation*
 22. Walker A., Nirschl C., Nugent K., Nirschl TR., Harris TJ., **Sharabi AB.**, Velarde E., Wong J., Hales R., Drake CG., Tran PT. "PD-L1 blockade and radiation results in tumor and immunological responses in an autochthonous mouse model of lung cancer." *Submitted – Under Review*
 23. **Sharabi AB.**, Huynh-Le M., Tryggestad E., Alcorn S., Ahuja N., Frassica DA., McNutt TR., Herman, J., Hales RK., Terezakis SA. "PTV Safety Margin Derivation from analysis of Cone Beam-CT Shifts for Abdomino-pelvic Soft Tissue Sarcomas." *Submitted – Under Review*
 24. Nirschl CJ., Francica BJ., Kochel CM., Nirschl TR. McAllister F., Durham NM., Alme A., Jackson CM., **Sharabi AB.**, Shen YC., Martin A., Anandasabapathy N., Brockstedt DG., DubenskyTW., Lauer P., Drake CG. "Attenuated *Listeria Monocytogenes* Vaccines Activate a Unique Transcriptional Signature in CD8 α + Dendritic Cells that Drives Decreased PD-1 Expression on Activated CD8+ T Cells" *Submitted - Under Review*

PRESENTATIONS – (NATIONAL AND INTERNATIONAL MEETINGS)

1. "Role of Twist-2 in Myeloid Development" **Sharabi A.**, Lee S., Aldrich M., Chen SY. *Keystone Symposia - Stem Cells and Cancer (X2) 2007*
2. "Roles of negative regulators in the hematopoietic differentiation of murine ES cells" Lee S., **Sharabi A.**, Chen SY. *American Association for Cancer Research (AACR) Annual Meeting 2007*
3. "Twist-2 plays an important role in regulation of thymocyte development and T-cell function" Aldrich M., **Sharabi A.**, Chen SY. *American Association for Cancer Research (AACR) Annual Meeting 2007*
4. "Role of Twist-2 in Dendritic Cell-based Immunotherapy" **Sharabi A.**, Aldrich M., Chen SY. *American Association for Cancer Research (AACR) Annual Meeting 2007*

5. "Function of Twist-2 as an antigen presentation attenuator and effect on potency of dendritic cells for immunotherapy." **Sharabi A.**, Aldrich M., Chen SY *American Society of Clinical Oncology (ASCO) Annual Meeting 2008*
6. "Automated Cross-Referencing of Radiation Prescriptions to Diagnosis: A Proposed Mechanism to Improve Patient Safety" **Sharabi A.**, McNutt T., DeWeese T. *American Society for Radiation Oncology (ASTRO) Annual Meeting 2012*
7. "Analysis of Cone Beam CT Shifts in Image Guided Radiation Therapy for Abdominopelvic Soft-tissue Sarcomas" **Sharabi A.**, Alcorn S., Tryggestad E., Ahuja N., Frassica D., McNutt T., Hales R., Terezakis S. *American Society for Radiation Oncology (ASTRO) Annual Meeting 2012*
8. "Oncospace: A radiation oncology database designed for personalized medicine and data sharing" McNutt T., Evans K., Moore J., Yang W., **Sharabi A.**, Herman J., Quon H., Wong J., Deweese T. *NCI/ASTRO/AAPM Workshop 2013*
9. "Dosimetric Impact and 3D Non-Deformable Modeling of Metallic Breast Expander Ports During Post-Mastectomy Radiation Therapy." **Sharabi AB.**, Myers L., Bin S., Dah S., Duhon M., Ford K., Zellars RC., Asrari F. *American Society for Radiation Oncology (ASTRO) Annual Meeting 2013*
10. "A Data-Mining Algorithm for Large Scale Analysis of Dose-Outcome Relationships in a Database of Irradiated Head-and-Neck (HN) Cancer Patients." Robertson S., Quon H., Kiess A., Moore J., Yang W., Cheng Z., **Sharabi AB.**, McNutt T. *American Association of Physicists in Medicine Annual Meeting 2014*
11. "Antigen-specific immune responses in melanoma using stereotactic radiotherapy combined with anti-PD1 checkpoint blockade." **Sharabi AB.**, Nirschl C., Ceccato T., Francica B., Alme A., Nirschl T., Velarde E., Deweese T., Drake C. *American Association for Cancer Research (AACR) Annual Meeting 2014*
12. "Routine Capture of Structured Data Elements (SDE) Provides Insight into Unique Dose-Toxicity Relationships in Irradiated Head and Neck (HN) Cancer Patients." Robertson S., Quon H., Kiess A., Cheng Z., **Sharabi A.**, McNutt T. *American Society for Radiation Oncology (ASTRO) Annual Meeting (2014)*
13. "Combining checkpoint blockade with radiation therapy results in tumor and immunological responses in an autochthonous mouse model of lung cancer" Walker AJ., Nirschl CJ., Nugent KM., Nirschl TR., Harris TJ., **Sharabi AB.**, Velerde E., Wong J., Drake C., Tran PT., *American Society for Radiation Oncology (ASTRO) Annual Meeting (2014)*
14. "Role Of Radiotherapy In Inducing Antigen Specific Anti-Tumor Immune Responses When Combined With Anti-PD1 Checkpoint Blockade: Mechanism And Clinical Implications. " **Sharabi AB.**, Nirschl C., Ceccato T., Nirschl T., Francica B., Alme A., Velarde E., Deweese T., Drake C. *American Society for Radiation Oncology (ASTRO) Annual Meeting (Sept 15th 2014) –Plenary Session*
15. "Radiotherapy combined with anti-PD-1 Checkpoint Blockade Immunotherapy: A Promising Future Direction" **Sharabi AB.**, Nirschl C., Ceccato T., Nirschl T., Francica B., Alme A., Velarde E., Deweese T., Drake C. *The 2nd Annual Baltimore-Philadelphia Prostate Cancer Amtrak Alliance Summit. (Nov 7th 2014)*
16. "Radiotherapy combined with anti-PD-1 Checkpoint Blockade Immunotherapy: A Promising Future Direction" **Sharabi AB.**, Nirschl C., Ceccato T., Nirschl T.,

Francica B., Alme A., Velarde E., Deweese T., Drake C. *NCI Clinical Trials Planning Meeting for NMIBC 2015*

BOOK CHAPTERS

Innovative Radiotherapy Techniques for Prostate Cancer. Michael Pinkawa, Dirk Bohmer, Michael Eble, Boris Hadaschik, Gencay Hatiboglu, Markus Hohenfellner, Danny Song, Felix Schoth, **Andrew Sharabi**, Matthias Uhl. 1st edition – Bremen: UNI-MED 2012.

Prostate Cancer: A Multidisciplinary Approach to Diagnosis and Management. Adam P. Dicker, William Kevin Kelly, and Edouard J. Trabulsi. (**Andrew Sharabi**, author on chapter titled "Radiation and the Immune System"). Demos Medical Publishing, New York, NY. December 19, 2014 ISBN-13: 978-1936287598 Edition: 1st

TEACHING EXPERIENCE

2005 Teaching Assistant; BCM Graduate School, Clinical Immunology
2006-2009 Teaching Assistant; BCM Medical School, Immunology Course
2012-Current Lecturer, Johns Hopkins, Resident Radiobiology Lectures
2014-2015 Chief Research Resident

EXTRACURRICULAR ACTIVITIES

1997 1st place Univ. of San Diego Walk-on-Water Engineering Competition
2004-2006 Webmaster for Baylor MD/PhD Program Website
2007 ECAP (Early College Awareness Program) Committee Member
2008 ECAP (Early College Awareness Program) SAT Committee Chair
2006-2009 Baylor MD/PhD Program Student Operating Committee (SOC) Member
2008-2010 BP MS150 Ride Team Captain (Raised \$4500 for National MS Society)

RESEARCH GRANT SUPPORT AND FELLOWSHIPS

1997-2001 Florence Riford Rotary Scholar
1997-2001 Armed Forces Communications and Electronics Association Scholar
2002-2004 Baylor MSTP Program - Hudson Scholar
2005-2006 CAGT Training Grant (T32 DK064717-03)
2007-2008 Immunology Department Training Grant (T32 AI07495-11)
2008-2009 (\$5000) Consortium of Multiple Sclerosis Centers (CMSC) Research Scholarship
2012 (\$20,000) John G. Rangos Award for Creativity in Cancer Discovery, Johns Hopkins University School of Medicine.

- 2013-2014 (\$25,000) ASTRO Residents/Fellows in Radiation Oncology Research Seed Grant, Johns Hopkins University School of Medicine
- 2013-2014 (\$25,000) Spore pilot project funding Co-Investigator: "Cellular Immunity in HPV OPSCC", Johns Hopkins University School of Medicine

PEER REVIEWER

European Oncology & Haematology: *Ad Hoc*
International Journal of Molecular Sciences: *Ad Hoc*
Practical Radiation Oncology: *Ad Hoc*

CLINICAL TRIALS

J13158: Evaluation of Immunologic Responses in HPV-Associated Oropharyngeal Carcinoma Patients Receiving Chemoradiation Therapy; Johns Hopkins Hospital, *Co-Investigator*

J1382: A Pilot Study of Stereotactic RadioSurgery combined with Ipilimumab in Patients with Newly Diagnosed Melanoma Metastases in the Brain and Spine; Johns Hopkins Hospital, *Participating Investigator*

PROFESSIONAL MEMBERSHIPS

American Medical Association (AMA)
American Association for Cancer Research (AACR)
American Society of Clinical Oncology (ASCO)
American Society for Radiation Oncology (ASTRO)
Society for Immunotherapy of Cancer (SITC)