

JENNIFER REBELES

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EDUCATION

Ph.D., Nutritional Biochemistry

Gillings School of Global Public Health, University of North Carolina at Chapel Hill, Chapel Hill, NC. 2017

Thesis advisor: Melinda A. Beck, Ph.D.

Thesis title: *A distant T cell memory: weight loss and weight gain in the immune response to influenza infection*

MS, Biology

University of Texas at San Antonio, San Antonio, TX. 2009

BS, Biochemistry

St. Mary's University, San Antonio, TX. 2001

PROFESSIONAL EXPERIENCE

Vice President of Diagnostics, bioAffinity Technologies, San Antonio, TX, September 2022-current

- Led Diagnostic team in the design of experiments for research and further development for CyPath[®] Lung.
- Development of other flow cytometry diagnostic tests utilizing current proprietary technology.

Director of Diagnostics, bioAffinity Technologies, San Antonio, TX, April 2019-September 2022

- Led the development of the research developed flow cytometry lung cancer detection test to a commercial, clinical use LDT test.
- Managed team of scientists and provided technical guidance and training on laboratory protocols and flow cytometry.
- Prepared company written reports and submission of scientific findings for publication.
- Flow cytometry consultant to Precision Pathology Services.

Research Scientist, United States Air Force 59th Medical Wing, Science and Technology, Lackland Air Force Base, San Antonio, TX 78236, August 2018-April 2019

- Provided scientific and technical support to management of research projects, multiple concurrent solicitations, proposal review processes, and contract awards for funding.
- Supervised research lab experiments in large animal models testing potential antidotes for mitochondrial toxins used in bioterrorism agents.
- Performed recurring analyses on research portfolios to identify critical gaps in military medicine, exceptional results, or lack of progress in research areas.
- Submitted research progress reports and data to Department of Defense and military related, scientific journals.

National Research Council Postdoctoral Research Associate, Department of Sensory Trauma, US Army Institute of Surgical Research, San Antonio, TX, August 2017-2018

- Culturing and differentiation of induced pluripotent stem cells to neurospheres for transplant in animal models to study regeneration in ocular trauma animal models.
- Conducted immunocytochemistry to measure expression of stem cell lineage markers by detection with confocal microscopy.
- Isolation, processing and cryopreservation of extracellular vesicles from conditioned media derived from human induced pluripotent stem cells.
- Trained and supervised assigned staff in relevant protocols and procedures.

Graduate Research Assistant, PhD doctoral candidate, Department of Nutrition, University of North Carolina at Chapel Hill, Chapel Hill, NC, 2012-2017

Flow Cytometry and Microarray Technical Director, Department of Medicine, University of Texas Health Sciences Center at San Antonio, Greehey Children's Cancer Research Institute (GCCRI), San Antonio, TX, 2006-2012.

Senior Research Associate (Lab Manager), Department of Pediatrics, University of Texas Health Sciences Center at San Antonio, GCCRI, San Antonio, TX, 2005-2006.

Research Associate, Flow cytometry operator, Department of Oncology, Flow Cytometry Core Facility, University of Texas Health Sciences Center at San Antonio, San Antonio, TX, 2004-2005.

Senior Research Assistant, Department of Microbiology, Nucleic Acids Core Facility, University of Texas Health Sciences Center at San Antonio, San Antonio, TX, 2002-2004.

Research Assistant, Department of Microbiology, Nucleic Acids Core Facility, University of Texas Health Sciences Center at San Antonio, San Antonio, TX, 2001-2002.

AWARDS AND HONORS

Emerging Leaders in Nutrition Science Poster Competition Travel Award winner, Experimental Biology 2017
Ethel J. Coleman Scholarship in Nutritional Biochemistry, 2012

PROFESSIONAL AFFILIATIONS

Member, American Society of Nutrition

Member, American Association for the Advancement of Science

Member, International Society for Advancement of Cytometry

PUBLICATIONS AND PRESENTATIONS

Publications

1. Bauta W, Grayson M, Titone R, **Rebeles J**, Rebel VI. Porphyrin-Modified Beads for Use as Compensation Controls in Flow Cytometry. J Vis Exp. 2023 Mar 24;(193). doi: 10.3791/65294. PMID: 37036210.
2. Lemieux ME, Reveles XT, **Rebeles J**, Bederka LH, Araujo PR, Sanchez JR, Grayson M, Lai SC, DePalo LR, Habib SA, Hill DG, Lopez K, Patriquin L, Sussman R, Joyce RP, Rebel VI. Detection of early-stage lung cancer in sputum using automated flow cytometry and machine learning. Respir Res. 2023 Jan 21;24(1):23. doi: 10.1186/s12931-023-02327-3. PMID: 36681813; PMCID: PMC9862555.
3. Bederka LH, Sanchez JR, **Rebeles J**, Araujo PR, Grayson MH, et al. (2022) Sputum analysis by flow cytometry; an effective platform to analyze the lung environment. PLOS ONE 17(8): e0272069. <https://doi.org/10.1371/journal.pone.0272069>
4. Grayson M, Lai SC, Bederka LH, Araujo P, Sanchez J, Reveles XT, Rebel VI, **Rebeles J**. Quality-Controlled Sputum Analysis by Flow Cytometry. J Vis Exp. 2021 Aug 9;(174). doi: 10.3791/62785. PMID: 34424239.
5. McDaniel JS, Scott LLF, **Rebeles J**, Bramblett GT, Eriksson E, Johnson AJ, Griffith GL. Treatment of Corneal Infections Utilizing an Ocular Wound Chamber. Transl Vis Sci Technol. 2020 Nov 2;9(12):4. doi: 10.1167/tvst.9.12.4. PMID: 33200046; PMCID: PMC7645231.

6. Maddry JK, Paredes RM, **Rebeles J**, Olson G, Castaneda M, Canellis K, Ng PC, Bebartá VS. Efficacy of Intravenous Hydroxocobalamin for Treatment of Sodium Methanethiolate Exposure in a Swine Model (Sus scrofa) of Severe Methanethiol Toxicity. *J Med Toxicol*. 2020 Oct;16(4):388-397. doi: 10.1007/s13181-020-00767-7. Epub 2020 Apr 1. PMID: 32239422; PMCID: PMC7554292.
7. **Rebeles J**, Green WD, Alwarawrah Y, Nichols AG, Eisner W, Danzaki K, MacIver NJ, Beck MA. Obesity-induced changes in T cell metabolism are associated with impaired memory T cell response to influenza and are not reversed with weight loss. *J Infect Dis*. 2018 Dec 9. doi: 10.1093/infdis/jiy700. [Epub ahead of print].
8. Neidich S, Green WG, **Rebeles J**, Karlsson EA, Schultz-Cherry S, Noah TL, Chakladar S, Hudgens MG, Weir SS, Beck MA. Increased risk of influenza among vaccinated adults who are obese. *International Journal of Obesity*. 2017 Sep;41(9):1324-1330. doi: 10.1038/ijo.2017.131. Epub 2017 Jun 6.
9. Milner JJ, **Rebeles J**, Meyers MH, Mancuso P, Beck MA. Obesity increases mortality and modulates the lung metabolome during pandemic H1N1 influenza virus infection in mice. *J Immunol*. 2015 May 15;194(10):4846-59. doi: 10.4049/jimmunol.1402295. Epub 2015 Apr 10.
10. Abraham J, Nuñez-Álvarez Y, Hettmer S, Carrió E, Chen HI, Nishijo K, Huang ET, Prajapati SI, Walker RL, Davis S, **Rebeles J**, Wiebush H, McCleish AT, Hampton ST, Bjornson CR, Brack AS, Wagers AJ, Rando TA, Capecchi MR, Marini FC, Ehler BR, Zarzabal LA, Goros MW, Michalek JE, Meltzer PS, Langenau DM, LeGallo RD, Mansoor A, Chen Y, Suelves M, Rubin BP, Keller C. Lineage of origin in rhabdomyosarcoma informs pharmacological response. *Genes Dev*. 2014 Jul 15;28(14):1578-91.
11. Shen-Gunther J, **Rebeles J**. Genotyping human papillomaviruses: Development and evaluation of a comprehensive DNA microarray. *Gynecol Oncol*. 2013 Mar;128(3):433-41. doi:10.1016/j.ygyno.2012.11.028. Epub 2012 Nov 28.
12. Imam JS, Plyler JR, Bansal H, Prajapati S, Bansal S, **Rebeles J**, Chen HI, Chang YF, Panneerdoss S, Zoghi B, Buddavarapu KC, Broaddus R, Hornsby P, Tomlinson G, Dome J, Vadlamudi RK, Pertsemliadis A, Chen Y, Rao MK. Genomic loss of tumor suppressor miRNA-204 promotes cancer cell migration and invasion by activating AKT/mTOR/Rac1 signaling and actin reorganization. *PLoS One*. 2012;7(12):e52397. doi: 10.1371/journal.pone.0052397. Epub 2012 Dec 21.
13. Guadalupe, M, Pollock, BH, Westbrook, S, Redding, S, Bullock, D, Anstead, G, Agan, BK, Marconi, VC, Barbieri, S, Sankar, V, **Rebeles, J**, Flahive, Y, Schoolfield, J, Wang, L, Lei, X, Dow, D, Yeh, CK, Dang, H, Infante, AJ, Gao, SJ. (2011) Risk Factors Influencing Antibody Responses to Kaposi's Sarcoma-Associated Herpesvirus Latent and Lytic Antigens in Patients Under Antiretroviral Therapy. *J Acquir Immune Defic Syndr*. Jan: 56(1):83-90.

Book Chapters

1. Greene, WA, Kaini RR, **Rebeles J**, Rettinger CL, Wang, H. Utility of induced pluripotent stem cell-derived retinal pigment epithelium for an *in vitro* model of proliferative vitreoretinopathy. In preparation.
2. Erik A Karlsson, EA, Milner JJ, Green, WD, **Rebeles, J**, Schultz-Cherry, S, Beck, MA. Influence on Obesity on the Response to Influenza Infection and Vaccination. In: Mechanisms and Manifestations of Obesity in Lung Disease, Johnson, R., Suratt, B., Eds., Academic Press, 227-259, 2019.

Oral Presentations

1. **Rebeles, J**, Burke, TA, Greene, WA, Kaini RR, Wang, H. "Neuroprotective factors secreted by retinal progenitors derived from induced pluripotent stem cells." Tissue Engineering and Regenerative Medicine, 2017.

Abstracts

1. Bederka LH, Lai SC, **Rebeles J**, Grayson M, Reveles XT, Rebel VI. Sputum-Derived Cellular Profiles Produced by Flow Cytometric Analysis. International Society for Advancement of Cytometry, CYTO 2020, August 4-5, 2020, virtual.

2. **Rebeles, J**, Green W, MacIver NJ, Beck MA. Obesity resets the metabolic profile of T cells, resulting in reduced memory T cell response to influenza infection; (Abstract #434.1) Experimental Biology, American Society of Nutrition. Chicago, IL, April 22, 2017.

3. Green W, **Rebeles J**, Bahena M, Bartholomew K, MacIver NJ, Weir S, Beck MA. Obesity drives the metabolic phenotype of PBMCs towards oxidative phosphorylation in Caucasian women vaccinated against influenza; (Abstract #434.3). Experimental Biology, American Society of Nutrition. Chicago, IL, April 22, 2017.

4. Neidich S, **Rebeles J**, Ahmad H, Nguyen H, Beck MA. Influenza vaccination and obesity: B –cell response. Nutritional Immunology: Role in Health and Disease. Lisbon, Portugal, July 26-31, 2015.

5. **Rebeles J**, Paulson J, Paich HA, Milner JJ, Xio JP, Hudgens MG, Noah TL, Beck MA. Effect of obesity in children on the response to the influenza virus vaccination; (Abstract/Program #639.6). Experimental Biology, American Society of Nutrition. San Diego, CA, April 26-30, 2014.

6. Weibush, H, McCleish, A, **Rebeles, J**, Keller, C. Bone Marrow Cells as a Possible Progenitor of Alveolar Rhabdomyosarcoma, An Aggressive Childhood Muscle Cancer. Annual South Padre Island Symposium on Advances in Cell Signaling, South Padre Island, Texas, November 7-8, 2008.

7. Kircelli, F, Akay, C, **Rebeles, J**, Gazitt, Y. Silencing of p53 or p21 sensitize myeloma cells to arsenic trioxide (ATO)-induced apoptosis. 97th Annual Meeting of the American Association for Cancer Research. Washington, DC, April 1-5, 2006.

8. Akay, C, Kircelli, F, **Rebeles, J**, Gazitt, Y. Synergy between 17-AAG and Arsenic Trioxide (ATO) in induction of apoptosis in myeloma cell lines. 97th Annual Meeting of the American Association for Cancer Research. Washington, DC, April 1-5, 2006.