

# Michelle Di Palma

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## EDUCATION

Arizona State University, Tempe, AZ

**Ph.D. Molecular and Cellular Biology (Focus: Immunology)**

Graduated July 2023

*Dissertation: Determining the Role of Innate Immune Elements on RNA Viral Replication and Understanding Factors That Impact Adaptive T Cell Anti-Tumoral Activity Against Metastatic Osteosarcoma (mOS)*

GPA:4.0/4.0

**M.S. Molecular and Cellular Biology (Focus: Vaccinology)**

Graduated in August 2018

*Thesis: Expression of Recombinant Zika Virus-like Particles in Nicotiana benthamiana*

GPA:4.0/4.0

**B.S. Molecular Biosciences and Biotechnology Summa Cum Laude**

Graduated in May 2017

GPA:4.0/4.0

## POSITIONS AND WORK EXPERIENCE

### Instructor

Arizona State University, Tempe, AZ

August 2024- present

University Instructor for the following courses

- Fall 2024: BIO 181 Introduction to Biology (Immersion), MIC 420 Immunology (Online), LIA 194 Immunity in Daily Life (Immersion).
- Spring 2025: BIO 181 Introduction to Biology (Online), MIC 205 Microbiology (Online), MIC 420 Immunology (Online), BIO 100 Living World (Online), LIA 194 Cancer and its current therapies (Immersion).
- Sum 2025: BIO 353 Cell Bio (Online), MIC 420 Immunology (Online), BIO 357 Cell Bio Lab (Online).
- Fall 2025: BIO 181 Introduction to Biology (Immersion), BIO 181 Introduction to Biology (Online), MIC 420 Immunology (Online), BIO 353 Cell Bio (Online), LIA 194 The Microbiome and Health (Immersion).
- *Scheduled* Spring 2026: MIC 420 Immunology (Immersion), MIC 420 Immunology (Online), MBB 347 Molecular Genetics (Immersion), BIO 353 Cell Bio (Online), LIA 194 Cancer and Its Current Therapies (Immersion), BIO 494 Topic: Honors Project for Immunology (Immersion), BIO 597 Capstone (Online).

*Course Development: As an Instructor, I have designed and developed all three Discovery Series courses listed above (LIA 194) as well as a Version 2 of online Cell Biology (BIO 353), including video lectures, assessments, study guides, and accessibility-aligned content in collaboration with Ed Plus. I have also developed online instructional materials for Immunology (BIO 420/MIC 598), including study guides, video lectures, and PowerPoints that align with evidence-based teaching strategies.*

### Post-Doctoral Scholar

Arizona State University, Tempe, AZ

July 2023-August 2024

- Research focused on how modulation of the microbiome can improve Immune Checkpoint Blockade (ICB) for metastatic osteosarcoma (mOS).
- Additional research was based on a project that focuses on determining how the depletion of the microbiome impacts T immune cell function against viral illness.

### **Faculty Associate**

Arizona State University, *Tempe, AZ*

January 2024-August 2024

- Lectured for online MIC 420: Immunology, Molecular and Cellular Foundations (Spring 2024).
- Developed course videos and supplemental PowerPoint presentations, and held office hours for online students.

### **Teaching Assistant**

Arizona State University, *Tempe, AZ*

Summer 2017-Fall 2023

- Academic Associate for MIC 206: Microbiology Laboratory (Fall 2023)
- Lecture TA for MIC 425: Advanced Immunology (Spring 2022, Spring 2023)
- Lecture TA for MIC 420: Immunology (Spring 2022)
- Online Lecture TA for BIO 100: BioBeyond: Living World (Summer 2020; Summer 2021)
- Online Lecture TA for MIC 420: Immunology (Summer 2021)
- Lab TA for MBB 343: Genetic Engineering (Spring 2018; Spring 2019; Spring 2020, Spring 2021)
- Lab TA for MBB 347: Molecular Genetics: From Genes to Proteins (Fall 2019; Fall 2020);
- Lab TA for BIO 201: Anatomy and Physiology 1 (Fall 2018);
- Online Lecture TA for BIO 112: Biology, Why sex? (Summer 2018);
- Lab TA for BIO 181: General Biology I (Summer 2017, Fall 2017);
- Lecture TA for BIO 340: General Genetics (Summer 2017)

### **Vice President of Internal Affairs;** Graduate and Professional Student Association (GPSA)

Arizona State University, *Tempe,*

June 2021-June 2022

- Managed distribution and allocation of funding (~\$800K) for all GPSA Graduate Travel and Research Grant Programs.
- Hired, trained, and managed the Director of Research and the Director of Travel.
- Ensured GPSA Travel and Research grant programs abide by ASU's Academic Integrity Policy.
- Had final review and responsibility for changes in GPSA grant deadlines, policy changes for GPSA-managed grants, and student grant award decisions, excluding conflicts of interest.

### **Director of Research;** Graduate and Professional Student Association (GPSA)

Arizona State University, *Tempe,*

June 2020-May 2021

- Managed all Graduate Research Grant Programs administered by GPSA
- Trained and guided all (80+) Graduate Reviewers for Research Grant Review using an Interdisciplinary Peer-Review Process

2020-2021 Accomplishments:

1. Wrote and created a sustainable Publication Fee Grant Program for Graduate Students.
2. Re-formatted Application to be more concise and to better match rubric.
3. Wrote and advocated for legislation that would transfer funding into the research program to best use the funding for 2020-2021 funding cycle

### **Course Development for MBB Courses at ASU**

Arizona State University, *Tempe, AZ*

May 2019 -August 2019

- Wrote background, experiment rationale, and protocols that incorporated new concepts into the lab component of Genetic Engineering and Molecular Genetics Courses (MBB 343, MBB 347) at Arizona State University.
- Tested and verified experimental procedures to ensure they would yield results for students in the lab component of redesigned courses.

### **Undergraduate Student Researcher SOULR apprentice**

Arizona State University, *Tempe, AZ*

Jan 2016- May 2017

- Project: Undergraduate research involved the analysis of two viral expression vectors used to enhance expression in plants of HIV therapeutics. Tests were completed to determine which of the two expression vectors allowed for the better overall expression of HIV proteins gp41 and gp120 in plants.

### **Residence Hall Community Assistant (CA): Upperclassman and International Dorms**

Arizona State University, *Tempe, AZ*

March 2015- May 2017

- Co-Lead CA for Pakistan Centers for Advanced Studies in Energy (PCASE) exchange program students (only during Fall 2016- Spring 2017).
- Supported student development through programming and one on one mentorship.
- Responded to crisis and non-emergency situations on weekends and after hours when on duty.
- Created educational, academic, and social programs for a complex of 360+ students in Upperclassman Dorms (during March 2015-Aug 2016) and 80+ students in International Dorms.
- Performed administrative room and occupancy checks to ensure the wellness of the community.

### **Emergency Room Medical Scribe**

Saint Joseph's Phoenix, *Phoenix, AZ*

May 2016- July 2017

- Responsible for real-time documentation of patient information in the emergency room, ensuring accurate entry into electronic medical records.
- Facilitated communication among healthcare providers, streamline workflow, uphold confidentiality, and contributed to efficient and accurate patient care through thorough documentation.

### **Office Assistant**

Southwest Physician's Group, *Las Vegas, NV*

May 2016- July 2017

- Responsible for various administrative tasks to ensure smooth daily operations. This includes managing appointments, handling patient inquiries, maintaining medical records, and providing support to both healthcare professionals and patients.

## **MENTORSHIP**

### **Mentorship & Supervision**

Spring 2023-present

- Mentored graduate teaching assistants across all courses taught, guiding pedagogy, course coordination, assessment design, and practical student support in both in-person and online environments.

### **Capstone Advising & Graduate Mentorship**

August 2023-present

- **Undergraduate Capstone Reader** – Reviewed and provided feedback on **Michael Luca's** undergraduate capstone project. (Graduated)
- **MS Capstone Advisor** – Advised **Jessika Schlievert (MS in Biology)**, offering detailed edits and suggestions on her capstone paper. (Graduated)

- **MS Capstone Advisor** – Guided **Sarah Smeh** in completing her **Biology MS capstone project**. (Graduated)
- **Barrett Honors Thesis Advisor** – Advised **Kevin Dai** on his thesis, which explores the potential of **mRNA technology for vaccines against flaviviruses**. Currently, this is being edited in preparation for submission for publication. (Graduated)
- **Ph.D. Committee Member** – Serving on the **dissertation committee for Megan McCaughan**, providing support for her doctoral research.

## PUBLICATIONS

1. Di Palma, Michelle. Expression of Recombinant Zika Virus-Like Particles in *Nicotiana benthamiana*. M.S. Thesis. Arizona State University, *Proquest*. 2018.
2. Michelle P. DiPalma, Joseph G.L., Andy Diamos, Hugh Mason, and Tsafrir Mor. MBB 347 Lab Manual, Supplement to MBB 347 Lecture. Arizona State University. 2019.
3. Diamos, A. G., Hunter, J. G. L., Pardhe, M. D., Rosenthal, S. H., Sun, H., Foster, B. C., DiPalma, M. P., Qiang Chen, Q. and Mason, H. S. (2020). High-level production of monoclonal antibodies using an optimized plant expression system. *Frontiers in Bioengineering and Biotechnology*, 7, 472
4. Michelle P. DiPalma, Joseph G.L. Hunter, Aigerim Kamzina, Mary Pardhe, Brandon C. Favre, Andy Diamos, & Hugh Mason. MBB 343 Lab Manual, Supplement to MBB 343. Arizona State University. 2020
5. DiPalma, M. P. †, Kamzina, A.†, Diamos, A., Hunter, J. G. L., Mor, T. S., Mason, H (2021). Production of IgG Fusion Proteins Transiently Expressed in *Nicotiana benthamiana*. *Journal of Visualized Experiments: Jove*, (167). †- These authors contributed equally to this work
6. DiPalma, M. P., & Blattman, J. N. (2023). The impact of microbiome dysbiosis on T cell function within the tumor microenvironment (TME). *Frontiers in Cell and Developmental Biology*, 11, 1141215.
7. Diamos, A. G., Pardhe, M. D., Bergeman, M. H., Kamzina, A. S., DiPalma, M. P., Aman, S., ... & Mason, H. S. (2023). A self-binding immune complex vaccine elicits strong neutralizing responses against herpes simplex virus in mice. *Frontiers in Immunology*, 14, 1085911.
8. Di Palma, M. P. Determining the Role of Innate Immune Elements on RNA Viral Replication and Understanding Factors that Impact Adaptive T cell Anti-tumoral Activity Against Metastatic Osteosarcoma (mOS) (Doctoral dissertation, Arizona State University). *Proquest*. 2023.
9. Nieves, L., Roach, A., Hunter, J., Smeh, S., Islas, A., Islas, A., Blattman, J., and Di Palma, M.\*, Harnessing the microbiome to improve clinical outcomes for cancer, transplant, and immunocompromised patients in the intensive care unit (ICU). *Frontiers in Cellular and Infection Microbiology*, 15, p.1577108. \*Corresponding Author

## US PATENTS

10. Wallace, D., Abbas, F., Zlaket, F., DiPalma, M., Stenborg, R., Wallace, X., Wallace, S. (2025) U.S. Patent App. Number No. 208192-0035-US0. *Urine Collection and Analysis Assembly*.

**PUBLICATIONS IN PREPARATION**

11. Roach, A., Hunter, J., Di Palma, M. P.\*. The Intratumoral Microbiome: A Review of the Tumor Microenvironment's Fourth Axis and its Impact on Cancer Prognosis. (Planned Submission to PeerJ for December 31, 2025). \*Corresponding Author
12. Di Palma, M. P., Nieves, L., Islam, S., Blattman, J. Current Perspectives on the Impact of the Microbiome on Cancer Immunotherapy for Metastatic Osteosarcoma (mOS). *Frontiers in Immunology*. (Invited to Submit by January 31, 2026)
13. Di Palma, M. P., Nieves, L., Smeh, S., Appel, N., Islam, S., Lussier, D., Blattman, J. Microbiome Depletion Reduces Immune Checkpoint Blockade Efficacy in Murine Metastatic Osteosarcoma (mOS). *Journal of Immunology*. (Invited to Submit by December 31, 2025)

**PUBLISHED ABSTRACTS**

14. Di Palma, Michelle Pina, Nicole Appel, Danielle Lussier, and Joseph N. Blattman. Identifying Key Differences Between Responders vs. Non-Responders to Immune Checkpoint Blockade for Metastatic Osteosarcoma (mOS). (2022). *Journal of Immunology (Supplement)*: 122-20.
15. Nieves, L., Di Palma, M., Smeh, S., & Blattman, J. (2024). Abstract 2191 Unveiling the Target: Investigating the Protective Potential of EnsembleMHC-Predicted T-Cell Epitopes against Metastatic Osteosarcoma. *Journal of Biological Chemistry*, 300(3).
16. Di Palma, M., Nieves, L., Smeh, S., & Blattman, J. (2024). Understanding the Impact of Microbiome Modulations on T cell-Mediated Immunotherapy for Metastatic Osteosarcoma (mOS). *Journal of Immunology*, 212(1\_Supplement), 0044\_5887-0044\_5887.
17. Di Palma, M. P., Nieves, L., Smeh, S., Islam, S., & Blattman, J. N. (2025). Microbiome depletion reduces Immune Checkpoint Blockade (ICB) efficacy in a Murine Metastatic Osteosarcoma (mOS) model 4501. *The Journal of Immunology*, 214(Supplement\_1).

**ORAL RESEARCH PRESENTATIONS**

- 1.\*Di Palma M., \*Naji-Talakar S, \*Meador L, \*Diamos A, \*§ Mason H, and §Mor TS. Presentation title: Expression of recombination Zika virus-like particles in *Nicotiana benthamiana*. ANAS/ASM Branch meeting at University of Nevada Las Vegas 2018 Oral Presentation. Las Vegas, NV. April 2018. PowerPoint.
- 2.\*Di Palma M., \* § Mason H, and §Mor TS. Presentation title: Methods for Production of a Recombinant Immune Complex (RIC) Vaccine for Protective Immunity Against Schistosomiasis Produced in *Nicotiana benthamiana*. ANAS/ASM Branch meeting at Northern Arizona University. 2019. Oral Presentation. Flagstaff, AZ. April 2019. PowerPoint.

3. Di Palma, M., Nieves, L., Smeh, S., & Blattman, J. (2025). Microbiome Depletion Reduces Immune Checkpoint Blockade (ICB) Efficacy in a Murine Metastatic Osteosarcoma (mOS) Model. Immunology 2025: American Association of Immunologists Conference. 2025. Oral Presentation. Honolulu, HI. May 2025. PowerPoint.

## POSTER RESEARCH PRESENTATIONS

1. \*Di Palma M., \*Naji-Talakar S, \*Meador L, \*Diamos A, \*§ Mason H, and §Mor TS. Poster title: Expression of recombination Zika virus-like particles in *Nicotiana benthamiana*. RMGS, 2017 Poster Presentation. Golden, CO. 8 April 2017. Poster.

2. \*Di Palma M., \*Naji-Talakar S, \*Meador L, \*Diamos A, \*§ Mason H, and §Mor TS. Poster title: Expression of recombination Zika virus-like particles in *Nicotiana benthamiana*. Undergraduate Research Poster Symposium. Tempe, AZ. 17 March, 2017. Poster.

3. \*Di Palma M., \*§ Mason H, and §Mor TS. Presentation title: Production of a Recombinant Immune Complex (RIC) Vaccine for Protective Immunity Against Schistosomiasis Produced in *Nicotiana benthamiana*. Biodesign Fusion Conference at Sheraton Phoenix. 2019. Poster Presentation. Phoenix, AZ. March 2019. Poster.

4. \*Di Palma M., \*§ Mason H, and §Mor TS. Presentation title: Production of a Recombinant Immune Complex (RIC) Vaccine for Protective Immunity Against Schistosomiasis Produced in *Nicotiana benthamiana*. Immunometabolism: Fundamentals to Prospective New Therapies. Harvard Medical School. 2019. Poster Presentation. Boston, MA. June 2019. Poster.

5. \*Di Palma M., Lussier D, Appel N, and §Blattman J. Presentation title: Identifying Key Differences Between Immune Checkpoint Blockade Responders vs. Non-Responders in Metastatic Osteosarcoma. Immunology 2022: American Association of Immunologists Conference. 2022. Poster Presentation. Portland, OR. May 2022. Poster.

6. Di Palma, M., Nieves, L., Smeh, S., & Blattman, J. (2024). Understanding the Impact of Microbiome Modulations on T cell-Mediated Immunotherapy for Metastatic Osteosarcoma (mOS). Immunology 2024: American Association of Immunologists Conference. 2024. Poster Presentation. Chicago, IL. May 2024. Poster.

## RESEARCH GRANTS RECEIVED

1. Joseph Blattman, Co-Author Michelle Di Palma: Sarcoma Foundation of America (SFA) Research Grant-\$50,000 for the project "Analysis and Implications of the Difference in Response Rates to a Treatment for Metastatic Osteosarcoma" funded for 06/2021-05/2022

2. Joseph Blattman, Co-Author Michelle Di Palma: Jeff Gordon Children's Foundation (JGCF)-\$200,000 for the project "Identifying Key Differences Between Immune Checkpoint Blockade Responders vs. Non-Responders in Metastatic Osteosarcoma" funded for 01/2022-12/2026

3. Michelle Di Palma: Jeff Gordon Children's Foundation (JGCF)-\$85,000 for the project "Identifying Key Differences Between Immune Checkpoint Blockade Responders vs. Non-Responders in Metastatic Osteosarcoma" funded for 01/2024-06/2024

## GRADUATE RESEARCH GRANTS RECEIVED

- SOLS RTI Research Grant Recipient (\$2,000)

Spring 2023

- GPSA Publication Grant (\$1200) Fall 2022
- Jumpstart Graduate Research Grant (\$750 each) Summer 2019, Fall 2019, Fall 2020, Fall 2021
- Graduate Independent Research Grant Recipient (\$750) Spring 2020
- SOLS RTI Research Grant Recipient (\$2,000) Fall 2018
- GPSA GRSP for Terminal Research Grant Recipient for M.S. Students (\$2,000) Spring 2018

### TRAVEL GRANTS RECEIVED

- GPSA Research Travel Grant Recipient (\$950) Spring 2022
- GPSA Research Travel Grant Recipient (\$950) Spring 2019
- SOLS Research Travel Grant Recipient (\$400) Spring 2019

### HONORS/AWARDS

- Outstanding Research Award Fall 2021
- Office of Educational Outreach Publication Funding Fall 2020
- Outstanding Mentor Award Fall 2020
- Teaching Excellence Award Fall 2019
- ASU Serving University Needs (SUN) Award Summer 2019
- Graduate College Fellowship Recipient Fall 2018
- ASU Graduate Retention Fellowship Recipient Fall 2017-Spring 2018
- ASU Dean's List (undergraduate) Fall 2013- Spring 2017
- TGEN Research Scholars Internship Finalist Summer 2015
- John C. Wheatley Undergraduate Research Scholarship Fall 2015
- College of Liberal Arts and Sciences (CLAS) Student Success Award Fall 2014
- Arizona State General Scholarship Fall 2014
- New American University (Provost) Scholarship (for 8 sem) Fall 2013, Fall 2014-Fall, 2018

### SCIENTIFIC SERVICE AND VOLUNTEERING

- Ask A biologist- Content Writer and Contributor April 2020-present
  - Article Contributions
    - "Vaccine Science: COVID-19 vaccines"  
<https://askabiologist.asu.edu/covid-vaccine>
    - "Where Did the SARS Coronavirus Come From?"  
<https://askabiologist.asu.edu/plosable/SARS-virus>
- Panelist at Penny Arcade Expo (PAX) West, Seattle, WA 2019-2025
- Panelist at Phoenix Comic-Con/FanFusion 2018-2025
- Panelist at Recruitment for STEAM organizations Spring 2021
  - "Mozart, Curie and Da Vinci: At the intersection of Science and Art, connected through creativity."
- Co-Founder and Vice President of Sun Devil STEAMMcomm for Student-Run Community and Scientific Outreach Fall 2019-Spring 2021
- Poster Judge at ASM/ANAS 2019 Branch Meeting April 2019

### COMMUNITY SERVICE AND VOLUNTEERING

- ASU Centennial Professorship Award Review Board March 2020- 2023
- ASU GPSA Grant Reviewer March 2020- 2023
- Phoenix Children's Hospital Patient Care Volunteer March 2019-March 2020
  - Provides essential support by engaging with young patients and their families. Responsibilities typically include offering companionship, assisting with activities, and providing emotional support to children undergoing medical treatment.

- o Additionally, these volunteers may help with non-clinical tasks, contributing to a positive and comforting environment within the hospital for pediatric patients and their families.
- Electric Daisy Carnival Volunteer for Community Ambulance (Medical Tent) June 2017
- ASU Student United Way Volunteer August 2015-2017
- Service through ASU Change Maker Fall 2013-Spring 2017

## LEADERSHIP

- Member of ASU School of Life Sciences (SOLS) Graduate Executive Board Fall 2019-Fall 2020
- **SOLS Representative**; Graduate and Professional Student Association (GPSA) June 2019-June 2020
  - Fall 2019 Platform:
    1. *To improve awareness of and access independent research funding and monetary awards available to graduate students at ASU, especially within SOLS.*
    2. *To serve as an advocate for and voice for SOLS graduate students to effectively state their opinions and concerns to the GPSA and graduate administration.*
  - Spring 2020 Platform (in addition to Fall 2019 Platform listed above)
    1. *To improve awareness of and access to mental health resources available to graduate students at ASU, especially in SOLS.*
    2. *Work to maintain a supportive community within SOLS during the transition from the university to online.*
- Arizona State University: Residence Hall Association Fall 2013– Spring 2017
- PV West (Dormitory) Director of Marketing Fall 2013

## JOURNALS REVIEWED:

- Journal of Visual Experiments (JoVE)
- Public Library of Science (PLOS) One