PAWEL MARCINKIEWICZ (He/Him/His)

Residence Address #1: 801 Locust PL NE, Apt# 1146 Albuquerque, NM 87102

Resident Address #2: PO BOX 4749, Charlottesville, VA 22905

Phone Number: (505)-339-5976

Email: pmarcinkiewicz98@outlook.com

Personal Website: www.pawelnet.com

LIFE MISSION

To contribute to our society's success through the use of an advanced, comprehensive, and extensive educational foundation encompassing medicine and biomedical research in the context of rural, disadvantaged and underserved communities. I plan to champion local communities in rural America in conjunction with participating at the forefront of Medicine and Science. My life's mission is to advance Humanity's understanding of health and disease with the goal of improving clinical outcomes, developing novel therapies, imaging methods, and treatments.

TERTIARY EDUCATION

2019 2021   **University of New Mexico, Albuquerque, NM**
- **Bachelor of Science in Biology, Minor in Chemistry & Theatre Arts**
- **GPA: 3.97/4.0** with Summa Cum Laude institutional honor
- Inducted into Phi Beta Kappa Honor Society (Alpha Chapter of New Mexico) for exceptional academic achievement in the arts and sciences.
- Inducted into National Society of Leadership and Success - Outstanding dedication and excellence in undergraduate studies.
- Awards: Amigo Scholarship Recipient[*], Dean's List Spring 2020, Dean's List Fall 2020, Dean's List Spring 2021.

2017 2019   **Diné College, Tsaile, AZ**   -
- **Associated of Science in Biology**
- **GPA: 4.0/4.0** with Summa Cum Laude institutional honor
- President's Honor Award for outstanding achievement in academic excellence and exceptional dedication to learning, 2017/2018 and 2018/2019.

2018 2019   **Navajo Technical University, Crownpoint, NM**
- Attended in conjunction with Diné College
- GPA: 4.0/4.0

2012 2013   **University of Virginia, Charlottesville, VA**
- High School Dual Enrollment
- GPA: 4.0/4.0
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2009 2010   **Piedmont Virginia Community College, Charlottesville, VA**
- High School Dual Enrollment
- GPA: 4.0/4.0

*Scholarship was valued at $22,919 per year, including a $200 yearly stipend. Valid for the whole duration of my studies at the University of New Mexico.

CURRENT RESEARCH

Position Details: Research Assistant, University of Virginia, Laboratory of Dr. Roger Abounader

Position Length: 10/2022 – PRESENT

Project Title: Elucidating the role of microRNA 380-3p and microRNA 1185-5p in Glioblastoma development and formation.

Project summary: My particular interest in studying Glioblastoma (GBM), a primary malignant brain tumor currently considered to be severely under-studied within the medical community, compelled me to further study the effects of microRNAs on the modulation of the cell cycle and in determining the effects that these microRNAs pose in GBM tumorigenesis. MicroRNA represents a subtype of RNA termed "non-coding RNA", which makes up ~98% of the total RNA within the body. I have set out to investigate the role and function of microRNA 380-3p and microRNA 1185-5p in Glioblastoma. Thus far, we have performed a PhotoactivatableRibonucleoside-Enhanced Crosslinking and Immunoprecipitation (PAR-CLiP) assay to identify potential microRNA targets. We have applied a bioinformatic scoring algorithm to determine whether microRNA 3803p and microRNA 1185-5p have a tumor-suppressive or oncogenic role in GBM by comparing and correlating endogenous expression levels, frequency of deregulation, magnitude of deregulation, and correlation with survival. Preliminary results from our scoring algorithm have led me to hypothesize that microRNA 380-3p and microRNA 1185-5p may have a tumor-suppressive role in GBM tumorigenesis. Presently, I am preparing to perform a variety of cancer malignancy parameter assays in order to elucidate the significance of microRNA 380-3p and microRNA 1185-5p on cell accumulation and invasion using an in-vitro tissue-culture model utilizing the GBM cancer cell lines: A172, U87, and U251. Under Dr. Abounader's direction, I have also been involved in the application of Focus-Ultrasound in an in-vivo mouse model that allows us to penetrate the blood-brain barrier and implant microbubbles and nanoparticles containing microRNAs of interest. Through my collaboration with Dr. Shekhar Saha and Dr. Ying Zhang, I plan on applying focus ultrasound in an in-vivo mouse model in order to validate my hypothesis.

Research scope of experience
- Conducted extensive research on non-coding RNAs, with a focus on elucidating the roles and functions of microRNAs and long noncoding RNAs in human health and disease.
- Designed and executed experiments to investigate the effects of specific microRNAs on the formation and development of Glioblastoma, along with the effects of non-coding RNA on immune response modulation.
- Collaborated with a multidisciplinary team to analyze and interpret complex data sets, making substantial contributions to a comprehensive analysis of 481 Transcribed Ultra-Conserved Regions (TUCRs), identifying TUCR's pertinent to brain cancer biology and identifying uc. 110 as a novel oncogene.
- Demonstrated excellent organizational and time-management skills by simultaneously collaborating on multiple aspects of research projects.

Specific Skills and Expertise – Scientific
- Medical and Scientific background in Cell Biology, Cancer Biology, Glioblastoma, and Non-Coding RNAs
- cDNA synthesis
- Protein immunoblotting
- Agarose gel electrophoresis
- Quantitative polymerase chain reaction (qPCR)
- Bacterial transformation and cloning

- Stable cell line generation using lentiviral transduction
- Standard cell and tissue culture techniques and methods
- Cancer cell malignancy assays: Proliferation, Death, Invasion, Migration, and Accumulation

Specific Skills and Expertise – Computational
- Medical and Scientific background in Mathematical Modeling of Biological Systems, Data Science, Statistics, Calculus, and Bioinformatics
- Microsoft Office (Excel, PowerPoint, Outlook, Word)
- Adobe Photoshop, CorelDRAW
- ImageJ analysis software
- HTML, CSS, SQL, JavaScript, and Python programming languages
- Zotero
- LaTeX, Texmaker, WinEdt
- SigmaPlot

PUBLICATIONS

Publication: Hanif, F., Zhang, Y., Dube, C., Gibert, M. K., Saha, S., Hudson, K., Marcinkiewicz, P., Kefas, B., Guessous, F., & Abounader, R. (2023). miR-3174 is a new tumor suppressor MicroRNA that inhibits several tumor-promoting genes in glioblastoma. International Journal of Molecular Sciences, 24(11). https://doi.org/10.3390/ijms24119326

Publication: Gibert, M. K., Zhang, Y., Saha, S., Marcinkiewicz, P., Dube, C., Hudson, K., Sun, Y., Bednarek, S., Chagari, B., Sarkar, A., Roig-Laboy, C., Neace, N., Saoud, K., Setiady, I., Hanif, F., Kumar, P., Kefas, B., & Abounader, R. . A First Comprehensive Analysis of Transcribed Ultra Conserved Regions Uncovers Important Regulatory Functions of Novel Non-Coding Transcripts in Gliomas. (pending)

PROFESSIONAL EXPERIENCE

04/2019 - 06/2021   ScribeAmerica, Medical Scribe   Albuquerque, NM 87102
Scope of experience:
- Patient care rendered alongside the other healthcare providers through recording proper patient related documentation during ER visits.
- Recording: medical procedures, history of present illness, review of systems, physical exam, medical decision-making processes.
- Responsibility for the proper documentation of billing, ordering orthopedic medical equipment, and ambulance transfer
- Attending to patients' needs in coordination with other health care providers including nurses, EMT's, and physicians.
- Coordinating flow of laboratory data and radiology results in a high-paced environment.
- Basic analysis and incorporation of microscopic, cell culture, biochemical assay, and biotechnological data in the patient's chart.
- Fluent and proficient usage of the Electronic Medical Record (EMR) system database.
- Interpersonal interaction with patient when handing discharge paperwork with prescriptions.
- Basic data and statistical analytics pertinent to epidemiological and biochemical data.
- Aiding patients through clinical education and information with instructions appropriate to medical conditions.

07/2020 10/2020   Kids First ABQ, Dental Assistant   Albuquerque, NM 87108
Scope of experience:

- Providing the underserved Latino and Hispanic youth (4-18 years old) with general cleaning and hygiene-based maintenance along with assisting the dentist with tooth extractions and orthodontic procedures.
- Appropriate sanitization and cleanliness procedures during the COVID-19 pandemic including preparation of antiseptic reagents.
- Application of dental-specific terminology in patient's charts.
- Proper dental hygiene, prophylactic cleaning, and operation of a variety of dental instruments.
- Assisting the dentist with a variety of operations, including tooth extractions, orthodontic procedures, and proper handling of instruments.
- Maintaining community relations to promote dental health and educating patients on proper dental care.

Research Interests:
- Medical oncology with an emphasis on: neuro-oncology and molecular biology in neuroscience.
- Pathological and molecular features of Glioblastoma Multiforme and other gliomas as a molecular research model of brain cancer.
- Epigenetic regulation of cellular genomes in brain cancer cells.
- The role of non-coding RNAs (ncRNAs), microRNAs (miRNAs), and Transcribed Ultra-Conserved Regions (TUCRs) in brain tumor oncogenesis.
- Application of bioinformatics, genomics, proteomics, intracranial tumor xenografts in pro-apoptotic and anti-proliferative mechanisms of microRNA.

PROFESSIONAL MEMBERSHIPS AND HONOR SOCIETIES
- American Physiological Society (APS)
- Phi Beta Kappa, Alpha Chapter of New Mexico
- National Society for Leadership and Success

LANGUAGES SPOKEN
- English (native fluency)
- Polish (native fluency)
- Navajo (basic fluency)

REFERENCES
- Excellent references available upon request.