Thomas G. Wilson

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Personal Statement

An analytical and logical individual who has experience in a research setting. My data analysis abilities are mostly self-trained in order to both evolve my skills and to facilitate the needs of the department. I am extremely versatile and am adept at absorbing large amounts of knowledge, allowing me to quickly learn new skills. This versatility also allows me to not be limited in subject matter, enabling me to be valuable in a number of different settings and studies.

Work Experience

RESEARCH ASSOCIATE | HENRY FORD HEALTH SYSTEM | JUNE 2020 – PRESENT

- Work in the Bone and Joint Center.
- First member of a new start-up lab.
- Primary project collaborating with an Orthopedic Surgeon; collecting patient knee samples.
    - Identify optimal patients to fit criteria of study. Recruiting said patients to the study
    - Dissection of primary tissue samples provided by patients.
    - RNA isolation from several tissue and fluid types.
        - Optimization of RNA isolation from challenging tissues.
    - QPCR, RT-PCR on micro RNAs identified from previous experiments.
    - RNA-sequencing.
- Managing lab inventory and equipment.

RADIATION ONCOLOGY RESEARCH ASSISTANT | BEAUMONT HEALTH | MAY 2014 –MARCH 2020

- Served as primary data analyst, evolving own skills in statistical analysis.
- Contributed in a variety of projects and departments including cancer research, Alzheimer's research, pathology, medical physics and clinical databases.
    - Cancer research work includes:
        - The effect of targeted therapy agents on irradiated animal tumors.
        - The application of pulsed radiation therapy on animal tumors in comparison to standard radiation therapy.
        - Analysis of tissue microarrays created from patients, correlation of assorted biomarkers to clinical outcomes.
    - Heavily involved in a novel project investigating low doses of radiation therapy on Alzheimer's disease:
        - Transgenic mouse model analyzed with immunohistochemistry and cognitive testing.
        - Animal work has led to a clinical trial.

- Extensive experience with analysis software including Excel, Origin, JMP, Partek Genomics Suite, R.
    - Statistics used include: survival analysis (Kaplan-Meier, Cox estimator), ANOVA and means comparisons, growth rate analyses, and correlation.
- Extensive experience with immunohistochemical staining and analysis.
- High proficiency with digital pathology analysis software (Definiens, ImagePro, ImageJ).
- Day to day supervision and assistance of residents and medical students undertaking their research projects.
- Supervision of volunteers and summer students.
- Scientific writing and production of figures. Authorship on several published articles and abstracts.
- Wet lab *in vitro* work including cell culture, x-ray irradiation, clonogenic survival assays, Western blotting, MTT assaying.

RADIATION BIOLOGY CONTINGENT/SUMMER STUDENT | BEAUMONT HEALTH | MAY 2013 – AUGUST 2013

- Primary project worked with a hypothesis that curcumin and novel curcumin derivatives will enhance the effects of temozolomide on glioblastoma through the inhibition of the FANCD2 pathway.
- Established appropriate dosing and created appropriate *in vitro* experiments.
- *In vitro* experiments were followed by *in vivo* experimentation.
- Continued with data analysis of other *in vivo* studies

RADIATION BIOLOGY CONTINGENT/SUMMER STUDENT | BEAUMONT HEALTH | MAY 2012 – AUGUST 2012

- Primary project compared the effects of standard radiation therapy, pulsed radiation therapy to a "simulated low dose" radiation therapy.
- Began analyzing data from *in vivo* studies including tumor growth, survival analysis and immunohistochemistry image analysis.
- Assisted in the writing of manuscripts and the creation of figures for the manuscripts.
- Worked with and assisted radiation oncology residents during their research year.

RADIATION BIOLOGY CONTINGENT/SUMMER STUDENT | BEAUMONT HEALTH | MAY 2011 – AUGUST 2011

- Continuation of pulsed low dose experiments with the addition of chemotherapy agents (temozolomide).
    - MTT assaying, clonogenic survival, Western blotting, gene expression analysis.
- Introduction to flow cytometry.

RADIATION BIOLOGY CONTINGENT/SUMMER STUDENT | BEAUMONT HEALTH | MAY 2010 – AUGUST 2010

- Introduction to laboratory work, primary project was working with pulsed low dose irradiation on glioblastoma.
- Experiments included: MTT assaying, clonogenic survivals, gene expression analysis (Affymetrix Genechip microarray).
- Tasked with evaluating Pmod PET/CT imaging software for our *in vivo* studies.

LABORER | RYAN CONSTRUCTION INC. | MAY 2008 – AUGUST 2008

- Summer job as a laborer for local construction firm.

Education

BACHELOR OF SCIENCE IN ENVIRONMENTAL GEOSCIENCES| AUGUST 2009 – MAY 2014 | MICHIGAN STATE UNIVERSITY

- Graduation GPA : 3.3
- Dean's List for 6 straight semesters

WEST BLOOMFIELD HIGH SCHOOL|AUGUST 2005 – MAY 2009

- Graduated Magna Cum Laude, GPA : 3.9
- Member of National Honors Society

Volunteer Work

- Volunteer work at local public library (West Bloomfield Public Library) between 2006 and 2008, approximately 100 hours in total. Workload included circulation, removal of items from archives, shelf stocking and customer support.
- 50 hours math, science and English tutoring during high school (2007-2009) for middle school and high school students.

Skills and Proficiencies

- Highly proficient in Microsoft Office (Excel, Word, Powerpoint, Access) including work with pivot tables, vlookup.
- Ability to work with large datasets and databases.
- Versatility in a variety of subjects, not limited to science.
- Analytical mindset.
- Very comfortable with computing and other technology.
- Developing skills with Python, SQL and Adobe software.
- Currently completing two Data Analysis Certifications (IBM, Harvard)

Interests and Hobbies

- Sports: Soccer, basketball, football, etc...
- Trivia
- Video Games
- Fitness: running, cycling, general exercise.
- Day trading
- Movies

REFERENCES UPON REQUEST

Published Papers

1. **Wilson TG**, Hanna A, Recknagel J, Pruetz BL, Baschnagel AM, Wilson GD. Prognostic significance of MTOR expression in HPV positive and negative head and neck cancers treated by chemoradiation. Head Neck. 2020;42(2):153-62.

2. Wilson GD, **Wilson TG**, Hanna A, Dabjan M, Buelow K, Torma J, Marples B, Galoforo S. Dacomitinib and gedatolisib in combination with fractionated radiation in head and neck cancer. Clin Transl Radiat Oncol. 2020;26:15-23

3. Michael D, Wilson GD, Hanna A, **Wilson TG,** Martinez A, Chinnaiyan P, Maddens M, Fontanesi J. Radiation therapy for the treatment of Alzheimer's disease. Neurology and Neurosurgery. 2019;2(1)

4. Wilson GD, Blas K, Tonlaar N, **Wilson TG**, Patel A, Hanna A, Dabjan M, Buelow K, Marples B. Comparison of Inhibitors of PIK3 and MTOR in Combination with Radiation in Head and Neck Cancer. JSM Biochem Mol Biol 2018;5(1):1034.

5. Blas K, **Wilson TG**, Tonlaar N, Galoforo S, Hana A, Marples B, Wilson GD. Dual blockade of PI3K and MEK in combination with radiation in head and neck cancer. Clin Transl Radiat Oncol. 2018;11:1-10.

6. Tonlaar N, Galoforo S, Thibodeau BJ, Ahmed S, **Wilson TG**, Yumpo Cardenas P, Marples B, Wilson GD. Antitumor activity of the dual PI3K/MTOR inhibitor, PF-04691502, in combination with radiation in head and neck cancer. Radiother Oncol. 2017;124(3):504-12.

7. Johnson MD, Stone B, Thibodeau BJ, Baschnagel AM, Galoforo S, Fortier LE, Ketelsen B, Ahmed S, Kelley Z, Hana A, **Wilson TG**, Robertson JM, Jury RP, Wilson GD. The significance of Trk receptors in pancreatic cancer. Tumour Biol. 2017;39(2): 1-13.

8. Meyer K, Krueger SA, Kane JL, **Wilson TG**, Hanna A, Dabjan M, Hege KM, Wilson GD, Grills I, Marples B. Pulsed Radiation Therapy With Concurrent Cisplatin Results in Superior Tumor Growth Delay in a Head and Neck Squamous Cell Carcinoma Murine Model. Int J Radiat Oncol Biol Phys. 2016;96(1):161-9.

9. Thapa R, Galoforo S, Kandel S, El-Dakdouki M, **Wilson TG**, Huang X, Roth B, Wilson GD. Radiosensitizing and Hyperthermic Properties of Hyaluronan Conjugated, Dextran-Coated Ferric Oxide Nanoparticles: Implications for Cancer Stem Cell Therapy. Journal of Nanomaterials. 2015;2015:1-11.

Published Abstracts

1. Arden JD, Quinn TJ, **Wilson TG**, Hanna A, Baker K, Baschnagel AM, Wilson GD. Automated Assessment of Biomarker Expression in Head and Neck Squamous Cell Carcinoma (HNSCC) Patients Shows Association between High CD44, c-MET, EGFR, and GLUT1 Expression with Decreased Disease-Free Survival and Overall Survival. International Journal of Radiation Oncology • Biology • Physics. 2019;105(1):E669-E70.

2. Wilson GD, Galoforo S, Blas KG, Jr., **Wilson TG**, Hana A, Dabjan M, Marples B. Targeting Single and Multiple Cell Signaling Pathways in Combination With Radiation in Head and Neck Cancer. International Journal of Radiation Oncology • Biology • Physics. 2018;100(5):1375.

3. Quinn TJ, Galoforo S, **Wilson TG**, Ahmed S, Wilson GD. Dual EGFR and PI3k/mTOR Targeting of Head and Neck Cancer in Combination With Radiation Therapy. International Journal of Radiation Oncology • Biology • Physics. 2017;99(2):E614-E5.

4. Blas KG, Jr., Galoforo S, **Wilson TG**, Krueger SA, Grills IS, Marples B, Wilson GD. Targeted Inhibition of PI3K and MEK in Combination With Radiation Therapy in UT15: A Murine Model of Head and Neck Squamous Cell Carcinoma. International Journal of Radiation Oncology • Biology • Physics. 2017;99(2):E578-E9.

5. Marples B, Krueger SA, **Wilson TG**, Dabjan MB, Lee KC, Hymas RV, Wilson GD, Collis SJ. Improving the Efficacy of Pulsed Radiation Therapy Using DNA Repair Inhibitors: A Preclinical Study. International Journal of Radiation Oncology • Biology • Physics. 2016;96(2):E566-E7.

6. Blas KG, Galoforo S, Krueger SA, **Wilson TG**, Grills IS, Marples B, Wilson GD. Inhibition of PI3K and MEK in Combination With Radiation Therapy in Murine Model of Head and Neck Squamous Cell Carcinoma (HNSCC). International Journal of Radiation Oncology • Biology • Physics. 2016;96(2):E586-E7.

7. Marples B, **Wilson TG**, Dabjan MB, Kane J, Wilson GD, Krueger SA. Evaluating the Efficacy of Pulsed Radiation Therapy in a Subcutaneous Murine Model of Glioblastoma. International Journal of Radiation Oncology • Biology • Physics. 2015;93(3):E526.