Joseph A. Zundell, Ph.D.

SUMMARY OF QUALIFICATIONS:

- Highly motivated Ph.D. scientist with over 10 years of experience in cell and molecular biology techniques with a research focus in discovering translational therapies in oncology.
- Expertise in phenotypic and biochemical *in vitro* assays, cellular signaling and pathway analyses, small/ large compound molecular screening in determining cancer therapeutic approaches, and *in vivo* models of cancer biology.
- Excellent interpersonal, mentoring, organization, and public communication skills.

TECHNICAL SKILLSETS:

- Cell Culture: 2D and 3D cell culture of primary patient tissue, spheroid, and organoid cultures.
- Cellular Phenotypic Assays: Incucyte Killing assay, MSD assays, flow cytometry, quantiBRITE receptor density, Annexin V, CellTiter-Glo/Caspase-Glo assays, proliferation colony formation assay, MTT/XTT viability assay, wound healing assay, Boyden chamber invasion/migration assay, tissue immunohistochemistry, immunofluorescence, confocal microscopy, luciferase reporter assays.
- Molecular Screening Approaches: BioTek MicroFlo bulk reagent dispenser and Perkin Elmer EnVision microplate reader to screen therapeutic compounds (i.e.- synergy, affinity, etc.).
- *In Vivo* Experimental Models: Experienced in mouse husbandry and mouse colony management, genotyping, embryonic stem cell-based mouse model design, intraperitoneal (IP) injection, intrabursal (IB) injection, and mouse dissections/ tissue harvesting.
- Quantitative/ Software Skills: Analysis and interpretation of RNA-seq, ChIP-seq, ATAC-seq, The Cancer Genome Atlas (TCGA) and Gene Expression Omnibus datasets. Proficient with Graph Pad Prism, Spotfire, Watson LIMS. Adobe Illustrator, and BioRender.
- Molecular Biology: Protein, DNA, and RNA extraction, UV/Vis spectroscopy, real-time quantitative reverse-transcription PCR, bacterial protein expression and purification, FPLC, cellular fractionation, protein crosslinking/ immunoprecipitation, RNA-sequencing, DNA chromatin immunoprecipitation-sequencing, siRNA/shRNAtechnologies, CRISPR/Cas9, adenoviral and lentiviral expression systems, transfections/transductions, cloning and plasmid mutagenesis, immunoblotting.

EDUCATION:

2016-2021 **Ph.D. Cancer Biology**
University of the Sciences/ The Wistar Institute
Philadelphia, PA

2010-2013 **B.S. Biology**
Saint Leo University
Saint Leo, FL

RESEARCH EXPERIENCE:

2023- Present *Research Scientist Oncology, Aktis Oncology, Durham, NC*

- Perform *in vitro, in vivo,* and *ex vivo* experiments to characterize drug binding, specificity, biodistribution, radiosensitivity, and target tissue expression enabling cancer therapeutic go/ no-go decisions.
- Organize, evaluate, and present data across multifunctional teams enabling coherency through all facets of drug development pipelines.

2023 *Scientist I, BioAgilytix, Durham, NC*

- Performed *in vitro,* plate-based experiments to develop and qualify pharmacokinetic (ADA/PK) assays for clinically relevant drugs.
- Performed experiments in accordance with FDA regulations in a GLP setting.
- Evaluated data, prepared reports, and presented data internally to advance client driven programs.

2022-2023 *Research Scientist Antibody Pharmacology (Contract), Incyte, Wilmington,DE*

- Performed *in vitro* experiments to characterize antibody and immune cell functions for *in vitro* studies for cancer immunotherapy drug discovery programs.
- Evaluated data, prepared reports, and presented internally to advance project programs.

2022 *Post-Doctoral Fellow, The University of Pennsylvania, Philadelphia, PA*

- Examined the mechanistic links between FBP1 loss and hepatocellular carcinoma (HCC)
- Developed a transgenic mouse model possessing catalytically inactive FBP1 to establish and characterize non-enzymatic functions of FBP1.

2016-2021 *Graduate Student (Ph.D.), The University of the Sciences, Philadelphia,PA*

- Studied the protective roles of the endoplasmic reticulum (ER) stress responses in supporting *ARID1A*-mutant ovarian clear cell carcinoma (OCCC) tumor cell survival.
- Developed several novel therapeutic strategies in targeting *ARID1A*-mutant ovarian clear cell carcinoma (OCCC), such as HDAC6 inhibition combination with anti-PD-L1 or IRE1 RNase inhibition.
- Discovered the epigenetic regulatory strategy by which the SWI/SNF complex suppresses *XBP1* gene expression to support OCCC cell homeostasis.
- Instructed 6 cell biology lab classes as a primary Graduate Student Instructor (GSI) at USciences.

2014-2016 *Laboratory Technician, The Wistar Institute, Philadelphia, PA*

- Discovered a novel link between the IRE1/XBP1 ER stress response and STING signaling in chronic lymphocytic leukemia (CLL) models.
- Performed *in vitro* and *in vivo* assays to examine the roles of the ER stress response in supporting leukemia cell survival.

ACADEMIC AND PROFESSIONAL HONORS:

2019-2021	NIH/NCI F31 Ruth L. Kirschstein Predoctoral Individual National Research Service Award, The Wistar Institute, Philadelphia PA
2020	Monica H.M. Shander Fellowship Award, The Wistar Institute, Philadelphia PA
2020	The Rugart Family Award for the best presentation by a Predoctoral Fellow, The Wistar Institute, Philadelphia PA
2016-2018	Graduate Student Instructor (GSI), University of the Sciences, Philadelphia PA

PRESENTATIONS:

1. **University of Pennsylvania Ovarian Cancer Research Center Rising Stars Seminar Series:** May 2021, Philadelphia, Pennsylvania- Virtual PowerPoint presentation- Zundell, J./ Targeting the IRE1α/ XBP1 Endoplasmic Reticulum Stress Response in *ARID1A* mutant ovarian clear cell carcinoma.
2. **Biomedical Technician Training Program Outreach**: 2018-2021, Philadelphia, Pennsylvania- PowerPoint presentation- Zundell, J./ Career path and educational training
3. **UPenn Open Labs Outreach**: 2019, Philadelphia, Pennsylvania- PowerPoint presentation- Zundell, J./ Deep Sea Evolutionary Adaptations.

4. **American Society for Cell Biology:** 2015 San Diego, California**-** Poster presentation- C.A. Tang, J. Zundell, S. Ranatunga, C. Lin, Y. Nefedova, J. Del Valle, C.A. Hu/ Activation of STING induces apoptosis in B cell cancer.

PUBLICATIONS:

1. Zhou, W., Liu, H., Yuan, Z., **Zundell, J.**, Towers, M., Lin, J., Lombardi, S., Nie, H., Murphy, B., Yang, T. and Wang, C., 2023. Targeting the mevalonate pathway suppresses ARID1A-inactivated cancers by promoting pyroptosis. ***Cancer Cell*.**
2. **Zundell, J.A.**, Fukumoto, T., Lin, J., Fatkhudinov, N., Nacarelli, T., Kossenkov, A.V., Liu, Q., Cassel, J., Hu, C.C.A., Wu, S. and Zhang, R., 2021. Targeting the IRE1α/XBP1 Endoplasmic Reticulum Stress Response Pathway in ARID1A-Mutant Ovarian Cancers. ***Cancer Research***, *81*(20), pp.5325-5335.
3. Lin, J., Liu, H., Fukumoto, T., **Zundell, J.**, Yan, Q., Tang, C.H.A., Wu, S., Zhou, W., Guo, D., Karakashev, S. and Hu, C.C.A., 2021. Targeting the IRE1α/XBP1s pathway suppresses CARM1-expressing ovarian cancer. ***Nature communications***, *12*(1), pp.1-14.
4. Wu, S., Fukumoto, T., Lin, J., Nacarelli, T., Wang, Y., Ong, D., Liu, H., Fatkhutdinov, N., **Zundell, J.A.**, Karakashev, S. and Zhou, W., 2021. Targeting glutamine dependence through GLS1 inhibition suppresses ARID1A-inactivated clear cell ovarian carcinoma. ***Nature cancer***, *2*(2), pp.189-200.
5. Nacarelli, T., Fukumoto, T., **Zundell, J.A.**, Fatkhutdinov, N., Jean, S., Cadungog, M.G., Borowsky, M.E. and Zhang, R., 2020. NAMPT inhibition suppresses cancer stem-like cells associated with therapy-induced senescence in ovarian cancer. ***Cancer Research***, *80*(4), pp.890-900.
6. Fukumoto, T., Fatkhutdinov, N., **Zundell, J.A.**, Tcyganov, E.N., Nacarelli, T., Karakashev, S., Wu, S., Liu, Q., Gabrilovich, D.I. and Zhang, R., 2019. HDAC6 inhibition synergizes with anti-PD-L1 therapy in ARID1A-inactivated ovarian cancer. ***Cancer Research***, *79*(21), pp.5482-5489.
7. Zhao, B., Lin, J., Rong, L., Wu, S., Deng, Z., Fatkhutdinov, N., **Zundell, J.**, Fukumoto, T., Liu, Q., Kossenkov, A. and Jean, S., 2019. ARID1A promotes genomic stability through protecting telomere cohesion. ***Nature communications***, *10*(1), pp.1-13.
8. Nacarelli, T., Lau, L., Fukumoto, T., **Zundell, J.**, Fatkhutdinov, N., Wu, S., Aird, K.M., Iwasaki, O., Kossenkov, A.V., Schultz, D. and Noma, K.I., 2019. NAD+ metabolism governs the proinflammatory senescence-associated secretome. ***Nature cell biology***, *21*(3), pp.397-407.
9. Tang, C.H.A., **Zundell, J.A.**, Ranatunga, S., Lin, C., Nefedova, Y., Del Valle, J.R. and Hu, C.C.A., 2016. Agonist-mediated activation of STING induces apoptosis in malignant B cells. ***Cancer Research***, *76*(8), pp.2137-2152.

Google Scholar link: https://scholar.google.com/citations?user=AglUdHAAAAAJ&hl=en