

AMY FLOR

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EDUCATION

B.S., University of Illinois (Urbana-Champaign, IL): Environmental Biology, 2001.

POSITIONS

Senior Research Scientist, University of Chicago, Department of Molecular Genetics and Cell Biology (Kron Lab), 2014 – present.

Research Project Manager, University of Chicago, Department of Molecular Genetics and Cell Biology (Kron Lab), 2016 – present.

Research Technician I/II, University of Chicago, Department of Molecular Genetics and Cell Biology (Kron Lab), 2006 – 2014.

Research Technician I, Northwestern University, Falk Center for Molecular Engineering (Moskal Lab). 2004 – 2006.

RESEARCH EXPERIENCE

Project: Lipid Signaling in Cellular Senescence and Tissue Aging. University of Chicago (Chicago, IL). National Institute of Health Department of Aging RO1 grant #1R01AG69865-01, 2020 – 2025. **Role:** Senior research scientist. **Contributions:** Contributed significant amount of data to grant application. Currently performing experimental research in a lead scientist role under leadership of Principal Investigator Stephen Kron. **Methods:** Molecular biology immunoassays including flow cytometry and histology; proteomics data analysis.

Project: Targets of Reactive Lipid Species Regulating DNA Damage Response and Cell Senescence. University of Chicago (Chicago, IL). National Institute of Health/National Cancer Institute RO1 grant #5R01CA21718204, 2017 – 2022. **Role:** Lead research scientist and project manager. **Contributions:** Contributed majority of data to grant application. Developed key concepts via laboratory experimentation. First author of four published papers and one conference poster describing laboratory research findings. Currently performing experimental research in a lead scientist role. **Methods:** Molecular biology assays, proteomics data analysis.

Project: Veliparib Interactions with Genotoxic and Immunotherapy: Therapy-Induced Senescence and Anti-Tumor Immunity. Collaboration between University of Chicago (Chicago, IL) and AbbVie Pharmaceuticals (North Chicago, IL). 2016 - 2019. **Role:** Research scientist and project manager. **Contributions:** Managed team members at University of Chicago towards completion of grant aims. Performed experiments to assess biomarkers of drug response. Presented poster with project colleagues at conference. **Methods:** Histology staining and quantitative analysis.

Project: In-Home Neutropenia Test Kit. Developed for National Science Foundation Innovation Corps at University of Chicago Booth School of Business Polsky Center for Entrepreneurship, 2016. **Role:** Project co-leader. **Contributions:** Co-wrote project proposal. Conceived and developed molecular biology approaches enabling test kit. Attended Biomarkers and Precision Medicine USA Congress 2016 in San Diego. Attended intensive business development classes at University Chicago Booth School of Business. **Methods:** Commercial prototype development, meeting with potential clients, learning how to 'pitch' an innovative technology.

Project: A Quantitative Method of Identification and Enrichment of Viable Senescent Cells for Use as Cancer Vaccine. University of Chicago (Chicago, IL). National Center for Advancing Translational Sciences University core facilities usage grant, 2013. **Role:** Lead research scientist. **Contributions:** Conceived project and wrote grant proposal. Conducted research at flow cytometry core facility as funded by terms of project, obtaining successful results. **Methods:** Mammalian cell culture, flow cytometry, optimization of novel methods.

Project: Universal Reagent Sets for Sensitive and Specific Multiplex Immunofluorescent Cancer Diagnostics. University of Chicago (Chicago, IL) in partnership with Solulink Biosciences (San Diego, CA). NIH/NCI Small Business Innovation Research Program (SBIR) grant, 2011 – 2014. **Role:** Research technician. **Contributions:** Obtained key data for grant applications in Phase I and renewal for Phase II. Wrote extensive portions of grant proposal and follow-up reports. Published paper demonstrating key findings (2014). **Methods:** Quantitative flow cytometry, bioconjugation, histology, optimization of novel methods and reagents.

PUBLICATIONS

Lipid-derived electrophiles mediate the effects of chemotherapeutic Topoisomerase I poisons. Amy Flor, Don Wolfgeher, Jing Li, Leslyn Hanakahi, Stephen Kron. In press, Cell Chemical Biology, 2020.

UltraPlex hapten-based multiplexed fluorescent immunohistochemistry. Matthew Levin, Amy Flor, Stephen Kron, Helen Snyder, David Schwartz. Book chapter for Multiplexed Imaging in Methods for Molecular Biology book series (Springer Protocols), In press, 2020.

Multiplexed tissue tomography. Seung-Young Lee, David Scholten, Amy Flor, Stephen Kron. Book chapter for Multiplexed Imaging in Methods for Molecular Biology book series (Springer Protocols). In press, 2020.

Mevalonate pathway activity as a determinant of radiation sensitivity in head and neck cancer. Natalia Ricco, Amy Flor, Don Wolfgeher, Elena Efimova, Aishwarya Ramamurthy, Oliver Appelbe, Jacqueline Brinkman, Andrew Truman, Michael Spiotto, Stephen Kron. Molecular Oncology, 2019 Sep;13(9):1927-1943. PMID: 31225926

O-GlcNAcylation enhances double-strand break repair, promotes cancer cell proliferation, and prevents therapy-induced senescence in irradiated tumors. Elena Efimova, Oliver Appelbe, Natalia Ricco, Seung-Young Lee, Don Wolfgeher, Tamica Collins, Amy Flor, Aishwarya Ramamurthy, Sara Warrington, Vytas Bindokas, Stephen Kron. Molecular Cancer Research, 2019 Jun;17(6):1338-1350. PMID: 30885991

HMG-CoA reductase inhibition delays DNA repair and promotes senescence after tumor irradiation. Elena Efimova, Natalia Ricco, Edwardine Labay, Helena Mauceri, **Amy Flor**, Aishwarya Ramamurthy, HG Sutton, Ralph Weichselbaum, Stephen Kron. Molecular Cancer Therapy, 2018 Feb;17(2):407-418. PMID: 29030460

Radiation-enhanced delivery of systemically administered amphiphilic-CpG oligodeoxynucleotide. Oliver Appelbe, Kelly Moynihan, **Amy Flor**, Nicholas Rymut, Darrell Irvine, Stephen Kron. Journal of Controlled Release, 2017 Nov 28;266:248-255. PMID: 28987882

A signature of enhanced lipid metabolism, lipid peroxidation, and aldehyde stress in therapy-induced senescence. **Amy Flor**, Don Wolfgeher, Ding Wu, Stephen Kron. Cell Death Discovery, 2017 Oct 30;3:17075. PMID: 29090099

Lipid-derived reactive aldehydes link oxidative stress to cell senescence. **Amy Flor** and Stephen Kron. Invited review, Cell Death Disease, 2016 Sep 8;7(9):e2366. PMID: 27607581

Modulation of therapy-induced senescence by reactive lipid aldehydes. **Amy Flor**, Anjali Doshi, Stephen Kron. Cell Death Discovery, 2016; 2:16045. PMID: 27453792

Repurposing cephalosporin antibiotics as pro-senescent radiosensitizers. Edwardine Labay, Helena Mauceri, Elena Efimova, **Amy Flor**, HG Sutton, Stephen Kron, Ralph Weichselbaum. Oncotarget, 2016 Jun 7;7(23):33919-33. PMID: 27129153

DNA-directed assembly of antibody-fluorophore conjugates for quantitative multiparametric flow cytometry. **Amy Flor**, Jimmy Williams, Kelly Blaine, Ryan Duggan, Anne Sperling, David Schwartz, Stephen Kron. ChemBioChem, 2014 Jan 24;15(2):267-75. PMID: 24375983

PATENTS

Oligonucleotide-Mediated Quantitative Multiplexed Immunoassays. **Amy Flor**, Ryan Duggan, Stephen Kron. PCT/US2013/045872, US Patent #9,663,818, 2017 [granted].

High-Affinity Immunopolymers. David Schwartz, Stephen Kron, **Amy Flor**. PCT/US2015/059424, 2015.

Methods and/or use of Oligonucleotide Conjugates for Suppressing Background Due to Cross-Hybridization. David Schwartz, Jimmy Williams, Xinfang Zhao, Stephen Kron, **Amy Flor**. US Patent #9,222,936, 2015 [granted].

Methods and Compositions Involving Induced Senescent Cells for Cancer Treatment. Stephen Kron, Ralph Weichselbaum, Elena Efimova, Yuru Meng, **Amy Flor**. PCT/US2012/066369, W02013078392A1, 2012.

Methods and/or Use of Oligonucleotide Conjugates for Assays and Flow Cytometry Detections. David Schwartz, Jimmy Williams, Xinfang Zhao, Chunfang Zhao, William Busa, Stephen Kron, **Amy Flor**. US Patent application #13302877, US20120258880A1, 2011.

CONFERENCE PRESENTATIONS

Lipid peroxidation mediates the effects of topoisomerase poisons on their targets. **Amy Flor**, Don Wolfgeher, Jing Li, Leslyn Hanakahi, Stephen Kron. American Association for Cancer Research (AACR) National Conference, Chicago, IL; 2019.

Veliparib interactions with genotoxic and immuno-therapy: therapy induced senescence and anti-tumor immunity. Allison Nipper, David Scholten, Elena Efimova, **Amy Flor**, Ding Wu, Stephen Kron. AbbVie-UChicago Research Symposium, Chicago, IL; 2019.

Near infrared tumor histology for multiplexed phenotypic identification of immunosuppressive cells. Annalise Vaccarello, **Amy Flor**, Matthew Levin, Helen Snyder, David Schwartz, Stephen Kron. AACR National Conference, Chicago, IL; 2018.

Neutropenia In-Home Test Kit. Natalia Ricco, **Amy Flor**. National Science Foundation Regional Innovation Corps Competition, University of Chicago, Chicago IL; 2016.

PROFESSIONAL ACTIVITIES

- Medical Copyediting Course, University of Chicago - Graham School, 2020.
- Entrepreneurship Training Course, NSF Innovation Corps ("I-Corps"). University of Chicago Booth School of Business, 2016.
- SBIR/STTR Grant Writing Training Workshop. MATTER Chicago, 2016.
- Flow Cytometry Mastery Class. ExCyte (online course), 2015.

REFERENCES

Dr. Stephen Kron. Professor and Principal Investigator, Department of Molecular Genetics and Cell Biology, 929 E. 57th St, W522A, University of Chicago, Chicago, IL USA. 773-834-0250, skron@uchicago.edu

Dr. David Schwartz. Co-Founder, Chief Executive Officer, Chief Science Officer, Cell IDx, San Diego, CA USA. 858-452-5800. david_schwartz@cellidx.com

Dr. Natalia Ricco. Head of Studies (Biomedical Science), Universitat Internacional de Catalunya, Barcelona, Spain. natyrizzo@gmail.com