



Amanda Schalk, PhD
University of Illinois Chicago

Research Assistant Professor,
 Department of Biochemistry and Molecular Genetics

AREA(S) OF FOCUS:

Retooling existing enzyme-based therapies to fight cancer

Dr. Schalk employs protein engineering techniques to reduce the side effects and improve the anti-tumor efficacy of current enzyme therapeutics.

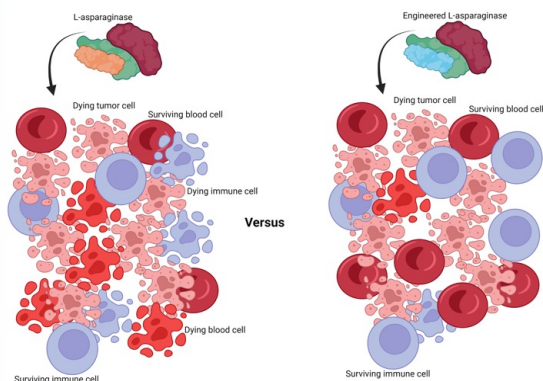
KEY RESEARCH AREAS:

Therapeutic enzymes

Develop enzymes to interfere with essential tumor cell survival pathways while avoiding damage to non-tumor cells.

Chimeric therapeutic enzymes

Design human-guinea pig chimeric enzymes with improved tumor-killing ability as compared to human enzymes.



L-asparaginase breaks down asparagine but has severe side effects.

ENTREPRENEURIAL SUCCESS:



Enzyme by Design utilizes biochemistry to improve existing enzyme-based therapies for both blood and solid tumors.

- Enzyme by Design is engineering L-asparaginase with reduced side effects and improved asparagine specificity.
- Development of a novel fusion biologic that increases efficacy and overcome resistance through synergistically activating dual anti-tumor mechanisms of action.
- Use precision medicine and multiple biomarkers to select for tumors likely to be sensitive to the enzyme-based therapies.

Over \$2M raised and recipient of multiple awards including:

- 2019 MedCity INVEST Pitch Perfect Startup Contest.
- 2020 American Women in Science-Chicago Innovator.
- 2021 Chicagoland Biotech Startup Business Plan Competition.