

Eron Saxon

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EDUCATION

B.S. in Chemistry *cum laude*
University of Wisconsin – Milwaukee

Sept. 2015 – Dec. 2018
Milwaukee, WI

Ph.D. in Chemistry
University of Wisconsin – Milwaukee

Sept. 2019 – May 2024
Milwaukee, WI

Dissertation: “Boron-based theranostics and prodrugs: design, synthesis, mechanism and biological investigation”

EMPLOYMENT EXPERIENCE

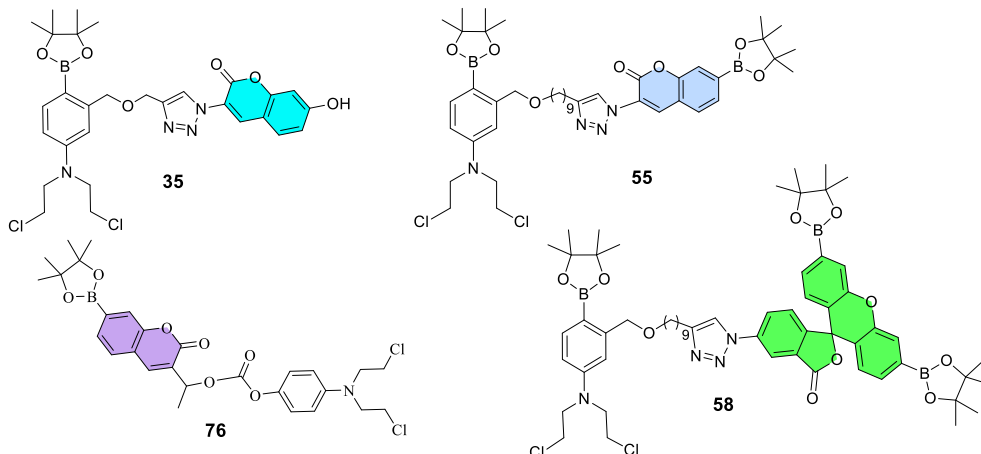
Quality Control Lab Technician
MetalTek International

Jan. 2018 – April 2019
Waukesha, WI

- Operated analytical instruments, including LECO carbon/sulfur and nitrogen/oxygen instruments, x-ray, and arc optical emission spectrometers
- Maintained and standardized instruments following Nadcap (National Aerospace and Defense Contractors Accreditation Program) approved protocols
- Performed routine analysis of heterogeneous metals for determination of elemental composition

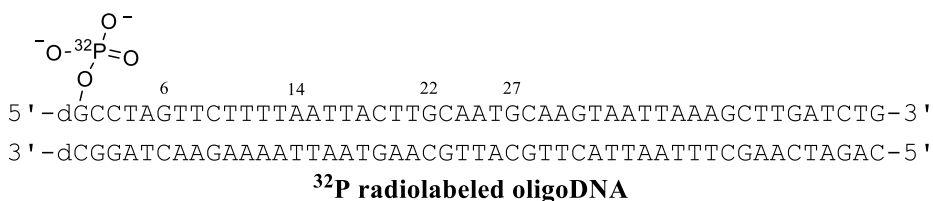
Research & Teaching Assistant
University of Wisconsin – Milwaukee, Advisor: Dr. Peng

Sept. 2019 – May 2024
Milwaukee, WI

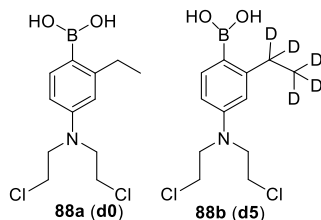


- Designed novel theranostic and prodrug nitrogen mustards as anticancer small molecules

- Performed multi-step synthetic routes (>13 steps) of oxygen-, water-, light-sensitive reaction conditions
- Isolated and purified compounds by column chromatography, distillation, precipitation, recrystallization, and trituration resulting in 4 novel theranostics
- Characterized compounds by utilizing TLC, NMR, LCMS, HRMS Q-TOF, UV/VIS, fluorescence, and fluorescence confocal microscope instruments
- Evaluated theranostics and prodrugs using cytotoxicity and fluorescence colocalization assays *in vitro* with TNBC MDA-MB-468 cell line
- Synthesized oligonucleotides by automated solid-phase synthesis with ABI 394, purification and ³²P radiolabeling of oligo for DNA interstrand cross-linking assays



- Determined safety and anticancer efficacy of compounds in *in vivo* CD1 and xenograft athymic mice study following IACUC approved guidelines
- Determined physiochemical properties of small molecules (solubility and permeability)
- Determined photophysical properties of fluorescent dyes
- Determined prodrug activation mechanism *in vitro* and *in vivo* through deuterium isotope-labeled mustard prodrugs



- Trained and supervised undergraduate students in research and teaching laboratories or classrooms

Research Volunteer

University of Wisconsin – Milwaukee, Advisor: Dr. Peng

June 2024 – Aug. 2024

Milwaukee, WI

- Investigation of novel small molecule prodrugs and theranostics as selective anticancer and/or fluorogenic agents

Postdoctoral Fellow

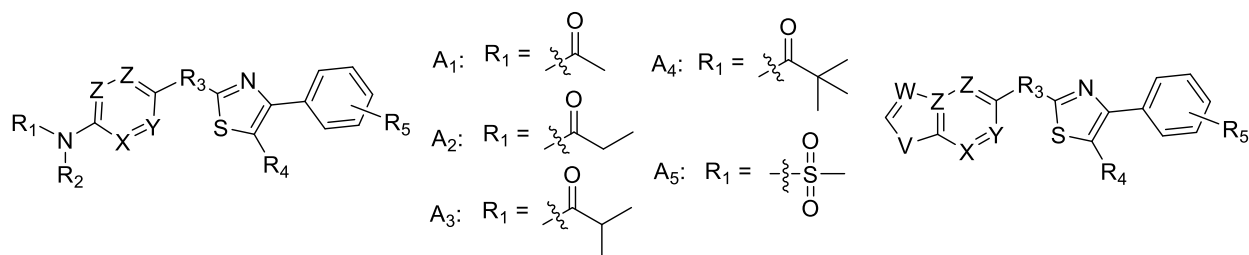
Concordia University Wisconsin, Advisor: Dr. Cunningham

July 2024 – Current

Mequon, WI

- Designed, synthesized and characterized novel sterol carrier protein-2 (SCP-2) inhibitors as endocannabinoid/cannabinoid system modulators for treatment of anxiety and stress

- Hit-to-lead discovery, SAR synthesis and optimization of small organic molecules for targeting proteins
- Maintained lab notebook records of experimental procedures, data, and observations
- Utilized synthetic organic chemistry techniques, including multi-step synthesis, purification, and characterization (NMR, purity score, MS and melting point)
- Routine upkeep of research equipment, including Varian 500 MHz NMR, Thermo Dionex 3000 HPLC-DAD, Sciex 4000 triple quad LC/MS and Biotage flash chromatography
- Collaborated with an interdisciplinary team to interpret the results of structure-activity



SKILLS

- Synthetic organic chemistry, laboratory techniques and instrumentation
- Click CuAAC, boron chemistry and heterocycle reactions
- Knowledge of the anticancer drug development process
- Microsoft Office, ChemDraw, ChemSketch, SciFinder, Reaxys, Shimadzu LabSolutions, Bruker TopSpin, ImageJ, Zeiss Zen, QuPath, GraphPad Prism and MestReNova

AUXILIARY SKILLS

- Ability to maintain lab safety, lab cleanliness, lab notebook and meet deadlines
- Ability to rationally design and synthesize molecules
- Self-motivated and detail-oriented

AWARDS

- UWM Chancellor's Award (2019 – 2022)
- UWM Graduate School Distinguished Dissertation Fellowship (DDF) Award (2023 – 2024)

PATENT

- Peng, X.; Saxon, E., Hydrogen Peroxide Responsive Theranostics. Patent Application 2024, US provisional patent No. 020871-0017-US01

PUBLICATIONS

- Fan, H.; Zaman, M. A. U.; Chen, W.; Ali, T.; Campbell, A.; Zhang, Q.; Setu, N. I.; **Saxon, E.**; Zahn, N. M.; Benko, A. M.; Arnold, L. A.; Peng, X., Assessment of Phenylboronic Acid

Nitrogen Mustards as Potent and Selective Drug Candidates for Triple-Negative Breast Cancer. *ACS Pharmacol. Transl. Sci.* (2021), 4 (2), 687-702.

- **Saxon, E.**; Peng, X., Recent Advances in Hydrogen Peroxide Responsive Organoborons for Biological and Biomedical Applications. *ChemBioChem.* (2021) <https://doi.org/10.1002/cbic.202100366>
- **Saxon, E.**; Ali, T.; Peng, X., Hydrogen Peroxide Responsive Theranostics for Cancer-Selective Activation of DNA Alkylators and Real-Time Fluorescence Monitoring in Living Cells. *EJMECH.* (2024) <https://doi.org/10.1016/j.ejmech.2024.116695>
- **Saxon, E.**; Stambekova D., Clark J.R., Peng, X. Metabolism of H₂O₂-Activated Phenylboronic Nitrogen Mustard Prodrug in Triple Negative Breast Cancer Cell and Tumor-Bearing Mice. (in preparation)

PRESENTATIONS

- Saxon E., Peng X., DNA Sequencing: Modern Techniques and Application (2020). UWM Graduate Seminar, Milwaukee WI.
- Saxon E., Peng X., Synthesis of a Novel Phenyl Boronic Ester Nitrogen Mustard Analog (2021). Poster at the UWM Spring Symposium, Milwaukee WI.
- Saxon, E., Peng, X. Biological Application of a Novel DNA-Alkylating Theranostic Agent (2022). Poster at the ACS Fall 2022 Conference, Chicago IL.
- Saxon E., Peng X., Synthesis and Application of a Novel DNA Alkylating Theranostic Agent. (2022). Seminar at the UWM Institute for Drug Discovery, Milwaukee WI.

REFERENCES

Xiaohua Peng, PhD

Associate Professor

UWM Chemistry and Biochemistry

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Milwaukee, WI 53211

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Alexander Arnold, PhD

Professor and Director of the MIDD

UWM Chemistry and Biochemistry

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Milwaukee, WI 53211

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Shama Mirza, PhD

Associate Professor and Director of the Shimadzu Laboratory

UWM Chemistry and Biochemistry

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Milwaukee, WI 53211

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