

Kristopher A. Kleski

2740 Northwood Ave. Toledo, OH 43606 | 740-416-7481 | kleskik@gmail.com

Education

Racine Southern High School – Racine, OH 45771

High School Diploma | May 2010

University of Rio Grande – Rio Grande, OH 45674

Bachelor of Science, Magna Cum Laude (GPA: 3.8) | Major: Chemistry | Minor: Mathematics | May 2014

ACS Exams: General Chemistry I (90th percentile), General Chemistry II (97th percentile), Organic Chemistry (83rd percentile), Quantitative Analysis (93rd percentile)

University of Toledo – Toledo, OH 43606

Doctorate of Philosophy (GPA: 3.6) | Major: Chemistry | Expected August 2019

Experience

Undergraduate

- Connected chemistry and art under URG Provost's Initiative. Acid-base, redox, and organic reactions were used to make various pigments which were emulsified in various matrices.
- Produced a chemical method to distinguish the isomers cisplatin and transplatin
- Rationally designed antibiotics targeting a conserved T-Box Riboswitch in Gram-positive Bacteria using computational methods
- Empirically derived a kinetic function to estimate radius of CdSe quantum dots
- Volunteered as an undergraduate lab assistant under Dr. Stephen Bergmeier at Ohio University during the summer of 2013. Conducted the syntheses, purifications, and characterizations of flavonoid type compounds for *in vitro* anti-cancer activity.
- Tutor for chemistry, mathematics, and physics at the URG "Math Lab" tutoring center

Graduate

- Teaching Assistant for General Chemistry I recitation and Organic Chemistry Lab II.
- Carbohydrate chemistry: Working knowledge of glucose, galactose, lactose, and N-Acetylneuraminic acid (Sialic Acid) carbohydrate chemistry involving protecting group manipulations for glycosylation strategies. Includes reaction details and mechanisms, optimizations, purifications, and characterization.
- Synthesis of the carbohydrate natural product ganglioside mono-sialic acid 3 (GM3), a tumor associated carbohydrate antigen. The synthesis involves an alpha selective sialylation strategy to lactose.
- Natural product isolation: Isolated the zwitterionic polysaccharide PS A1, a constituent polysaccharide of the capsule from the commensal anaerobe *Bacteroides fragilis*. Involves bacterial culture, extraction methodologies, purification methodologies, and characterization via NMR experiments.
- Conjugation chemistry: Conjugated carbohydrate haptens (amino-oxy Tn, TF antigens) to PS A1 via selective oxidation of PS A1 followed by oxime link formation with hapten structure. Conjugations characterized by NMR.
- Vaccine formulation and immunization: Prepared vaccine constructs for immunizing C57BL/6 mice. Currently approved by IACUC to work with C57BL/6, SCID, and transgenic mouse models.
- Immunological assessments: Evaluated immune responses utilizing *in vitro* assays such as ELISA, FACS, CDC, and ELISpot.

Professional

- Field/Lab Technician for Kleski Environmental Services. Tasks included: stream analysis using physical, chemical, and biological assessment of streams for water quality, water sampling, data organization, and compilation. Management of field instruments, and instrument calibration.
- QDC training at Ohio University. Content involved sample collection, field data acquisition, and field instrument management.

Kristopher A. Kleski

2740 Northwood Ave. Toledo, OH 43606 | 740-416-7481 | kleskik@gmail.com

Awards and Presentations

Awards

University of Rio Grande | Chemistry Excellence Academic Scholarship

University of Rio Grande | 2013 Academy of Science Meeting travel grant

Presentations

University of Rio Grande | 2012 URG Provost's Academic Excellence Initiative Showcase (Talk)

University of Rio Grande | 2013 URG School of Sciences Seminar Series (Talk)

2014 Ohio Academy of Science Meeting | "Quantum Dot Reaction Kinetics: Determining Color of the Dot with Reaction Time" (Poster)

2014 Ohio Academy of Science Meeting | "Computational Binding Assays and Synthetic Routes to Derivatives of Potential Antibiotics" (Poster)

2015 Midwest Carbohydrate and Glycobiology Symposium | "Synthesis of β -aminoxy GM3 Analogue for linker free applications of anti-cancer Immunogens" (Poster)

2016 Midwest Carbohydrate and Glycobiology Symposium | "Immunological Evaluation of STn-PS A1 as an Entirely Carbohydrate Immunogen" (Talk)

University of Toledo 2017 Graduate Student Seminar | "Increasing Immunogenicity of Carbohydrate Antigens Utilizing the Zwitterionic Polysaccharide PS A1" (Talk)

Publications

Kristopher A. Kleski

Computational Binding Assays and Synthetic Routes to Derivatives of Potential Antibiotics. Published as Senior Thesis in The Jeanette Albiez Davis Library, University of Rio Grande.

Mengchao Shi, **Kristopher A. Kleski**, Kevin R. Trabbic, Jean-Paul Bourgault, and Peter Andreana

Sialyl-Tn Polysaccharide A1 as an Entirely Carbohydrate Immunogen: Synthesis and Immunological Evaluation. *J. Am. Chem. Soc.*, **2016**, 138(43), pp 14264-14272

References

Peter Andreana, PhD
Graduate Advisor
Professor of Chemistry
Department of Chemistry and
Biochemistry
University of Toledo
2801 W. Bancroft St., Wolfe
Hall 2232B
Toledo, OH 43606-3390
419-530-1909
peter.andreana@utoledo.edu

Kevin Trabbic, PhD
Former Lab Associate
Post-Doctoral Fellow (CRTA)
National Cancer Institute
Center for Cancer Research
Building 376
Frederick, MD 21702-1201
419-290-7685
kevin.trabbic@nih.gov

John Means, PhD
Undergraduate Advisor
Associate Professor of Chemistry
School of Mathematics and Natural
Sciences
Chemistry Program Coordinator
University of Rio Grande
PO Box 500, Rio Grande, OH 45674
Kidd Math Science Room 100A
(740) 245-7165
jmeans@rio.edu