

Keighley N. Reisenauer

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Research / Career Interests

Molecular and cellular biology research | Precision oncology | Collaboration | Medical Affairs
Science Communication | Community Outreach | Informal Science Education

Education

Baylor University, PhD — Waco, TX

Cellular, Molecular, Health and Disease Track, Department of Biology

Advisor: Dr. Joseph Taube

Dissertation Title: *Effective Targeting of Epithelial Mesenchymal Transition-derived Breast Cancer Stem Cells Using Ophiobolin A, a Natural Product*

Aug 2016 –
August 2021

University of Wisconsin- Madison, BSc— Madison, WI

Majors: Genetics and Spanish

Honors in Research

Sept 2012 –
May 2016

University of Seville — Seville, Spain

Majors: Spanish

UW Madison International Academic Programs Fall 2014; CIEE Liberal

Arts in Seville study abroad program

Aug 2014 –
Dec 2014

Work Experience

Associate Research Director

Private Health Management; Los Angeles, CA - Remote

Feb 2021 - Nov
2023

Identify and evaluate diagnostic and treatment options including clinical trials and innovative, evidence-based therapies around the world, optimize treatment strategies, facilitate access to world leaders in oncology.

- Lead research efforts on 38 cases with a variety of complex cancer diagnoses
- Tailor education to clients and healthcare professionals, review/understand complex scientific and medical data from clinical and non-clinical trials.
- Maintain deep subject matter expertise, industry insights and willingness to innovate
- Establish and maintain strong relationships with therapeutic experts to identify and leverage expertise and medical education activities to improve patient care.
- Manage multiple projects and competing priorities with a high level of efficiency
- **Skills:** Clinical research, Relationship building, Molecular oncology and diagnostics, Teamwork and collaboration, Project management,

Interpretation and education of clinical research, Medical communication/
Medical affairs

Communications Director – Contract

Sept 2021 –
May 2022

lylon Precision Oncology, Houston TX

- Design and disseminate strategic social media marketing campaigns centered around biomedical content.
- Shape editorial content to meet branding and editorial style requirements, ensuring engaging, compelling, and well-targeted content that upholds institutional standards of accuracy, integrity, purpose, and clarity
- Grow social media following to drive increased patient-to-provider interactions surrounding precision oncology.
- **Skills:** Strategic communication, Professional leadership, Attention to detail, Social media branding, Writing and editing

Academic Appointments

Post-Doctoral Teaching Fellow / Adjunct Lecturer

Aug 2020 –
Jan 2021

Baylor University, Waco, TX

Instruct 200+ students on Biology-major track. Design and deliver active-learning style lectures, manage paired online platform on LMS for each course.

- Introductory Biology – 200 students
- Science Communication, original course design – 30 students
- **Skills:** Student connections, Real world applications, Creative problem solving, Academic policies, Classroom management, Course design, Student management systems

Publications (Scientific)

1. Young NA, Skaggs C, Tran F, Murray S, Lara MK, Wolf TH, Popal T, **Reisenauer K**, Osgood N, Betzner I, Britt G, Pena J, Gordon E, Simon R. Novel Protocol Using a Comprehensive Training ‘N’ Treatment (TNT) Approach Rapidly Reverses Olfactory and Gustatory Dysfunction in Patients with Acute Loss of Taste and Smell Induced by SARS-CoV-2 Infection. In Review; 2023 Mar.
2. **Reisenauer KN**, Aroujo J, Tao Y, Ranganathan S, Romo D, Taube JH. Therapeutic vulnerabilities of cancer stem cells and effects of natural products. Nat Prod Rep. 2023 Aug 16;40(8):1432–56.
3. **Reisenauer K**. Effective targeting of epithelial mesenchymal transition-derived breast cancer stem cells using ophiobolin A, a natural product. [Thesis]. [Waco, TX]: Baylor University; 2021 [cited 2023 Jul 12]. Available from: <https://baylor-ir.tdl.org/handle/2104/11596>
4. Xue H, Svatek H, Bertonha AF, **Reisenauer K**, Robinson J, Kim M, et al. Synthesis of agelastatin A and derivatives premised on a hidden symmetry element leading to analogs displaying anticancer activity. Tetrahedron. 2021 Jul 10;132340.
5. **Reisenauer KN**, Tao Y, Das P, Song S, Svatek H, Patel SD, et al. Epithelial-mesenchymal transition sensitizes breast cancer cells to cell death via the fungus-derived sesterterpenoid ophiobolin A. Scientific Reports. 2021 May 20;11(1):10652.

6. Gayler KM, Kong K, **Reisenauer K**, Taube JH, Wood JL. Staurosporine Analogs Via C-H Borylation. ACS Med Chem Lett. 2020 Dec 10;11(12):2441–5.
7. Tao Y, **Reisenauer KN**, Masi M, Evidente A, Taube JH, Romo D. Pharmacophore-Directed Retrosynthesis Applied to Ophiobolin A: Simplified Bicyclic Derivatives Displaying Anticancer Activity. Org Lett. 2020 Nov 6;22(21):8307–12.
8. Tao Y, **Reisenauer K**, Taube JH, Romo D. Total Synthesis and Anticancer Activity of (+)-Hypercalin C and Congeners. Angewandte Chemie. 2019;131(9):2760–4.
9. Taube JH, Sphyris N, Johnson KS, **Reisenauer KN**, Nesbit TA, Joseph R, et al. The H3K27me3-demethylase KDM6A is suppressed in breast cancer stem-like cells, and enables the resolution of bivalency during the mesenchymal-epithelial transition. Oncotarget. 2017 Sep 12;8(39):65548–65.

Research Experience

Taube Lab — Baylor University, Graduate Researcher

Aug 2016 –
August 2021

Breast cancer biology, molecular biology | Expertise in breast cancer biology, molecular and cellular experimental approaches, innovative project design and execution, and technical and layperson communication of scientific ideas.

- **Thesis:** EMT-derived triple negative breast cancer stem-like cells are differentially sensitive to Ophiobolin A-induced paraptosis, reducing chemoresistance and metastasis.
- **Skills:** Project management, Critical and analytical thinking, Problem-solving, Mentoring, Communication, Data visualization

Denu Lab — University of Wisconsin- Madison, Undergraduate Researcher

Sept 2013 –
May 2016

Biomolecular chemistry, epigenetics | Evaluated the mechanism of mitochondrial non-enzymatic protein acetylation and developed a method to quantify nonenzymatic acetylation rate

Pool Lab — University of Wisconsin- Madison, Undergraduate Research Assistant

Sept 2012 –
May 2013

Population genetics | Surveyed diverse coloration traits of *D. melanogaster* populations

Teaching Experience

Lecturer — Baylor University

Aug 2021 –
May 2022

- Introductory Biology (BIO 1305)– 200 students
- Science Communication, original course design (BIO 3300) – 30 students

Guest Lecturer — Baylor University

- Graduate Scientific Writing and Communication (BIO 5100) Oct 2020
- Graduate Research Methods (BIO 5201) Sept 2020, 2021
- Introductory Biology (BIO 1305) Dec 2019

- Honors Genetics (BIO 2306) Nov 2019

Teacher of Record — Baylor University

- Microbiology Lab (BIO 1402) Aug 2016 – Dec 2018, June 2020 – Dec 2020
- Human Physiology Lab (BIO 3422)
- Biology I Lecture (BIO 1305)
- Biology I Lab (BIO 1105)
 - Re-design Biology I Lab curriculum to focus on class interaction and group-learning June 2018
- Graduate Lab Coordinator (BIO 1105) Aug – Dec 2020

Graduate Exam Coordinator — Baylor University

Coordinate exam proctoring for large biology lectures and provide exam review services to professors. Jan 2018 – May 2019

Selected Presentations (Academic, first-author only)

<i>Targeting EMT-driven metastasis via Ophiobolin A</i>	Feb 2021
Biology Seminar, Baylor University Waco, Texas	
<i>Metastasis-promoting epithelial-mesenchymal transition sensitizes breast cancer cells to cell death via the fungus-derived sesterpenoid, Ophiobolin A</i>	Sept 2019
MBC, Arizona	
<i>Exploring breast cancer sensitivity to the fungus-derived sesterpenoid, Ophiobolin A [Oral]</i>	May 2019
CEGSS Biology Symposium, Biology Department, Baylor University Waco, Texas	
<i>Epithelial-mesenchymal transition sensitizes breast cancer cells to paraptosis-mediated cell death via the fungus-derived sesterpenoid, Ophiobolin A</i>	Dec 2018
SABCS, Texas	
<i>Inducible De-repression of miR-203 to Reverse EMT-Generated Stemness in Breast Cancer Cells</i>	Dec 2017
TEMTIA, Texas	
<i>Mocetinostat de-represses miR-203 to reverse EMT-generated stemness in breast cancer cells</i>	Sept 2017
Breast Cancer Retreat, Baylor College of Medicine, Texas	
<i>Measuring Mitochondrial Lysine Acetylation</i>	April 2016
Undergraduate Research Symposium, University of WI- Madison, Wisconsin	
<i>Measuring Mitochondrial Lysine Acetylation [Oral]</i>	April 2016
Senior Honors Research Symposium, University of WI- Madison, Wisconsin	
<i>Measuring Mitochondrial Lysine Acetylation [Oral]</i>	April 2016
CALS Symposium, University of WI- Madison, Wisconsin	
<i>Pigmentation Diversity Within and Between Drosophila Populations</i>	April 2013

Mentorship

MiniPharma collaboration – Graduate mentor	Oct 2016 – Aug 2021
<ul style="list-style-type: none"> Baylor University, Waco, TX Mentored biology students (3) 	
GUMP (Graduate/Undergraduate Mentorship Program) – Graduate mentor	2016, 2018-19
<ul style="list-style-type: none"> Baylor University, Waco, TX Mentored students (2) in biology and mathematics, and biochemistry 	
B-True (Baylor Transdisciplinary Research Undergraduate Experience) Program – Graduate mentor	May – Aug 2017 May – Aug 2019
<ul style="list-style-type: none"> Department of Biology/ Pre-Health Office, Baylor University, Waco, TX Mentored biology students (2) 	

Service

• ComSciCon – Houston – Co-Chair	April 2021
• Heart of Texas Undergraduate Research Conference – Panelist	March 2021
• Texas A&M Student Research Week 2021 – Panelist	March 2021
• Science Mentorship and Speaker – Volunteer	2018-2021
<ul style="list-style-type: none"> Letters to a Pre-Scientist Skype a Scientist 	
• Women in the Academy (WITA) — Program Planning Committee	Aug 2018 – May 2019
<ul style="list-style-type: none"> Baylor Graduate School, Baylor University, Waco, TX Panel Participant during the Institute for Faith and Learning conference 	October 2019
• CEGSS (CMHD/EEO Graduate Student Society) — Founding Member	March 2018 – Dec 2019
<ul style="list-style-type: none"> Department of Biology, Baylor University, Waco, TX Vice President (March 2018 – July 2019) Secretary (March 2018 – Dec 2019) 	
• Biology Seminar Series — Speaker Curator and Graduate Assistant	Jan 2018 – May 2018
<ul style="list-style-type: none"> Department of Biology, Baylor University, Waco, TX 	
• Present Your PhD — Co-Founder, Director of Logistics, Leadership and Communications Officer	April 2017 – Aug 2021
<ul style="list-style-type: none"> Baylor University, Waco, TX Develop science communication curriculum and training K-12 STEM outreach 	
• Advocacy Center for Crime Victims and Children — Hotline Advocate	June 2018 – June 2022
<ul style="list-style-type: none"> Waco, TX 	

Publications (Science Communication)

1. Reisenauer K. Your Genetics Could Affect Your Breast Cancer Treatment [Internet]. OncoBites. 2022.
2. Howell AA, Reisenauer KN, Valkanas MM, Carter KE. Beyond the Base-ics: approaches to driving connection through genetics in museums. JCOM. 2022 Jan 24;21(01):A02.
3. Reisenauer K. Freaky Friday: What happens when cancer cells swap mitochondria? [Internet]. OncoBites. 2021.
4. Howell A, Reisenauer K, Valkanas M, Carter K. Evaluation and Discussion of Genetics Content in Museums [Internet]. In Review; 2021 Feb
5. Reisenauer K. Preventing cell death decreases breast cancer recurrence [Internet]. OncoBites. 2020.
6. Reisenauer K. The Other EMT: Exploring the controversial driver of metastasis [Internet]. OncoBites. 2019.

Presentations (Outreach & Education)

- **Science Communication and Community Outreach – Virtual Seminar** July 2021
BTRUE Seminar, Baylor University, Waco, TX, USA
- **Targeting EMT-driven metastasis via Ophiobolin A – Virtual Presentation** March 2021
Present Your PhD, Texas Bioscience Institute, Temple, TX, USA
- **Targeting EMT-driven metastasis via Ophiobolin A – Seminar** Feb 2021
BIO 3100 Graduate & Undergraduate Seminar in Biology, Baylor University, Waco, TX
- **Writing Science and Science Communication – Seminar** Oct 2020
BIO 5101 Grad Scientific Communications, Baylor University, Waco, TX
- **Data Visualization and Graphic Design – Seminar** Sept 2020
BIO 5201 Research Methods in Biology, Baylor University, Waco, TX
- **Virtual Genetics – Virtual Seminar** July 2020
Mayborn Museum, Waco, TX
- **New Mask Who This: Leveraging Influencer Culture to Drive Social Change Around COVID-19– Virtual Presentation** May 2020
Science Talk, Portland OR
 - [Project funded by Sigma Xi through SciCommMake]
- **Graphical Design Interface: BioRender 101 – Seminar** March 2020
Young Environmental Scientists Conference, SETAC, Waco, TX
- **The Science of Healing: Cutting Edge Cancer Biology Research – Seminar** Oct 2019
Sic ‘em Science Day, Mayborn Museum, Waco, TX
- **Present Your PhD: Creating community connections through STEM outreach – Poster** April 2019
 - Science Talk, Portland, OR
 - Effective Science Communication – Seminar Nov 2019
 - Present Your PhD and Baylor Graduate School, Waco, TX
- **Effective Science Communication - Oral Presentation** March 2017
Present Your PhD, Texas Bioscience Institute, Temple, TX, USA

Awards and Honors

- **Science Outreach Fellow** - National Center for Science Education 2020
- **Science Talk Travel Award** – Science Talk April 2019
- **Teaching in Higher Education Capstone** – Baylor University May 2019
- **Portal to the Public Fellow** – Mayborn Museum 2018-19
- **Graduate School Fellowship** – Baylor University 2016-2021
- **Honors in Research** – University of Wisconsin- Madison, College of Agricultural and Life Sciences May 2016
- **Dean's List** – University of Wisconsin- Madison 2013, '14, '16
- **Undergraduate Research Scholar** – University of Wisconsin- Madison 2012-13
- **Northwestern Mutual Scholars Grant** – Northwestern Mutual, Milwaukee, WI 2012-16
- **CALS Albert J. and Adelaide E. Riker Award** – University of Wisconsin- Madison, College of Agricultural and Life Science 2012-13

Skills

- **Language:** Spanish (conversational fluency)
- **Marketing and branding:** brand development, strategic planning, project management, online presence growth and development (website building, design, maintenance; social media development)
- **Communication:** science communication, scientific writing, oral presentation development and training, visual design
- **Leadership:** training and development, innovation, growth strategies
- **Research techniques:** mammalian and bacterial cell culture, protein/RNA techniques, bacterial cloning, viral transfection, mouse husbandry and surgery, flow cytometry (FACS), PCR, quantitative and statistical analysis, use of photographic analysis programs
- **Training Programs and Conferences:**
 - *Portal to the Public outreach training*; Portal to the Public and Institute for Learning Innovation via Mayborn Museum [01/2019]
 - Informal Science Education Association of Texas conference [02/2020, 03/2021]
 - *Science Talk* [04/2019, 04/2021]
 - *On the Spot Feedback training*; NSF award #1811022; Astronomical Society of the Pacific, Portal to the Public at the Institute for Learning Innovation, the STEM Research Center at Oregon State University, and the National Optical Astronomy Observatory [11/2020]