

**Jason Kenealey**  
Brigham Young University  
Associate Professor  
LS: Nutrition, Dietetics, and Food Science  
(801) 422-6671  
[jason\\_kenealey@byu.edu](mailto:jason_kenealey@byu.edu)

## Education

Doctor, University of Wisconsin-Madison, 2011.

Major: Biomolecular Chemistry

Dissertation Title: Molecular mechanisms of potential chemotherapeutic non-toxic natural products

Bachelor, Brigham Young University, 2005.

Major: Biochemistry

## Professional Memberships

The American Society for Pharmacology and Experimental Therapeutics (ASPET). (2018 - Present).

Institute of Food Technologists. (2017 - Present).

BYU Cancer Research Center. (2014 - Present).

American Society for Biochemists and Molecular Biologists. (2013 - Present).

The Association for Research in Vision and Ophthalmology. (2011 - 2015).

## Consulting

Hyacinth Protein, Twin Falls, ID. (2022 - Present).

## Publications

Hansen, L., Transtrum, M. K., & Kenealey, J. D. (2021). Simultaneous determination of equilibrium constants, enthalpy changes and stoichiometries by titration calorimetry. In *GIBBS ENERGY AND HELMHOLTZ ENERGY: Liquids Solutions and Vapours*.

Allen, M. M., Pike, O. A., Kenealey, J. D., & Dunn, M. L. (2021). Metabolomics of acid whey derived from Greek yogurt. *Journal of Dairy Science*, 104(11), 11401–11412. <https://doi.org/10.3168/jds.2021-20442>

Chan, W. K. D., Benjamin, H., Kaliappan, A., Garbett, N., Hansen, L., & Kenealey, J. D. Employing Calorimetric Methods to Determine the Mechanism of the Invertase Maximal Activity Delay. *ACS Food Sci. Technol.*

Parsons, K., Brown, L., Hannah, C., Eliza, A., McCammon, E., Clark, G., Oblad, R., & Kenealey, J. D. Gluten cross-contact from common food practices and preparations. *Clinical Nutrition*.

Hutchins, D., Noh, J., & Kenealey, J. D. Activity, stability, and binding capacity of  $\beta$ -galactosidase immobilized on electrospun nylon-6 fiber membrane. *Journal of Dairy Science*.

Asay, S., Graham, A., Hollingsworth, S., Barnes, B., Oblad, R. V., Michaelis, D. J., & Kenealey, J. D. (2020).  $\gamma$ -Tocotrienol and  $\alpha$ -Tocopherol Ether Acetate Enhance Docetaxel Activity in Drug-Resistant Prostate Cancer Cells. *Molecules*, 25(2). <https://doi.org/10.3390/molecules25020398>

Andrus, M. B., Kenealey, J. D., Peterson, J. A., & Crowther, C. M. (2019). Resveratrol Derivatives Increase Cytosolic Calcium by Inhibiting Plasma Membrane ATPase and Inducing Calcium Release from the Endoplasmic Reticulum in Prostate Cancer Cells. *Biochemistry and Biophysics Reports*, 19, 100667 (1–100667 6).

- Chan, D., Hansen, L., & Kenealey, J. D. Measuring Enzymatic Stability by Isothermal Titration Calorimetry. *Journal of Visual Experiments*.
- Transtrum, M. K., Hansen, L. D., Mason, M., Scampicchio, M., Quinn, C. F., Baker, N., & Kenealey, J. D. (2018). Calorimetric Methods for Measuring Stability and Reusability of Membrane Immobilized Enzymes. *Journal of Food Science*, 83, 326–331.
- Oblad, R., Doughty, H., Lawson, J. S., Christensen, M. J., & Kenealey, J. D. (2018). Application of Mixture Design Response Surface Methodology for Combination Chemotherapy in PC-3 Human Prostate Cancer Cells. *Molecular Pharmacology*, 94(2), 907–916.
- Mason, M., Scampicchio, M., Quinn, C. F., Transtrum, M. K., Hansen, L., & Kenealey, J. D. (2017). Stability and Reusability of Invertase Immobilized on Nylon-6 Nanofiber Membrane Measured by Isothermal Titration Calorimetry (ITC). *JFS: Food Engineering, Materials Science, and Nanotechnology*.
- Peterson, J. A., Doughty, H. P., Eells, A. J., Johnson, T. A., Hastings, J. P., Crowther, C. M., Andrus, M. B., & Kenealey, J. D. (2017). The effects of 4'-esterified resveratrol derivatives on calcium dynamics in breast cancer cells. *MDPI - Molecules*, 22(11). <https://doi.org/10.3390/molecules22111968>
- Hastings, J., & Kenealey, J. (2017). *Avenanthramide-C reduces the viability of MDA-MB-231 breast cancer cells through an apoptotic mechanism*. 17(1). <https://doi.org/10.1186/s12935-017-0464-0>
- Peterson, J., Oblad, R., Mecham, J., & Kenealey, J. D. Resveratrol inhibits plasma membrane Ca<sup>2+</sup>-ATPase inducing an increase in cytoplasmic calcium. *Biochemistry and Biophysical Reports*, 7, 453–462.
- Van Ginkel, P. R., Yam, M. B., Bhattacharya, S., Polans, A. S., & Kenealey, J. D. Natural products induce a G protein-mediated calcium pathway activating p53 in cancer cells. *Toxicology and Applied Pharmacology*.
- Kenealey, J. D., Subramanian, P., Comitato, A., Bullock, J., Keehan, L., Polato, F., Hoover, D., Maringo, V., & Becerra, S. P. Small Retinoprotective Peptides Reveal a Receptor-binding Region on Pigment Epithelium-derived Factor. *The Journal of Biological Chemistry*.
- Kenealey, J. D., Darjatmoko, S., Wang, S., Azari, A., Farnoodian, M., Kanavi, M., Van Ginkel, P., Albert, D., Sheibani, N., & Polans, A. S. (2014). The Sustained Delivery of Resveratrol or a Defined Grape Powder Inhibits New Blood Vessel Formation in a Mouse Model of Choroidal Neovascularization. *Molecules*.
- Subramanian, P., Locatelli-Hoops, S., Kenealey, J. D., DesJardin, J., Notari, L., & Becerra, S. P. (2013). Pigment Epithelium-derived Factor (PEDF) Prevents Retinal Cell Death via Pigment Epithelium-derived Factor-R (PEDF-R): Identification of a Functional Ligand Binding Site. *The Journal of Biological Chemistry*.
- Kenealey, J. D., Colley, N. J., & Polans, A. S. (2011). Calcium in Vision. In E. A. P. Robert H. Kretsinger Vladimir N. Uversky (Ed.), *Encyclopedia of Metalloproteins: Vol. 10* (III). Springer Reference.
- Johnson, J. L., Kenealey, J. D., Hilton, R. J., Brosnahan, D., Watt, R. K., & Watt, G. D. (2011). Non-reductive iron release from horse spleen ferritin using desferoxamine chelation. *Journal of Inorganic Biochemistry*, 105(2), 202–207.
- Kenealey, J. D., Subramanian, L., Van Ginkel, P. R., Darjatmoko, S., Lindstrom, M. J., Ghosh, S. K., Song, Z., Hsung, R. P., Kwon, G. S., Eliceiri, K. W., Albert, D. M., & Polans, A. S. (2011). Resveratrol Metabolites Do Not Elicit Early Pro-apoptotic Mechanisms in Neuroblastoma Cells. *J Agric Food Chem.*, 59(9), 4979–4986.
- Subramanian, L., Youssef, S., Bhattacharya, S., Kenealey, J. D., Polans, A. S., & van Ginkel, P. R. (2010). Resveratrol: challenges in translation to the clinic -- a critical discussion. *Clin Cancer Res.*, 16(24), 5942–5948.
- Wilson, P. E., Nyborg, A. C., Kenealey, J. D., Lowery, T. J., Crawford, K., King, C. R., Engan, A. J., Johnson, J. L., & Watt, G. D. (2006). Evidence for a synergistic salt-protein interaction -- complex patterns of activation vs. inhibition of nitrogenase by salt. *Biophys Chem.*, 122(3), 184–194.

## Presentations

- Kenealey, J. D., International Society of Biological Calorimetry, "Measuring Protein Bar Hardening Reactions in a Calorimetry," Vilnius, Lithuania. (June 2022).

- McGowen, I., Kenealey, J. D., International Society of Biological Calorimetry, "Using Isothermal Titration Calorimetry to measure Metabolic Activity of Cancer Cells," Vilnius, Lithuania. (June 2022).
- Jarrard, T., Kenealey, J. D., Experimental Biology, "Measuring beta galactosidase activity in dairy fluids using Isothermal titration calorimetry," American Society for Biochemistry and Molecular Biology, Philadelphia. (April 2022).
- Szabo, S. D. (Author Only), Merrill, B. R. (Author Only), Jefferies, L. K. (Author Only), Kenealey, J. D. (Author Only), Pike, O. A. (Author Only), Dunn, M. L. (Presenter & Author), Cereals & Grains Association Annual Meeting, "A Rapid Spectrophotometric Assay for Quantifying Seed Coat Saponins in Quinoa," Cereals & Grains Association/AACCI, On-Line. (October 2020).
- Chan, D. (Presenter & Author), Noh, J. (Author Only), Mason, M. (Author Only), Kenealey, J. (Author Only), Experimental Biology, "Determining the Cause of Peak Invertase Activity Delay using Isothermal Titration Calorimetry," American Society for Biochemists and Molecular Biologists, Orlando, FL. (April 2019).
- Asay, S. (Presenter & Author), Graham, A., Oblad, R., Kenealey, J. (Author Only), Experimental Biology, " $\gamma$ -Tocotrienol and  $\alpha$ -Tocopheryloxyacetic Acid Increase the Effectiveness of Docetaxel Treatment of PC-3 Prostate Cancer Cells and Docetaxel-resistant PC-3 Cells," Brigham Young University, Orlando, FL. (April 2019).
- Kenealey, J., Chan, D. (Author Only), Calorimetry and Chromatography in Nutraceuticals, "Using Isothermal Titration Calorimetry to Determine Enzymatic Stability in Enzymes used in Food Production," TA Instruments, Lindon, UT. (November 2018).
- Chan, D. (Presenter & Author), Anderson, J. (Author Only), Kenealey, J. (Author Only), Experimental Biology, "Determining Invertase Enzyme Activity Using Isothermal Titration Calorimetry," Brigham Young University, San Diego, CA. (April 2018).
- Graham, A. (Presenter & Author), Oblad, R. (Author Only), Barnes, B. (Author Only), Harmon, M. (Author Only), Kenealey, J. (Author Only), Experimental Biology, "Vitamin E analogs as chemotherapeutic agents and potentiators of chemotherapy in PC-3 human prostate cancer cells," American Society for Biochemists and Molecular Biologists, San Diego, CA. (April 2018).
- Baker, N. (Presenter & Author), Kenealey, J. (Author Only), Utah Conference for Undergraduate Research, "Characterizing Cancer Cell Metabolism Using Isothermal Titration Calorimetry," Cedar City, UT. (February 2018).
- Anderson, J. (Presenter & Author), Kenealey, J. (Author Only), Utah Conference for Undergraduate Research, "Determining Enzyme Kinetics of Lactase Immobilized on Nanofibers.," Cedar City, UT. (February 2018).
- Hastings, J., Kenealey, J. D., Experimental Biology, "Chemotherapeutic Effects of Avenanthramides on Breast Cancer Cells." (April 2017).
- Perterson, J., Kenealey, J. D., Experimental Biology, "Effects of Charged Resveratrol Derivatives on Ca<sup>2+</sup> Homeostasis in Human Cancer Cells." (April 2017).
- Oblad, R., Kenealey, J. D., Experimental Biology, "Response Surface Methodology as a Model for Combination Drug Therapy in Human Prostate Cancer Cells," American Society of Biochemistry and Molecular Biology. (April 2017).
- Hastings, J., Kenealey, J. D., UCUR, "Avenanthramides: Determining the Pathway of Novel Chemotherapeutics," Orem, UT. (February 2017).
- Chu, A., Lake, I., Baker, N., Kenealey, J. D., UCUR, "Expression and characterization of the oat CsIF6 mixed-linkage glucan synthase," Orem, UT. (February 2017).
- Kenealey, J. D., Experimental Biology, ". The mediation of intracellular calcium by resveratrol.," American Society for Biochemistry and Molecular Biology, San Diego, CA. (April 2016).
- Cranney, C. (Presenter & Author), Kenealey, J. D., Experimental Biology, "Comparing Gene Expression Between Resveratrol Sensitive and Insensitive Cells Using RNA-Sequencing Methods.," American Society for Biochemistry and Molecular Biology, San Diego, CA. (April 2016).

- Oblad, R. (Presenter & Author), Dixon, A. (Author Only), Bernhisel, A. (Author Only), Eggett, D. L., Kenealey, J. D., Experimental Biology, "Drug treatment of prostate cancer cells using a combination of naturally occurring compounds leads to apoptosis.," American Society for Biochemistry and Molecular Biology, San Diego, CA. (April 2016).
- Peterson, J. (Presenter & Author), Kenealey, J. D., Experimental Biology, "Effects of Resveratrol Derivatives on Plasma Membrane Ca<sup>2+</sup>-ATPase and Ca<sup>2+</sup> Homeostasis in MDA-MB-231 Human Breast Cancer Cells.," American Society for Biochemistry and Molecular Biology, San Diego, CA. (April 2016).
- Kenealey, J. D. (Presenter & Author), Petersen, J. (Author Only), Oblad, R. (Author Only), Experimental Biology, "Resveratrol Inhibits PMCA activity in Breast Cancer Cells," American Society for Biochemistry and Molecular Biology, Boston, MA. (April 2015).
- Kenealey, J. D. (Presenter & Author), ARVO, "Mapping the Receptor Binding Site on PEDF: Implications for a Neurotrophic Role of PEDF-R," ARVO, Seattle, WA. (May 2013).
- Kenealey, J. D. (Presenter & Author), 15th International Symposium on Retinal Degeneration, "Mapping the Putative Neurotrophic Receptor Binding Domain on Pigment Epithelium-derived Factor," Bad Goegging, Germany. (July 2012).
- Kenealey, J. D. (Presenter & Author), MathBio: Image Symposium, "Resveratrol: Discovering Chemotherapy by Fast Chemistry.," Madison, WI. (April 2009).
- Kenealey, J. D. (Presenter & Author), 10th meeting of the European Calcium Society, "Resveratrol Modulates Intracellular Calcium by Opening the 1,4,5 triphosphate Inositol Receptor in Endothelial Cells.," Leuven, Belgium. (July 2008).

## **Contract, Fellowships, Grants and Sponsored Research**

- Kenealey, J. D. (Principal Investigator), "Grants on Edge: Develop a fuel cell that can convert lactose into electricity using a novel catalyst to oxidize the carbohydrate," Sponsored by BYU-College of Life Sciences, College, \$15,000.00. (October 2021 - October 2023).
- Kenealey, J. D. (Principal Investigator), "College Mentoring (CEMENT) research award," Sponsored by BYU-College of Life Sciences, College, \$5,000.00. (November 2019 - November 2020).
- Kenealey, J. D. (Principal Investigator), "The Chemotherapeutic Mechanisms of Vitamin E Analogs in Prostate Cancer," Sponsored by BYU-ORCA, University, \$20,000.00. (January 2018 - January 2020).
- Kenealey, J. D. (Principal Investigator), "Technology Trans Grant-Process for economical, enzyme-catalyzed processing of whey permeate for production of commodity chemicals and fuels.," Sponsored by BYU-College of Life Sciences, College, \$10,000.00. (January 2019).
- "New faculty startup research funding-3of 3 years," Sponsored by BYU-College of Life Sciences, College, \$20,000.00. (September 2016 - September 2018).
- Kenealey, J. D., "New faculty startup research funding-2nd of 3 years," Sponsored by BYU - College of Life Sciences, College, \$20,000.00. (August 2015 - August 2017).
- Kenealey, J. D., "New faculty startup research funding-1st of 3 years," Sponsored by BYU-College of Life Sciences, College, \$20,000.00. (September 2014 - September 2016).

## **Intellectual Property**

Hansen, L., Aanderud, Z. T., Watt, G. D., Kenealey, J. D., Paxton, W.

## **Teaching Experience**

NDFS 697R, section 011, Research. 3 credit hours. 1 enrolled.

NDFS 697R, section 011, Research. 3 credit hours. 1 enrolled.

UNIV 216R, section 001, Topics: Biological Sciences. 3 credit hours. 42 enrolled.

NDFS 494R, section 008, Undergrad Research in N D F S. 3 credit hours. 1 enrolled.

NDFS 602, section 001, Advanced Human Nutrition 2. 3 credit hours. 4 enrolled.

IAS 201R, section 018, Cultural Survey. 1 credit hours. 41 enrolled.

NDFS 699R, section 002, Master's Thesis. 9 credit hours. 1 enrolled.

NDFS 200, section 001, Nutrient Metabolism. 3 credit hours. 52 enrolled.

NDFS 333, section 001, Nutrigenetics/Nutrigenomics. 3 credit hours. 4 enrolled.

NDFS 697R, section 002, Research. 3 credit hours. 1 enrolled.

NDFS 494R, section 009, Undergrad Research in N D F S. 3 credit hours. 4 enrolled.

HONRS 220, section 002, Unexpect Connect: Biol-Letters. 3 credit hours. 40 enrolled.

NDFS 200, section 001, Nutrient Metabolism. 3 credit hours. 42 enrolled.

NDFS 294, section 001, Nutrition Research Fundamentals. 1 credit hours. 21 enrolled.

NDFS 697R, section 003, Research. 3 credit hours. 1 enrolled.

NDFS 494R, section 009, Undergrad Research in N D F S. 3 credit hours. 2 enrolled.

NDFS 699R, section 005, Master's Thesis. 9 credit hours. 1 enrolled.

NDFS 494R, section 009, Undergrad Research in N D F S. 3 credit hours. 2 enrolled.

NDFS 494R, section 008, Undergrad Research in N D F S. 3 credit hours. 3 enrolled.

NDFS 601, section 001, Advanced Human Nutrition 1. 3 credit hours. 4 enrolled.

NDFS 699R, section 002, Master's Thesis. 9 credit hours. 1 enrolled.

NDFS 200, section 001, Nutrient Metabolism. 3 credit hours. 46 enrolled.

NDFS 333, section 001, Nutrigenetics/Nutrigenomics. 3 credit hours. 5 enrolled.

NDFS 494R, section 009, Undergrad Research in N D F S. 3 credit hours. 4 enrolled.

HONRS 221, section 001, Unexpect Connect: Biol-Arts. 3 credit hours. 37 enrolled.

NDFS 699R, section 002, Master's Thesis. 9 credit hours. 1 enrolled.

NDFS 200, section 001, Nutrient Metabolism. 3 credit hours. 49 enrolled.

NDFS 294, section 001, Nutrition Research Fundamentals. 1 credit hours. 35 enrolled.

NDFS 494R, section 009, Undergrad Research in N D F S. 3 credit hours. 1 enrolled.

NDFS 494R, section 008, Undergrad Research in N D F S. 3 credit hours. 2 enrolled.

NDFS 602, section 001, Advanced Human Nutrition 2. 3 credit hours. 5 enrolled.

NDFS 200, section 001, Nutrient Metabolism. 3 credit hours. 71 enrolled.

NDFS 333, section 001, Nutrigenetics/Nutrigenomics. 3 credit hours. 4 enrolled.

NDFS 697R, section 002, Research. 3 credit hours. 1 enrolled.

NDFS 494R, section 009, Undergrad Research in N D F S. 3 credit hours. 6 enrolled.

NDFS 601, section 001, Advanced Human Nutrition 1. 3 credit hours. 1 enrolled.

NDFS 699R, section 002, Master's Thesis. 9 credit hours. 1 enrolled.

NDFS 200, section 001, Nutrient Metabolism. 3 credit hours. 63 enrolled.

NDFS 294, section 001, Nutrition Research Fundamentals. 1 credit hours. 26 enrolled.

NDFS 494R, section 009, Undergrad Research in N D F S. 3 credit hours. 6 enrolled.

NDFS 699R, section 005, Master's Thesis. 9 credit hours. 1 enrolled.

NDFS 494R, section 009, Undergrad Research in N D F S. 3 credit hours. 1 enrolled.

NDFS 699R, section 006, Master's Thesis. 9 credit hours. 3 enrolled.

NDFS 494R, section 008, Undergrad Research in N D F S. 3 credit hours. 1 enrolled.

NDFS 601, section 001, Advanced Human Nutrition 1. 3 credit hours. 4 enrolled.

NDFS 699R, section 002, Master's Thesis. 9 credit hours. 2 enrolled.

NDFS 200, section 001, Nutrient Metabolism. 3 credit hours. 69 enrolled.

NDFS 333, section 001, Nutrigenetics/Nutrigenomics. 3 credit hours. 7 enrolled.

NDFS 494R, section 009, Undergrad Research in N D F S. 3 credit hours. 10 enrolled.

NDFS 699R, section 002, Master's Thesis. 9 credit hours. 1 enrolled.

NDFS 200, section 001, Nutrient Metabolism. 3 credit hours. 49 enrolled.

NDFS 294, section 001, Nutrition Research Fundamentals. 1 credit hours. 29 enrolled.

NDFS 494R, section 009, Undergrad Research in N D F S. 3 credit hours. 12 enrolled.

NDFS 699R, section 005, Master's Thesis. 9 credit hours. 1 enrolled.

NDFS 494R, section 009, Undergrad Research in N D F S. 3 credit hours. 6 enrolled.

NDFS 699R, section 004, Master's Thesis. 9 credit hours. 1 enrolled.

NDFS 494R, section 008, Undergrad Research in N D F S. 3 credit hours. 9 enrolled.

NDFS 602, section 002, Advanced Human Nutrition 2. 3 credit hours. 1 enrolled.

NDFS 699R, section 002, Master's Thesis. 9 credit hours. 1 enrolled.

NDFS 434, section 001, Nutr Bio-organic Chemistry. 4 credit hours. 41 enrolled.

NDFS 200, section 001, Nutrient Metabolism. 3 credit hours. 58 enrolled.

NDFS 494R, section 009, Undergrad Research in N D F S. 3 credit hours. 9 enrolled.

NDFS 399R, section 006, Acad Internship: Nutritnl Sci. 9 credit hours. 1 enrolled.

NDFS 699R, section 002, Master's Thesis. 9 credit hours. 1 enrolled.

NDFS 200, section 001, Nutrient Metabolism. 3 credit hours. 63 enrolled.

NDFS 294, section 001, Nutrition Research Fundamentals. 1 credit hours. 32 enrolled.

NDFS 494R, section 009, Undergrad Research in N D F S. 3 credit hours. 7 enrolled.

LFSCI 199R, section 004, Nonresearch Academic Internshp. 3 credit hours. 5 enrolled.

NDFS 200, section 001, Nutrient Metabolism. 3 credit hours. 22 enrolled.

NDFS 494R, section 008, Undergrad Research in N D F S. 3 credit hours. 1 enrolled.

NDFS 602, section 001, Advanced Human Nutrition 2. 3 credit hours. 3 enrolled.

NDFS 434, section 001, Nutr Bio-organic Chemistry. 4 credit hours. 35 enrolled.

NDFS 494R, section 009, Undergrad Research in N D F S. 3 credit hours. 9 enrolled.

NDFS 699R, section 2, Master's Thesis. 9 credit hours. 1 enrolled.

NDFS 200, section 001, Nutrient Metabolism. 3 credit hours. 74 enrolled.

NDFS 294, section 001, Nutrition Research Fundamentals. 1 credit hours. 20 enrolled.  
NDFS 494R, section 009, Undergrad Research in N D F S. 3 credit hours. 6 enrolled.  
NDFS 200, section 001, Nutrient Metabolism. 3 credit hours. 46 enrolled.  
NDFS 494R, section 008, Undergrad Research in N D F S. 3 credit hours. 2 enrolled.  
NDFS 602, section 001, Advanced Human Nutrition 2. 3 credit hours. 2 enrolled.  
NDFS 434, section 001, Nutr Bio-organic Chemistry. 4 credit hours. 35 enrolled.  
NDFS 494R, section 9, Undergrad Research in N D F S. 3 credit hours. 1 enrolled.  
NDFS 200, section 001, Nutrient Metabolism. 3 credit hours. 79 enrolled.  
NDFS 294, section 001, Nutrition Research Fundamentals. 1 credit hours. 12 enrolled.  
NDFS 631R, section 002, Selected Topics in FSN. 2 credit hours. 1 enrolled.  
NDFS 494R, section 009, Undergrad Research in N D F S. 3 credit hours. 3 enrolled.  
NDFS 200, section 001, Nutrient Metabolism. 3 credit hours. 27 enrolled.  
NDFS 602, section 001, Advanced Human Nutrition 2. 3 credit hours. 5 enrolled.  
NDFS 434, section 001, Nutr Bio-organic Chemistry. 4 credit hours. 26 enrolled.  
NDFS 494R, section 009, Undergrad Research in N D F S. 3 credit hours. 5 enrolled.  
NDFS 200, section 001, Nutrient Metabolism. 3 credit hours. 97 enrolled.  
NDFS 294, section 001, Nutrition Research Fundamentals. 1 credit hours. 19 enrolled.  
NDFS 494R, section 12, Undergrad Research in N D F S. 3 credit hours. 1 enrolled.  
NDFS 631R, section 002, Protein. 2 credit hours. 5 enrolled.  
NDFS 631R, section 001, Selected Topics in FSN. 2 credit hours. 5 enrolled.  
NDFS 494R, section 011, Undergrad Research in N D F S. 3 credit hours. 5 enrolled.  
NDFS 494R, section 012, Undergrad Research in N D F S. 3 credit hours. 1 enrolled.

### **Directed Student Learning**

Dissertation, "Enzymatic synthesis of rare sugars using lactose as a substrate." (2022 - Present).  
Advised: Melinda Moss

Mentored Research, "Metabolism of cancer cells measured using calorimetry." (2022 - Present).  
Advised: Christian Packer

Dissertation, "Using differential scanning calorimetry to quantify proteins in milk and blood." (September 2022 - Present).  
Advised: Charity Conlin

Mentored Research, "Biophysical characterization of whey protein." (September 2022 - Present).  
Advised: Mia Thang

Mentored Research, "Using MDRSM to measure the effect of combinations of natural compounds on prostate cancer." (September 2020 - August 2022).  
Advised: Charity Conlin

Mentored Research, "Anti tumor activity of milk proteins." (2021 - Present).  
Advised: Matt Clive

Master's Thesis, "Using MDRSM to determine the efficacy of compounds found in chinese medicine." (June 2020 - December 2021).  
Advised: Ian Berlin

Mentored Research, "Utilizing whey permeate to create electricity using a heterogenous methyl viologen catalyst." (February 2019 - August 2021).  
Advised: Bryan McOmber

Master's Thesis, "Screening for a Diabetes Cure: Plant Based Antioxidants May Benefit the Beta Cell." (September 2018 - June 2021).  
Advised: Emily Orton

Master's Thesis, "Optimization of immobilized enzyme mixture to hydrolyze and isomerize whey permeate." (September 2019 - May 2021).  
Advised: Eliza Brock

Master's Thesis. (September 2018 - October 2020).  
Advised: Sydney Szabo

Master's Thesis, "Metabolomics of acid whey derived from Greek yogurt.." (September 2018 - October 2020).  
Advised: Muriel Allen

Mentored Research, "Measuring Lactase Activity using Isothermal Titration Calorimetry." (March 2018 - October 2020).  
Advised: Jihoon Noh

Mentored Research, "Using Vitamin E Compounds to Treat Prostate Cancer Stem Cells." (January 2018 - August 2020).  
Advised: Spencer Asay

Mentored Research, "Measuring Invertase Activity using Isothermal Titration Calorimetry." (September 2018 - June 2020).  
Advised: Ben Hicks

Master's Thesis, "Optimizing Lactase Immobilization for use to hydrolyze Whey Permeate.." (September 2017 - June 2020).  
Advised: Deb Hutchins

Mentored Research, "Measuring Lactase Activity using Isothermal Titration Calorimetry." (September 2018 - May 2020).  
Advised: Kaylee Lebaron

Mentored Research, "Mixture design response surface methodolgy applied to vitamin E chemotherapy." (September 2018 - April 2020).  
Advised: Elijah Lindstrom

Teaching Assistant. (September 2018 - April 2020).  
Advised: Kara Rose

Mentored Research, "Gluten contamination in common food practices." (June 2019 - March 2020).  
Advised: Katharine Parsons

Dissertation, "Identification and Characterization of Avena Sativa  $\alpha$ -glucan synthase.." (August 2015 - March 2020).  
Advised: Melissa Coon

Mentored Research. (January 2020 - Present).  
Advised: Jaela Neff

Mentored Research, "Applications of MDRSM in cancer research." (January 2020 - Present).  
Advised: Spencer Shin

Mentored Research, "Gluten Cross Contamination." (January 2020 - Present).  
Advised: Eliza Allen



Mentored Research, "The effect of vitamin E compounds on prostate cancer stem cell markers." (January 2019 - January 2020).  
Advised: Mason Rankin

Mentored Research, "The Mechanism of Invertase Catalysis." (January 2018 - August 2019).  
Advised: Dindi Chan

Teaching Assistant. (January 2019 - April 2019).  
Advised: Emily Orton

Teaching Assistant. (September 2018 - April 2019).  
Advised: Haylee Crandall

Mentored Research, "Gluten contamination in common food practices." (April 2018 - April 2019).  
Advised: Hanna Allen

Dissertation, "Calcium Analysis of Listeria Specific Helper T cells and nBMP2 Macrophages." (September 2015 - April 2019).  
Advised: Claudia Tellez

Mentored Research, "Vitamin E Analogs to Treat Prostate Cancer Cells." (January 2018 - December 2018).  
Advised: Lexady Burke

Teaching Assistant. (September 2017 - December 2018).  
Advised: Robert Drury

Teaching Assistant. (September 2017 - December 2018).  
Advised: Shannon Barham

Mentored Research, "Combinations of Vitamin E Compounds with Docetaxel to Treat Prostate Cancer." (January 2017 - December 2018).  
Advised: Andrew Graham

Mentored Research, "Knocking down PMCA in prostate cancer cells to identify what isoforms are binding to resveratrol." (September 2017 - September 2018).  
Advised: Amaya Miller

Mentored Research, "Measuring Lactase Activity using Isothermal Titration Calorimetry." (September 2017 - May 2018).  
Advised: Jeremy Anderson

Mentored Research, "Effects of Mixtures of Vitamin E and Docetaxel on Prostate Cancer Cells." (January 2017 - May 2018).  
Advised: Bradley Barnes

Mentored Research, "Measuring Cancer Cell Metabolic Activity using Isothermal Titration Calorimetry." (January 2017 - May 2018).  
Advised: Nick Baker

Mentored Research, "Measuring Lactase Activity using Isothermal Titration Calorimetry." (January 2017 - May 2018).  
Advised: Sangji Lee

Mentored Research, "Treating Prostate Cancer with Natural Products." (January 2017 - May 2018).  
Advised: Hayden Doughty

Teaching Assistant. (January 2018 - April 2018).  
Advised: Brad Barnes

Teaching Assistant. (January 2018 - April 2018).  
Advised: Richard Oblad

Mentored Research, "Gluten contamination in common food practices." (September 2017 - April 2018).  
Advised: Elyse McCammon

Mentored Research, "Expression and Purification of Oat CslF6." (January 2017 - April 2018).  
Advised: Ian Lake

Mentored Research, "Expression and Purification of Oat CslF6." (September 2016 - April 2018).  
Advised: Paul Wagstaff

Master's Thesis, "Combination modeling of standard chemotherapeutics and natural products by surface methodology.." (September 2015 - April 2018).  
Advised: Richard Oblad

Mentored Research, "Changes in Protein Expression in Breast Cancer Cells Following Resveratrol Treatment." (September 2016 - December 2017).  
Advised: Tyler Terry

Teaching Assistant. (September 2016 - December 2017).  
Advised: Mackenzie Jones

Master's Thesis, "The effects of cocoa flavanol monomer and polymer fractions on  $\beta$ -cell mass and function.." (September 2015 - August 2017).  
Advised: Tommy Rowley

Mentored Research, "Vitamin E Analogs to Treat Prostate Cancer Cells." (September 2016 - May 2017).  
Advised: Molli Harmon

Teaching Assistant. (January 2017 - April 2017).  
Advised: Annica Cooper

Teaching Assistant. (January 2017 - April 2017).  
Advised: Nicholas Bradford

Teaching Assistant. (September 2015 - December 2016).  
Advised: Erin Ogden

Mentored Research, "RNA Seq of Resveratrol Resistant Breast Cancer Cells." (September 2015 - August 2016).  
Advised: Caleb Cranney

Mentored Research, "Binding of resveratrol to receptor soluble domain." (September 2015 - June 2016).  
Advised: Joseph Moffit

Mentored Research, "Apoptotic Effects of Avananthramides on Breast Cancer Cells." (January 2015 - May 2016).  
Advised: Jordan Hastings

Mentored Research, "Cell-free Expression of Oat Beta-glucan Synthase." (January 2015 - May 2016).  
Advised: Alex Chu

Mentored Research, "Changes in RNA expression in Breast Cancer Cells induced by Resveratrol Derivatives." (January 2015 - May 2016).  
Advised: Austin Eells

Mentored Research, "Changes in RNA expression in Breast Cancer Cells induced by Resveratrol Derivatives." (January 2015 - May 2016).  
Advised: Trent Johnson

Mentored Research, "Resvertrol binding partners in Breast Cancer Cells." (August 2014 - May 2016).  
Advised: Jeff Mecham

Teaching Assistant. (January 2016 - April 2016).  
Advised: Allie Jensen

Teaching Assistant. (January 2016 - April 2016).  
Advised: Natalie Newton

Mentored Research, "Subcellular source of Resvertrol-induced Calcium in Breast and Prostate Cancer." (August 2015 - April 2016).  
Advised: Josh Peterson

Mentored Research, "Resveratrol-induced Calcium Signaling in Breast Cancer Cells." (July 2014 - September 2015).  
Advised: Richard Oblad

### **Professional Service**

Board Member, International Society of Biological Chemistry. (November 2020 - Present).

Reviewer, Ad Hoc Reviewer, American Chemical Society. (May 2019 - Present).

Conference-Related Role, American Society of Biochemists and Molecular Biologists. (April 2019 - Present).

Reviewer, Ad Hoc Reviewer, Multidisciplinary Digital Publishing Institute. (March 2018 - Present).

Reviewer, Ad Hoc Reviewer, American Society of Pharmacology and Experimental Therapeutics. (February 2018 - Present).

Committee/Council Chair, TA Instruments. (February 2019 - May 2020).