Teresa Te-Ying Liu

University of Wisconsin – Madison
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Education

University of Tennessee Health Science Center **Memphis, TN**
Ph.D. in Microbiology/Mycology **2008**
Dissertation: "Transcriptional regulation of azole antifungal resistance in *Candida albicans*"

Westminster College **Fulton, MO**
B.A. in Biology and Computer Science **2002**

Research Experience

University of Wisconsin – Madison **Madison, WI**
Department of Urology **2015-present**
Assistant Scientist, NIH K Career Development Award Scholar
Mentor: William A. Ricke

- Examine the contribution of steroidogenesis on benign prostatic hyperplasia disease progression
- Define specific estrogen receptor gene networks using both high-throughput genomic techniques along with receptor dimerization assays
- Study the protective effects of estrogen receptor activation on BPH disease progression

University of Pittsburgh **Pittsburgh, PA**
Departments of Urology and Pharmacology **2013-2015**
Postdoctoral Scholar, Urology T32 Trainee
Mentors: Donald B. DeFranco, Zhou Wang, A. Paula Monaghan

- Study ERβ contribution to benign prostatic hyperplasia disease progression and treatment response
- Examine apoptosis in response to 5α-reductase inhibitors and NSAIDs
- Examine alterations in steroid hormone metabolism
- Examine alterations in prostaglandin E2 accumulation
- Test possible combination treatments to enhance efficacy

University of Pittsburgh **Pittsburgh, PA**
Department of Computational and Systems Biology **2010-2013**
Postdoctoral Associate
Mentors: Bino John, Donald B. DeFranco, A. Paula Monaghan

- Identified non-coding RNAs associated with YB-1 in prostate cancer
- Identified novel non-coding RNAs associated with disease progression
- Used cellular and molecular techniques to validate RNA-seq

Carnegie Mellon University **Pittsburgh, PA**
Department of Biological Sciences **2008-2009**
Postdoctoral Research Associate
Mentor: Aaron P. Mitchell

- Examined post-transcriptional modifications on transcriptional regulators responsible for antifungal drug resistance
- Screened knockout library for changes in chemotherapeutic response

University of Tennessee Health Science Center **Memphis, TN**
Department of Pharmacy **2002-2008**
Graduate student
Advisor: P. David Rogers

- Studied antifungal drug resistance in matched susceptible and resistant patient derived samples
- Developed custom Affymetrix microarrays to study global gene expression changes
- Identified transcriptional regulators responsible for altered gene expression in the development of resistance

Honors and Awards

- CAIRIBU Best Poster, 2019
- Society for Basic Urological Research Travel Award, 2019
- University of Pittsburgh Computational and Systems Biology Best Postdoc Award, 2012
- University of Tennessee Health Science Center Student Travel Award 2007
- Graduate Student Travel Grant, American Society for Microbiology, 8th *Candida* and Candidiasis, 2006
- University of Tennessee Health Science Center Student Travel Award, 2006
- Graduate Student Travel Grant, American Society for Microbiology, 44th ICAAC, 2004

Peer-Reviewed Publications

Total citations: 1403 (determined by Google Scholar, November 13, 2019)

1. **Liu TT**, Rodgers AC, Nicholson TM, Macoska JA, Marker PC, Vezina CM, Bjorling DE, Roldan-Alzate A, Hernando D, Lloyd GL, Hacker TA, Ricke WA. Ultrasonography of the adult male urinary tract for urinary functional testing. JoVE 2019; [in press].
2. **Liu TT**, Ewald JA, Ricke EA, Bell R, Collins C, Ricke WA. Modeling human prostate cancer progression in vitro. Carcinogenesis 2019; 40(7):893-902.
3. McLean DT, Rutkowski DR, **Liu T**, Hernando D, Ricke WA, Roldan-Alzate A. MRI-based method for lower urinary tract dysfunction in adult male mice. Am J Clin Exp Urol 2019; 7(3):153-158. eCollection 2019.
4. **Liu TT**, Thomas S, McLean DT, Roldan-Alzate A, Hernando D, Ricke EA, Ricke WA. Prostate enlargement and altered urinary function are part of the aging process. Aging 2019; 11(9):2653-2669.
5. Mizoguchi S, Mori K, Wang Z, **Liu T**, Funahashi Y, Sato F, DeFranco DB, Yoshimura N, Mimata H. Effects of estrogen receptor β stimulation in a rat model of non-bacterial prostatic inflammation. Prostate 2017; 77:803-11.
6. **Liu TT**, Grubisha MJ, Frahm KA, Wendell SG, Liu J, Ricke WA, Auchus RJ, DeFranco DB. Opposing effects of COX-2 on ERβ response to 5α-reductase inhibition in prostate epithelial cells. J Biol Chem 2016; 291:14747-60.
7. **Liu TT**, Arango-Argoty G, Li Z, Lin Y, Kim SW, Dueck A, Ozsolak F, Monaghan AP, Meister G, DeFranco DB, John B. Identification of a large group of novel, short RNAs that associates with YB-1. RNA 2015; 21:1159-72.
8. Solomon JD, Heitzer MD, **Liu TT**, Beumer JH, Parise RA, Normolle DP, Leach DA, Buchanan G, Defranco DB. VDR activity is differentially affected by Hic-5 in prostate cancer and stromal cells. Mol Cancer Res 2014; 12:1166-80.
9. Lin Y, Ozsolak F, Kim SW, Arango-Argoty G, **Liu TT**, Tenebaum SA, Bailey T, Monaghan AP, Milos PM, John B. An in-depth map of polyadenylation sites in cancer. Nucleic Acids Res 2012; 40:8460-71.
10. Lis M, **Liu TT**, Barker KS, Rogers PD, Bobek LA. Antimicrobial peptide MUC7 12-mer activates the calcium/calcineurin pathway in Candida albicans. FEMS Yeast Res 2010; 10:579-86.
11. Znaidi S, Barker KS, Weber S, Alarco AM, **Liu TT**, Boucher G, Rogers PD, Raymond M. Identification of the Candida albicans Cap1p regulon. Eukaryotic Cell 2009; 8:806-20.
12. Dunkel N, **Liu TT**, Barker KS, Homayouni R, Morschhäuser J, Rogers PD. A gain-of-function

mutation in the transcription factor Upc2p causes upregulation of ergosterol biosynthesis genes and increased fluconazole resistance in a clinical Candida albicans isolate. Eukaryotic Cell 2008; 7:1180-90.
13. Morschhäuser J, Barker KS, **Liu TT**, Blaß-Warmuth J, Homayouni R, Rogers PD. The transcription factor MRR1 controls expression of the MDR1 efflux pump and mediates multidrug resistance in Candida albicans. PLoS Pathogens 2007; 3:e164.
14. **Liu TT**, Znaidi S, Barker KS, Xu L, Homayouni R, Saidane S, Morschhäuser J, Nantel A, Raymond M, Rogers PD. Genome-wide expression and location analyses of the Candida albicans Tac1p regulon. Eukaryotic Cell 2007; 49:2226-36.
15. Rogers PD, **Liu TT**, Barker KS, Hilliard GM, English BK, Thornton J, Swiatlo E, McDaniel LS. Gene expression profiling of the response of Streptococcus pneumoniae to penicillin. Journal of Antimicrobial Chemotherapy 2007; 59:616-26.
16. Barker KS, **Liu T**, Rogers PD. Coculture of THP-1 human mononuclear cells with *Candida albicans* results in pronounced changes in host gene expression. Journal of Infectious Diseases 2005; 192:901-12.
17. **Liu TT**, Lee REB, Barker KS, Lee RE, Wei L, Homayouni R, Rogers PD. Genome-wide expression profiling of the response to azole, polyene, echinocandin, and pyrimidine antifungal agents in Candida albicans. Antimicrobial Agents and Chemotherapy 2005; 49:2226-36.
18. Lee REB, **Liu TT**, Barker KS, Lee RE, Rogers PD. Genome-wide expression profiling of the response to ciclopirox olamine in Candida albicans. Journal of Antimicrobial Chemotherapy 2005; 55:655-62.

Book Chapters and Editorials

1. Ricke WA, Bruskewitz RC, **Liu TT**. Targeting a fibrotic bottleneck may provide an opening in the treatment of LUTS. *Am J Physiol Renal Physiol*. 2019; 316(6):F1091-F1093.
2. **Liu TT**, Li Z, and John B. Enhanced detection of small RNAs using a non-radioactive approach. In: Werner, A, ed. *Animal Endo-siRNAs: Methods and Protocols*. New York, NY: Humana Press; 2014.

Conferences

** Denotes oral presentation given by T.T. Liu*

1. **Liu TT**, Ricke EA, Strand D, Dhir R, Ricke WA. Estrogen mediated racial disparity in men with benign prostatic hyperplasia. CAIRIBU. Kansas City, MO, 2019.
2. Myklebust LK, **Liu TT**, Ricke WA. Aging exacerbates lower urinary tract dysfunction and causes epigenetic modifications altering the sex steroid hormone environment in mice. CAIRIBU. Kansas City, MO, 2019.
3. **Liu TT** and Ricke WA. Aging alters steroid hormone metabolism and exacerbates lower urinary tract dysfunction in mice. GSA. Austin, TX, 2019.
4. **Liu TT**, Ricke EA, Strand D, Dhir R, Ricke WA. Estrogen mediated racial disparity in men with benign prostatic hyperplasia. SBUR. New Orleans, LA, 2019.
5. **Liu TT**, Jeong CH, Ricke WA. The impact of age on the lower urinary tract of mice. O'Brien Research Center of Excellence Spring Symposium – Molecular and Cellular Mechanisms of Fibrosis. Madison, WI, 2019.
1. **Liu TT**, Jeong CH, Ricke WA. The impact of age on the lower urinary tract of mice. CAIRIBU. 2018.
2. **Liu TT**, Jeong CH, Ricke WA. The impact of age on the lower urinary tract of mice. SBUR. 2018.
3. **Liu TT***, Thomas S, Jeong CH, Walker I, Ricke EA, Ricke WA. Altered steroidogenesis on estrogen receptor activation in benign prostatic hyperplasia. ENDO. 2018.
4. **Liu TT**, Jeong CH, Walker I, Ricke EA, Ricke WA. The impact of altered steroidogenesis on estrogen receptor activation in benign prostatic hyperplasia progression. SBUR. 2017.
5. **Liu TT**, Wynder JL, James TT, Macoska J, Ricke WA. The role of estrogen receptor activation in benign prostatic hyperplasia. AUA. 2017.
6. James TT, Wynder JL, **Liu TT**, Xu W, Ricke WA. Bisphenol A induces estrogen receptor α and β signaling in human prostate cells. SOT. 2017.

7. **Liu TT**, Wynder JL, James TT, Macoska J, Ricke WA. The role of estrogen receptor activation in benign prostatic hyperplasia. SBUR Fall Symposium. 2016.
8. Wynder J, Nicholson T, Vellky J, Jeong C, **Liu T**, vom Saal F, Wood R, Ricke WA. Investigating the role of bisphenol-A in benign prostatic hyperplasia. Society of Toxicology. 2016.
9. **Liu TT**, Grubisha MJ, Wendell SG, Ricke W, Auchus RJ, DeFranco DB. COX-2 mediated inflammation alters intraprostatic steroid homeostasis in benign prostatic hyperplasia. Integrated Systems Biology Symposia. 2015.
10. **Liu TT**, Grubisha MJ, Wendell SG, Ricke W, Auchus RJ, DeFranco DB. COX-2 mediated inflammation alters intraprostatic steroid homeostasis in benign prostatic hyperplasia. SBUR Fall Meeting. 2014.
11. **Liu TT**, Arango-Argoty G, Li Z, Lin Y, Kim SW, Dueck A, Ozsolak F, Monaghan AP, Meister G, DeFranco DB, John B. Non-coding RNAs that associate with YB-1 regulates proliferation in prostate cancer cells. Cell Symposia: Regulatory RNAs. 2014.
12. **Liu TT**, Grubisha MJ, Wendell SG, Ricke W, Auchus RJ, DeFranco DB. 5α-reductase inhibitors and COX-2 alter intraprostatic steroid homeostasis in benign prostate hyperplasia. ICE/ENDO Meeting. 2014.
13. **Liu TT**, Grubisha MJ, Ricke W, Auchus RJ, DeFranco DB. 5α-reductase inhibitors and COX2 alter intraprostatic steroid homeostasis in benign prostatic hyperplasia. NIDDK Directors Meeting. 2013.
14. **Liu TT**, Grubisha MJ, Ricke W, Auchus RJ, DeFranco DB. 5α-reductase inhibitors and COX2 alter intraprostatic steroid homeostasis in benign prostatic hyperplasia. SBUR Fall Meeting. 2013.
15. **Liu TT***, Grubisha MJ, Ricke W, Auchus RJ, DeFranco DB. 5α-reductase inhibitors alter intraprostatic steroid homeostasis in benign prostatic hyperplasia. Pittsburgh Area Nuclear Receptor Conference. 2013.
16. Grubisha MJ, **Liu TT**, Wang Z, Auchus RJ, Hammes SR, DeFranco DB. Alteration of intraprostatic steroid metabolism by 5α-reductase inhibitors potentiates ERβ activity in benign prostatic hyperplasia. ICE/ENDO Meeting. 2013.
17. **Liu TT**, Znaidi S, Barker KS, Xu L, Homayouni R, Raymond M, Rogers PD. Target genes of Candida albicans Tac1p identified by genome-wide expression and location profiling. Program and Abstracts of the 47th Interscience Conference on Antimicrobial Agents and Chemotherapy.
18. **Liu TT**, Znaidi S, Barker KS, Xu L, Homayouni R, Morschhäuser J, Raymond M, Rogers PD. Identification of transcriptional activation targets of the transcription factor Tac1p associated with azole resistance in clinical isolates of Candida albicans. Program and Abstracts of the Federation of European Biomedical Societies Human Fungal Pathogenesis Conference. 2007.
19. Morschhäuser J, Barker KS, **Liu TT**, Homayouni R, Blaß-Warmuth J, Rogers PD. The transcription factor MRR1 controls expression of the MDR1 efflux pump and mediates multidrug resistance in Candida albicans. Program and Abstracts of the Federation of European Biomedical Societies Human Fungal Pathogenesis Conference. 2007.
20. **Liu TT**, Lis M, Rogers PD, Bobek L. Genome-wide expression profiling of the response to the antifungal cationic antimicrobial peptide MUC7 12-mer in Candida albicans. Program and Abstracts of the 46th Interscience Conference on Antimicrobial Agents and Chemotherapy.
21. **Liu TT**, Znaidi S, Barker KS, Xu L, Homayouni R, Raymond M, Rogers PD. Stereotypical changes in the gene expression profile of Candida albicans in response to the sterol biosynthesis inhibitors fenpropimorph, ketoconazole, and terbinafine. Program and Abstracts of the 16th Congress of the International Society for Human and Animal Mycology. 2006.
22. **Liu TT**, Znaidi S, Barker KS, Xu L, Homayouni R, Morschhäuser J, Raymond M, Rogers PD. Identification of transcriptional activation targets of the transcription factor Tac1p associated with azole resistance in clinical isolates of Candida albicans. Program and Abstracts of the 8th ASM Conference on Candida and Candidiasis. 2006.
23. Earhart KD, **Liu TT**, Vermitsky JP, Xu L, Homayouni R, Edlind TD, Rogers PD. PDR1-dependent and –independent changes in gene expression in response to fluconazole in Candida glabrata. Program and Abstracts of the 8th ASM Conference on Candida and Candidiasis. 2006.
24. Barker KS, Phan QT, Park H, Xu L, Homayouni R, **Liu T**, Rogers PD, Filler SG. Comparison of gene expression profiles of human umbilical vein endothelial cells induced by Candida albicans hyphae and blastospores by microarray analysis. Program and Abstracts of the 8th ASM Conference on Candida and Candidiasis. 2006.
25. Earhart KD, **Liu T**, Vermitsky JP, Xu L, Homayouni R, Edlind TD, Rogers PD. PDR1-dependent

and -independent gene expression programs associated with azole resistance in Candida glabrata identified by microarray analysis. Program and Abstracts of the Annual Meeting of the American College of Clinical Pharmacy. 2005. 160.

26. Rogers PD, Hooshdaran MZ, **Liu TT**, Earhart K, Jiao Y, Xu L, Homayouni R, Hilliard GM, Gu W, Redding SW, Edlind TD. Molecular mechanisms of acquired azole antifungal resistance in clinical isolates of Candida glabrata identified through an integrated genetic, genomic, and proteomic approach. Program and Abstracts of the Annual Meeting of the American College of Clinical Pharmacy. 2005. 164.
27. Hooshdaran MZ, **Liu TT**, Barker KS, English BK, Hilliard GH, Thornton J, Swiatlo E, McDaniel LS, Rogers PD. Transcriptional modulation of gene expression in Streptococcus pneumoniae in response to subinhibitory concentrations of penicillin and clarithromycin. Program and Abstracts of the 45th Interscience Conference on Antimicrobial Agents and Chemotherapy.
28. Thornton, J, **Liu TT**, Homayouni R, Swiatlo E, English BK, McDaniel LS, Rogers PD. Modulation of the Streptococcus pneumoniae-induced gene expression profile of THP-1 human monocytic cells by sub-inhibitory concentrations of penicillin and clarithromycin. Program and Abstracts of the 45th Interscience Conference on Antimicrobial Agents and Chemotherapy.
29. Vermitsky JP, Smith WL, **Liu T**, Henry KW, Rogers PD, Edlind TD. Candida glabrata PDR1: genetic, genomic, and susceptibility studies. Program and Abstracts of the 45th Interscience Conference on Antimicrobial Agents and Chemotherapy.
30. **Liu TT**, Homayouni R, Alarco AM, Weber S, Raymond M, Rogers PD. Identification of transcriptional activation targets of the bZip transcription factor Cap1p in Candida albicans using genome-wide gene expression profile analysis. Program and Abstracts of the 45th Interscience Conference on Antimicrobial Agents and Chemotherapy.
31. **Liu TT**, Earhart K, Homayouni R, Patterson TF, Wiederhold NP, Burgess DS, Rogers PD. Genome-wide expression profile analysis reveals genes differentially expressed in association with azole and echinocandin cross resistance in a clinical isolate of Candida glabrata. Program and Abstracts of the 45th Interscience Conference on Antimicrobial Agents and Chemotherapy.
32. Neudeck BL, Alford TD, **Liu T**. Activation of P-glycoprotein During Listeria monocytogenes Infection. Presented at the American Society for Microbiology General Meeting. 2005.
33. **Liu TT**, Earhart K, Vermitsky JP, Xu L, Homayouni R, Edlind TD, Rogers PD. Genome-wide Expression Profile Analysis Reveals Genes Differentially Expressed in Association with Fluconazole Resistance in Candida glabrata. Program and Abstracts of the Federation of European Biomedical Societies Human Fungal Pathogenesis Conference. 2005.
34. **Liu T**, Lee REB, Barker KS, Walker LA, Clark AM, Rogers PD. Genome-wide expression profiling of the response to the novel antifungal alkaloids eupolauridine and sampangine in Candida albicans. Program and Abstracts of the 44th Interscience Conference on Antimicrobial Agents and Chemotherapy. 2004. M-1970.
35. **Liu T**, Hooshdaran MZ, Barker KS, Rogers PD. Integrated functional genomic and proteomic analysis of ergosterol biosynthesis inhibition in Candida albicans. Program and Abstracts of the 44th Interscience Conference on Antimicrobial Agents and Chemotherapy. 2004. M-1972.
36. Lee REB, Barker KS, **Liu T**, Lee RE, Wei L, Homayouni R, Rogers PD. Genome-wide expression profiling of the response to ciclopirox olamine in Candida albicans. Program and Abstracts of the 104th General Meeting of the American Society for Microbiology. 2004.
37. Lee REB, Barker KS, **Liu T**, Lee RE, Wei L, Homayouni R, Rogers PD. Genome-wide expression profiling of the response to polyene, pyrimidine, azole, and echinocandin antifungal agents in Candida albicans. Program and Abstracts of the 7th American Society for Microbiology Conference on Candida and Candidiasis. 2004. 153.

Invited Talks and Seminars

1. **Liu TT**. The effect of aging on fibrosis and lower urinary tract dysfunction. CAIRIBU. Kansas City, MO, 2019.
2. **Liu TT**. Multispectral imaging uncovers estrogen mediated racial disparity in BPH. Urology Research Conference. Pittsburgh, PA, 2019.
3. **Liu TT**. Identifying the troublemakers (cells and pathways) in BPH with multispectral imaging. AUA. Chicago, IL, 2019.
4. **Liu TT**. Estrogen receptor expression and steroid hormone metabolism in benign prostatic

hyperplasia. O'Brien Research Center of Excellence Spring Symposium – Molecular and Cellular Mechanisms of Fibrosis. Madison, WI, 2019.
5. **Liu TT**. The impact of age on the lower urinary tract of mice. CAIRIBU. Baltimore, MD, 2018.
6. **Liu TT**. Impact of altered steroidogenesis and estrogen receptor activation on benign prostatic hyperplasia progression. Great Lakes Nuclear Receptor Conference. Minneapolis, MN, 2018.
7. **Liu TT**. Impact of altered steroidogenesis and estrogen receptor activation on benign prostatic hyperplasia progression. University of Maryland Baltimore County; Baltimore, MD, 2018.
8. **Liu TT.** Modern LC-MS approach for biomarker discovery in urologic research. SBUR. Tampa, FL, 2017.
9. **Liu TT.** Estrogens and benign prostatic hyperplasia. Urology Research Conference. Pittsburgh, PA, 2017.
10. **Liu TT.** The role of estrogen receptor activation in benign prostatic hyperplasia progression. O'Brien Research Center of Excellence Spring Symposium – Steroid Hormone Pathways and Mechanisms of Action in Benign Urologic Disease. Madison, WI, 2017.
11. **Liu TT.** The identification of estrogen receptor gene networks in benign prostatic hyperplasia. University of Massachusetts – Boston; Boston, MA, 2017.
12. **Liu TT.** The role of estrogen receptor activation in benign prostatic hyperplasia progression. NIDDK U54-P20 Directors' Meeting. Asilomar, CA, 2016.
13. **Liu TT.** Selective estrogen receptor modulators and BPH. O'Brien Research Center of Excellence Spring Symposium – The Environmental Impact on Urologic Health and Disease. Madison, WI, 2016.
14. **Liu TT.** The role of estrogen receptor activation on benign prostatic hyperplasia progression. NIDDK U54-P20 Directors' Meeting. Madison, WI, 2015
15. **Liu TT**, Grubisha MJ, Ricke W, Auchus RJ, DeFranco DB. Opposing roles for COX-2 in regulating ERβ function in BPH. University of Wisconsin – Madison. Madison, WI, 2015
16. **Liu TT**, Grubisha MJ, Ricke W, Auchus RJ, DeFranco DB. COX-2 mediated inflammation alters intraprostatic steroid homeostasis in benign prostatic hyperplasia. Molecular and Cellular Cancer Biology Program. Pittsburgh, PA, 2015
17. **Liu TT**, Grubisha MJ, Ricke W, Auchus RJ, DeFranco DB. 5α-reductase inhibitors alter intraprostatic steroid homeostasis in benign prostatic hyperplasia. BPH Symposium. Pittsburgh, PA, 2013

Interdepartmental and Public Seminars

1. "Impact of altered steroidogenesis and estrogen receptor activation on benign prostatic hyperplasia progression." O'Brien Center On-campus Seminar Series, 2017
2. "The role of estrogen receptor activation on benign prostatic hyperplasia progression." O'Brien Center Seminar Series, 2015
3. "5α-reductase inhibitors alter intraprostatic steroid homeostasis in benign prostatic hyperplasia." Urology Research Conference, 2013
4. "Two large groups of non-coding RNAs reveal a novel RNA pathway." Department of Computational and Systems Biology Retreat, 2012

Teaching Experience

University of Wisconsin – Madison **Madison, WI**

Pharm 623 course instructor **2016-present**
- Pharmacology of Reproduction

Summer Program in Undergraduate Urologic Research (SPUUR) **2016-present**
Seminar Course Leader
- Facilitated weekly lectures on basic urology occurring on campus

MET 606 course instructor ***2016***
- Endocrine Disruptors and Estrogen Receptors

Toxicology 625 course instructor ***2015-2018***
- Endocrine Disruptors – Estrogen Receptors
- Endocrine Disruptors – Phthalates

University of Pittsburgh **Pittsburgh, PA**

Health Sciences Library Postdoctoral Teaching **2013**

- "DNA/RNA Immunoprecipitation and Next Generation Sequencing"
- How-to lecture on sequencing technologies and data analysis tools

UPCI Summer Institute Guest Lecturer **2011-2013**

- Taught central dogma to high school students using Bold Fold module
- Lectured on next generation sequencing and analysis tools

Summer Undergraduate Research Program Lecturer **2011-2013**

- Taught central dogma to undergraduate students using Bold Fold module
- Lectured on history of genomics, high-throughput sequencing technologies and analysis tools

Computational Genomics course instructor **2011-2012**

- Prepared and taught the introduction lectures on genes, genomics, and tools for analysis

Computational Biology journal club instructor **2010**

- Facilitated a weekly journal club on various computational biology related scientific articles
- Presentations were required and class was modeled after NIH study section

Carnegie Mellon University **Pittsburgh, PA**

Modern Biology course instructor **2011-2012**

- Co-taught a module of biology for non-majors to summer high school and undergraduate students
- Used active learning to teach the cell, respiration, and photosynthesis

Mentoring Experience

- Mentored high school, undergraduate, and graduate trainees, including research project design, laboratory supervision, and assistance with writing

University of Wisconsin – Madison

Riley Medenwald, undergraduate Sept 2019 – present
The effectiveness of pirfenidone and halofuginone in the reversal of prostatic fibrosis and BPH

- Wrote paper and presented poster for the University of Wisconsin – Madison Introductory Biology 152 course

Victor Dobak, undergraduate Sept 2019 – present
Antifibrotic therapies in BPH

Livianna Myklebust, undergraduate June 2018 – present
Collagen deposition, proliferation, and apoptosis in BPH

- Summer Program in Undergraduate Urologic Research (SPUUR) oral presentation
- CAIRIBU Research Training and Development Award winner
- CAIRIBU Best Poster

James Nelson, undergraduate June 2017 – June 2018
Estrogen receptor activation and BPH

- Summer Program in Undergraduate Urologic Research (SPUUR) oral presentation

Izak Walker, undergraduate January 2016 – June 2019
Estrogen receptor activation and BPH

- Wrote abstract and presented poster for the University of Wisconsin – Madison Introductory Biology 152 course

University of Pittsburgh

Nadeige Chop, medical student May – Sept 2015
Racial disparity in prostate cancer

- Received award for summer research project

Arianne Wilson, medical/graduate student May 2014 – Sept 2015
Racial disparity in prostate cancer

Amber Foster, undergraduate May – Aug 2014
Altered steroid metabolism in BPH and prostate cancer cell lines

Dan Lesky, medical student May – Aug 2013
EMT and wound healing in BPH-1

Jerome Watts, high school student June – Aug 2012
Relationship between androgens, non-coding RNAs, and prostate cancer
- Wrote abstract and paper for final project summary
- Presented at the UPCI Summer Academy poster session
- Presented at FAME (Fund for Advancement of Minorities Through Education) internship seminar

University of Tennessee Health Science Center

Erin Vasicek, graduate student Apr – Sept 2008
Transcriptional regulation pathways for azole resistance in Candida albicans

Stephanie Flowers, Pharm.D. fellow Apr – Sept 2008
Azole resistance in Candida albicans

Research Support

Ongoing research support

Grant 5K12DK100022, NIH/NIDDK September 2015 – present
Title: The role of estrogen receptor activation on benign prostatic hyperplasia progression

Completed research support

Grant 5T32DK007774-15, NIH/NIDDK May 2013 – May 2015
Title: Examine the contribution of the pro-inflammatory mediator COX-2 on ERβ function and activity

Professional Development and Service

Departmental Seminars

- Organizing speakers for the UW O'Brien Center On-campus Speaker Seminar, 2016-2019

Memberships in Professional and Scientific Societies

- AUA, 2020
- Gerontological Society of America, 2019-present
- University of Wisconsin Institute for Clinical and Translational Research (ICTR), 2015-present
- RNA Society, 2015-2017
- SBUR, 2014-present
- Endocrine Society, 2014-present
- AAAS, 2010-present
- University of Pittsburgh Postdoctoral Association, 2010-2015
- FIRST IV Postdoctoral Scholar, 2009-present
- American Society for Microbiology, 2003-2012

Developmental workshops:

- NIDDK K Awardees' Workshop, 2017
- AUA Early Career Investigators Workshop, 2016
- RNA-seq workshop, 2013
- FIRST IV workshop, 2009-2010

Selected Techniques and Skills

- **Cellular and molecular biology:** cell culture, qRT-PCR, proliferation assays (MTT, Hoechst staining), fluorescence microscopy, immunocytochemistry, immunohistochemistry, *in situ* hybridization, northern blotting, western blotting, Southern blotting, EMSA, flow cytometry (annexin V/PI for apoptosis), transient and stable gene transfection (lentiviral shRNA), CRISPR/Cas9, molecular cloning
- ***In vivo* techniques:** mouse handling, pellet surgery, mouse dissection
- **Computational biology:** high-throughput sequencing with Illumina and Helicos, sequence mapping with Bowtie and TopHat, expression analysis with Cufflinks and HTseq, ChIP-seq analysis with Model-based Analysis for ChIP-seq (MACS), R, Perl

Public Outreach

- Judge at Pittsburgh Regional Science and Engineering Fair, 2014
- Volunteer/Lecturer at Tour Your Future Program for Girls, Math & Science Partnership, 2011
- Mentor for the Ethics Forum at the University of Pittsburgh for the Summer Undergraduate Research Program, 2010-2011