

## Curriculum Vitae

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**Name:** Usman M. Ashraf

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### Educational Background:

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2012-2016	Indiana University, Bloomington Indiana, B.S. Major: Biochemistry, Minor: Mathematics, August 2016
2016-2020	University of Toledo College of Medicine and Life Science Toledo Ohio, Ph.D. Molecular Medicine, August 2020

### Employment/ Positions held:

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01/2015 – 05/2015	Teaching Assistant Foundations of Biology: Biology Mechanisms Indiana University, Dr. Richard Wagner
01/2016 – 05/2016	Teaching Assistant Introduction to Biology Indiana University, Dr. Jason Tennessen
01/2014 – 05/2016	Undergraduate Research Assistant Molecular Biology, Dr. Jason Tennessen
08/2017 – 06/2020	Graduate Student Research Assistant Molecular Medicine (MOME), Dr. Sivarajan Kumarasamy

## Awards:

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- Recipient of **Best Incoming Student Award** in Dept. of Physiology and Pharmacology at University of Toledo College of Medicine and Life Sciences, September 2017.
- Selected for **Oral presentation** and **Honorable mention poster** at the Ohio Physiological society 34<sup>th</sup> annual meeting in Dayton, OH. “Targeted Disruption of *Coup-TFII* leads to decrease in renal fibrosis by increasing SMAD7 levels”. September 2019.
- Recipient of **Trainee Travel Award** from Central Society for Clinical and Translational Research (CSCTR) for poster presentation “Transcriptomic analysis of *Resp18<sup>mutant</sup>* rat kidney reveals upregulation of the renin-angiotensin system” at Midwest Clinical and Translational Research Meeting. April 2020.

## Professional Memberships

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- Member of the American Heart Association (AHA)
- Member of the American Physiological Society (APS)
- Member of the Council for High Blood Pressure Research (CHBPR)

## Scientific Skills:

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- Genomics: DNA and RNA extraction and purification, miRNA/lncRNA isolation, cDNA synthesis, primer design, qRT-PCR, RNA-seq.
- Expertise in instrument handling: Mass Spectroscopy (GC-MS), Comprehensive Lab Animal Monitoring System (CLAMS), and NMR to measure whole body composition.
- Cell culture: Cell growth and maintenance, transfection, Lentiviral transduction, isolation and culturing of primary cells (proximal tubule cells and neonatal cardiomyocytes), luciferase assay.
- Protein: Protein extraction, western blotting.
- Histology: Histology staining, immunohistochemistry, light and fluorescent microscopy
- Animal work: Experienced in Rat and mouse breeding, handling and tagging, IP and IM injections, tail vein injection, retro-orbital injection, and dissection.
- Animal Procedure: Glucose tolerance test (GTT), Insulin tolerance test (ITT), and Glomerular filtration rate (GFR) measurement in rodents.
- Surgical: Telemetry surgery for blood pressure in rodents.

- **Professional:** Teaching, mentoring, leadership, communication, grant writing, manuscript preparation and public speaking.
- **Computer Skills:** Proficiency in MS Office (Word, Excel, and power point), SPSS package, Graph pad prism, Adobe Photoshop, and R- project for statistical computing.

## Publications:

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1. St Clair, S.L., Li, H., **Ashraf, U.**, Karty, J.A. & Tennesen, J.M. "Metabolomic Analysis Reveals That the *Drosophila melanogaster* Gene lysine Influences Diverse Aspects of Metabolism". *Genetics*; 207, 1255-1261 (2017). PMID: 28986444
2. Kumarasamy, S., Waghulde, H., Cheng, X., Haller, ST., Mell, B., Abhijith, B., **Ashraf, U.M.**, Atari, E., & Joe, B. "Targeted disruption of regulated endocrine-specific protein (Resp18) in Dahl SS/Mcw rats aggravates salt-induced hypertension and renal injury". *Physiol Genomics*; 50, 369-375 (2018). PMID: 29570433
3. Fan, Xiaoming, **Ashraf, U.M.**, Drummond, C. A., Shi, H., Zhang, X., Kumarasamy, S., & Tian, J., "Characterization of a Long Non-Coding RNA, the Antisense RNA of Na/K-ATPase  $\alpha 1$  in Human Kidney Cells." *International Journal of Molecular Sciences* 19, 7 2123. 21 (2018). PMID: 30037072
4. **Ashraf U.M.**, Sanchez ER, and Kumarasamy S. COUP-TFII revisited: Its role in metabolic gene regulation. *Steroids* 141: 63-69, (2018). PMID: 30481528
5. Shalaby, R., Petzer, J. P., Petzer, A., **Ashraf, U. M.**, Atari, E., Alasmari, F., Khalil, A. (2019). SAR and molecular mechanism studies of monoamine oxidase inhibition by selected chalcone analogs. *Journal of enzyme inhibition and medicinal chemistry*, 34(1) 863-879. (2019). PMID: 30915862
6. **Ashraf, U. M.**, Mell, B., Kumarasamy S, (2020). Transcriptomic analysis of *Resp18<sup>mutant</sup>* rat kidneys reveals up-regulation of Renin-Angiotensin system (Manuscript Under preparation).
7. **Ashraf, U. M.**, Durairajpandian, V., Kennedy, D., Haller, S., Dworkin, L., Kumarasamy, S. Targeted Disruption of *Coup-TFII* leads to decrease in renal fibrosis by increasing SMAD7 levels. (Manuscript Under preparation).
8. **Ashraf, U. M.**, Abokor, A., Edwards, J., Waigi, E., Royfman, R., Hassan, S., Smedlund, K., Hardy, A., Chakravarti, Ritu., Koch, Lauren. SARS-CoV2, ACE2 expression, and systematic organ invasion. (Manuscript Under preparation)

## Presentations:

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- Published Abstracts:

1. Selected for poster: **Ashraf UM**, and Kumarasamy S. Role of COUP-TFII in Glucose Homeostasis in Dahl Salt Sensitive Rats. The *FASEB Journal* 32: 1b480-1b480, (2018).
2. Selected for Oral: **Ashraf, U.**, Durairajpandian, V., Kumarasamy, S. Coup-TFII is a Novel Regulator of the TGF- $\beta$  pathway in renal fibrosis mediating the SMAD signaling cascade. *Hypertension* 74, A132 (2019).

- Invited Speaker:

1. Competitively Selected for Oral presentation at the *45th Annual Pharmacology Research Colloquium* at Michigan State University. "Novel look into *Coup-TFII* role in gluconeogenesis and  $\beta$ -oxidation in the Dahl Salt Sensitive Rat". May 2018.
2. Competitively Selected for Oral presentation at the *2019 Graduate Research Forum at the University of Toledo College of Medicine and Life sciences*. "*Coup-TFII* regulates SMAD signaling in the kidney of the Dahl Salt Sensitive Rat". March 2019.
3. Competitively Selected for Oral presentation at the *2019 Gull Lake hypertension meeting* at Michigan State University. "*Coup-TFII* plays a major role in the TGF- $\beta$  pathway under high salt diet". May 2019
4. Competitively Selected for Oral presentation at the *46th Annual Pharmacology Research Colloquium* the University of Toledo. "How the Chicken Ovalbumin upstream promotor factor II became a candidate gene for hypertension". June 2019.
5. Competitively Selected for Oral presentation at the *Ohio Physiological society 34th annual meeting* in Dayton, OH. "Targeted Disruption of *Coup-TFII* leads to decrease in renal fibrosis by increasing SMAD7 levels". September 2019.

- Poster presentations:

1. **Ashraf, U.**, Kumarasamy, S. A look into *COUP-TFII* role in glucose homeostasis and blood pressure regulation in Dahl SS rats. 4/28/2018. Central Society for Clinical and Translational Research (CSCTR), Chicago, IL
2. **Ashraf, U.**, Durairajpandian, V., Kumarasamy, S. Targeted Disruption of *Coup-TFII* leads to decrease in renal fibrosis by increasing SMAD7 levels. 9/22/2019. Ohio Physiological Society. Dayton OH

3. **Ashraf, U., Mell, B., Kumarasamy, S.** Transcriptomic analysis of Resp18<sup>mutant</sup> rat kidney reveals upregulation of the renin-angiotensin system. 4/03/2020. Central Society for Clinical and Translational Research (CSCTR), Chicago, IL

### Press Release:

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- Story in the Toledo Blade newspaper, Usman Ashraf, "UT research explores salt sensitivity and blood pressure." February 2020. Press. Web.

### Grant Applications:

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1. 2018 American Heart Association (AHA) Pre-doc, *A Novel Insight into Nr2f2 role in gluconeogenesis and Beta oxidation in BP Regulation under a high calorie diet*, unfunded.
2. 2019 American Heart Association (AHA) Pre-doc, *A novel look into Coup-TFII role in glucose homeostasis and energy metabolism mediated blood pressure regulation*, unfunded.
3. 2020 American Heart Association (AHA) Pre-doc, *Coup-TFII: A novel regulator of renal fibrosis*, unfunded.

### List of trainees:

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1. Mitchell Perry-MSBS student (2018-2019)  
Role: Mentor

### Departmental service

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1. Chaperone for University of Toledo College of Medicine and Life Sciences, Department of Physiology and Pharmacology summer camp.
2. Organizing events within the Department of Physiology and Pharmacology at the University of Toledo College of Medicine and Life Sciences.

### References:

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1. Dr. Sivarajan Kumarasamy – Assistant Professor at the University of Toledo College of Medicine and Life Sciences; Email: [Sivarajan.Kumarasamy@utoledo.edu](mailto:Sivarajan.Kumarasamy@utoledo.edu); tel: 419-383-4138
2. Dr. Jason Tennessen – Assistant Professor at Indiana University; Email: [jtenness@indiana.edu](mailto:jtenness@indiana.edu) tel: 219-3855-9803
3. Dr. Edwin Sanchez – Professor at the University of Toledo College of Medicine and Life Sciences, Email: [Edwin.Sanchez@utoledo.edu](mailto:Edwin.Sanchez@utoledo.edu) tel: 419-383-4187