CURRICULUM VITAE July 13, 2023

**Christine A. Klemens, PhD**

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**ORCID ID:** <https://orcid.org/0000-0002-0812-824X>

**EDUCATION:** 2001 – 2005 **BS**, University of Wisconsin, Madison, WI

 2011 – 2017 **PhD**, University of Pittsburgh, Pittsburgh, PA

**TRAINING AND FELLOWSHIP APPOINTMENTS:**

2017 – 2021 Postdoctoral Fellow

Dept. of Physiology – Staruschenko Lab

Medical College of Wisconsin

2011 – 2017 Graduate Student

 Dept. of Cell Biology – Butterworth Lab

 University of Pittsburgh, School of Medicine

2008 – 2010 Research Technician – Tan and Bezzina Labs

 Academic Research Center

 University of Amsterdam

2006 – 2007 Associate Research Specialist – January Lab

 Dept. of Medicine

University of Wisconsin: Madison

2004 – 2005 Undergraduate Research Assistant – January Lab

Dept. of Medicine

University of Wisconsin: Madison

**FACULTY APPOINTMENTS:**

2023 – Present Assistant Professor (tenure-track)

 Dept. Of Molecular Pharm and Phys

 University of South Florida

2021 – 2023 Research Associate (junior faculty)

 Dept. of Molecular Pharm and Phys – Staruschenko Lab

 University of South Florida

**RESEARCH FUNDING:**

**Ongoing Research Support**

NIH NHLBI K99/R00

1K99HL153686-01A1 08/01/2021 – 07/31/2023 (K99)

The Role of ClC-6 in Vascular Control of Blood Pressure

Role: Principal Investigator

NIH NHLBI K99/R00

1K99HL153686-01A1 08/01/2023 – 07/31/2026 (R00 Phase)

The Role of ClC-6 in Vascular Control of Blood Pressure

Role: Principal Investigator

**Completed Research Support**

MCW Cardiovascular Center A.O. Smith T32 Training Grant

T32 HL134643 12/01/2017 – 11/30/2020

The Role of CLC-6 in Blood Pressure Regulation

Role: Principal Investigator

American Society of Nephrology Postdoctoral Fellowship (declined for T32)

Ben J. Lipps Fellowship 07/01/2018 – 06/30/2020

 Effect of Clcn6 on blood pressure, vasculature, and kidney function

 Role: Principal Investigator $50,000/year

American Heart Association Postdoctoral Fellowship (declined for T32)

18POST33990430 07/01/2018 – 06/30/2020

 Effect of Clcn6 on vasculature function and blood pressure

 Role: Principal Investigator $103,328

 American Heart Association Predoctoral Fellowship

 15PRE25680068 07/01/2015 – 06/30/2017

 Ankyrin G Regulation of the Epithelial Sodium Channel after Aldosterone Stimulation

 Role: Principal Investigator $63,040

**PATENTS:**

January CT, **Klemens CA**, Delisle BP, Anson BD. “Constitutively open hERG (Kv11.1) mutant channels.” US Patent 7820437. 26 Oct. 2010.

**HONORS AND AWARDS:**

2022 Pre-ASN Kidney Week Basic Research Forum People’s Choice Award

2021 USF Dept. of Molecular Pharm and Phys Outstanding Junior Investigator Award

2021 APS Renal Section Postdoctoral Research Excellence Finalist

2020 APS Caroline Tum Suden Career Development Award (Postdoc)

2020 AHA Hypertension Kidney Council New Investigator Travel Award

2020 Medical College of Wisconsin Postdoctoral Excellence in Science Award

2019 Medical College of WI Postdoc Travel Award

2019 APS Epithelial Transport Group Meritorious Travel Award

2019 APS Aldosterone and ENaC Travel Award

2016 APS Epithelial Transport Group Meritorious Travel Award

2014 APS Caroline Tum Suden Career Development Award (Predoc)

2014 ASN Kidney STARS Travel Award

2013 Univ. of Pitt. Cell Biology Retreat Best Grad Student Poster

2005 University of WI Honors Senior Thesis Research Grant

**PROFESSIONAL SERVICE:**

**Professional Memberships**

2013 – Present American Physiological Society

2013 – Present American Society of Nephrology

2013 – 2014 University of Pittsburgh Biomedical Graduate Student Association

2014 – Present American Heart Association

2017 – 2021 National Postdoc Association

2017 – 2021 Medical College of Wisconsin Postdoctoral Advisory Committee

**Service**

11/2023 Co-Chair, Career Development Subcommittee, Basic Research Forum for Emerging Kidney Scientists

04/2023 Co-Chair, APS Summit Trainee Session “Harnessing Science Communication to Improve Your Career”

04/2023 Organizer, Posters & Professors APS Renal Section Trainee Networking Event

02/2023 Moderator, USF Heart Institute Trainee Research In Progress

02/2023 Guest Editor, AJP Renal “Hypertension Mechanisms and Hypertension Target Organ Damage” Call for Papers

02/2023 Kidney Research UK ad hoc Grant Reviewer

02/2023 APS Graduate Student Ambassador Selection Committee

02/2023 APS Dale Benos Service Award Selection Committee

11/2022 Moderator, ASN Kidney Week “Big Roles for Thin Limbs”

07/2022 – Present Creator/Organizer, APS Renal: Clash of the Kidneys SciArt Competition

04/2022 Organizer, Posters & Professors APS Renal Section Trainee Networking Event

01/2022 – 06/2023 Early Career Reviewer Fellow, American Journal of Physiology: Renal Physiology

02/2022 APS Graduate Student Ambassador Selection Committee

02/2022 APS Dale Benos Service Award Selection Committee

04/2021 – 04/2024 Trainee Advisory Committee Chair, American Physiological Society, Renal Section

01/2021 – 09/2021 Diversity and Inclusion Action Committee Liaison, Postdoctoral Advisory Committee, Medical College of Wisconsin

07/2019 – 09/2020 Co-Chair, Postdoctoral Advisory Committee Medical College of Wisconsin

10/2018 Trainee Chair, Cardiovascular Center Retreat, Medical College of Wisconsin

10/2018 Postdoctoral Excellence in Science Award Selection Committee, Postdoctoral Advisory Committee Medical College of Wisconsin

09/2018 Travel Award Selection Committee, Postdoctoral Advisory Committee, Medical College of Wisconsin

08/2018, 08/2019 Trainee Presentation Selection Committee, Cardiovascular Center Retreat, Medical College of Wisconsin

05/2018 – 06/2019 Social Committee Chair, Postdoctoral Advisory Committee Medical College of Wisconsin

01/2018 – 04/2021 Member, APS Renal Section Trainee Subcommittee

09/2017 – 05/2018 Letters to a Pre-Scientist Pen Pal

05/2015 Set-up volunteer, Intel International Science and Engineering Fair

07/2014 “Sciencepalooza” volunteer, University of Pittsburgh

07/2014 – 07/2016 Graduate Retreat Planning Committee, Department of Cell Biology, Univ. of Pittsburgh

10/2013 “Investing Now” Teaching Assistant, Microscopy unit, University of Pittsburgh Swanson School of Engineering

09/2013 – 09/2014 Cell Biology Representative, Biomedical Graduate Student Association, University of Pittsburgh

**Ad hoc Reviewer**

Am. J. Physiol. Renal Physiology

 Frontiers in Physiology: Renal and Epithelial Physiology

 Physiological Reports

 MDPI: Biomolecules

**JOURNAL PUBLICATIONS / ORIGINAL PAPERS:**

1. Zietara A, Palygin O, Levcheko V, **Klemens CA**, Geurts A, Denton JS, Staruschenko A. Effects of Kir7.1 knockout and inhibition on renal electrolyte handling and blood pressure development in Dahl salt-sensitive rats. *Am J Phys: Renal Phys*. 2023 Aug 1;325(2):F177-F187. PMID: 37318990
2. Zietara A, Spires DS, Juffre A, Costello HM, Levchenko V, Dissanayake LV, **Klemens CA**, Nikolaienko O, Geurts AM, Gumz ML, Staruschenko A. Knockout of the circadian clock protein PER1 exacerbates hypertension and causes circadian disruption in Dahl salt-sensitive rats. *Hypertension*. 2022 Nov;79(11):2519-2529. PMID: 36093781
3. **Klemens CA**, Dissanayake LV, Levchenko V, Zietara A, Palygin O, Staruschenko A. Modulation of blood pressure regulatory genes in the Agtrap-Plod1 locus associated with a deletion in Clcn6. *Physiol Rep.* 2022Aug;10(15):e15417. PMID: 35927940
	* + Selected as August 2022 Editor’s Choice article
4. Kravtsova O, Bohovyk R, Levchenko V, Palygin O, **Klemens CA**, Rieg T, Staruschenko A. SGLT2 inhibition effect on salt-induced hypertension, RAAS, and Na+ transport in Dahl SS rats. *Am J Physiol: Renal Physiol*. 2022 Jun 1;322(6):F692-F707. PMID: 35466690.
5. Isaeva E, Bohovyk R, Fedoriuk M, Shalygin A, **Klemens CA**, Zietara A, Levchenko V, Denton DS, Staruschenko A, Palygin O. Crosstalk between ENaC and the basolateral Kir4.1/Kir5.1 channel in the cortical collecting duct. *Br. J. Pharmacol.* 2022 Jun;179(12):2953-2968. PMID: 34904226.
6. **Klemens CA**, Staruschenko A, Palygin O. The mechanisms of cellular plasticity in collecting duct cells: intermediate cell type and Notch-mediated transdifferentiation. *Function.* 2021 Jun25;2(4)*.* PMID: 34223174
7. **Klemens CA**, Chulkov EG, Wu J, Hye Khan MA, Levchenko V, Flister MJ, Imig JD, Kriegel AJ, Palygin O, Staruschenko A. Loss of ClC-6 Affects Vascular Smooth Muscle Contractility and Arterial Stiffness Via Alterations to Golgi Calcium Stores. *Hypertension.* 2021 Feb;77(2):582-593. PMID: 33390052
8. Palygin O\*, **Klemens CA**\*, Isaeva E\*, Levchenko V, Spires DR, Dissanayake LV, Nikolaienko O, Ilatovskaya DV, Alexander Staruschenko. Characterization of purinergic receptor 2 signaling in podocytes from diabetic kidneys. *iScience.* 2021 May 11;24(6):102528*.* PMID: 34142040

\*Equal contribution

1. Spires, DR, Palygin O, Levchenko V, Isaeva E, **Klemens CA**, Khedr S, Nikolaienko O, Kriegel AJ, Cheng X, Yeo JY, Joe B, Staruschenko A. Sexual dimorphism in the progression of type 2 diabetic kidney disease in T2DN rats. *Physiol Genomics*. 2021 Jun 1;53(6):223-234. PMID: 33870721
	* + APSselect featured article
2. **Klemens CA**, Staruschenko A. AJP-Renal Collections: Hypertension. *Am J Physiol Renal Physiol*. 2020 Dec 1;319(6):F1001-F1002. PMID: 33166184
3. Golosova D, Palygin O, Bohovyk R, **Klemens CA**, Levchenko V, Spires DR, Isaeva E, El-Meanawy A, Staruschenko A. Role of opioid signaling in kidney damage during the development of salt-induced hypertension. *Life Sci Alliance*. 2020 Oct 12;3(12):e202000853. PMID: 33046522
4. Isaeva E, Fedoriuk M, Bohovyk R, **Klemens CA**, Khedr S, Golosova D, Levchenko V, El-Meanawy A, Palygin O, Staruschenko A. Vibro-Dissociation Method for Isolation of Defined Nephron Segments from Human and Rodent Kidneys. *Am J Physiol Renal Physiol*. 2019 Nov 317(5):F1398-F1403. PMID: 31588797
5. Palygin O, Spires D, Levchenko V, Bohovyk R, Fedoriuk M, **Klemens CA**, Sykes O, Bukowy JD, Cowley AW, Lazar J, Ilatovskaya DV, Staruschenko A. Progression of diabetic kidney disease in the T2DN rats. *Am J Physiol Renal Physiol*. 2019 Dec 317(6):F1450-1461. PMID: 31566426
6. **Klemens CA**, Brands MW, Staruschenko A. Postprandial effects on electrolyte homeostasis in the kidney. *Am J Physiol Renal Physiol*. 2019 Dec 317(6):F1405-F1408. PMID: 31566434
7. Blass G\*, **Klemens CA**\*, Brands MW, Palygin O, Staruschenko A. Postprandial Effects on ENaC-Mediated Sodium Absorption. *Sci Rep*. 2019 Mar 12;9(1):4296. PMID: 30862903

\*Equal contribution

1. Ilatovskaya DV, Levchenko V, Pavlov TS, Isaeva E, **Klemens CA**, Johnson J, Liu P, Kriegel, Staruschenko A. Salt-deficient diet exacerbates cystogenesis in ARPKD via epithelial sodium channel (ENaC). *EBioMedicine*. 2019 Feb;40:663-674. PMID: 30745171
2. Palygin O, Ilatovskaya DV, Levchenko V, **Klemens CA**, Dissanayake L, Williams AM, Pavlov TS, Staruschenko A. Characterization of purinergic receptor expression in ARPKD cystic epithelia. *Purinerg Signal*. 2018 Dec;14(4):485-497. PMID: 30417216
3. **Klemens CA**, Edinger RS, Kightlinger L, Liu X, Butterworth MB. Ankyrin G Expression Regulates Apical Delivery of the Epithelial Sodium Channel (ENaC). *J Biol Chem*. 2017 Jan 6;292(1):375-385. PMID: 27895120
4. Liu X, Edinger RS, **Klemens CA**, Phua YL, Bodnar AJ, LaFramboise WA, Ho J, Butterworth MB. A MicroRNA Cluster miR-23-24-27 Is Upregulated by Aldosterone in the Distal Kidney Nephron Where it Alters Sodium Transport. *J Cell Physiol*. 2017 Jun;232(6):1306-1317. PMID: 27636893
5. Veerman CC, Verkerk AO, Blom MT, **Klemens CA**, Langendijk PN, van Ginneken AC, Wilders R, Tan HL. Slow Delayed Rectifier Potassium Current Blockade Contributes Importantly to Drug-Induced Long QT Syndrome. *Circ Arrhythm Electrophysiol.* 2013 Oct 1; 6(5):1002-9. PMID: 23995305
6. Bardai A, Amin AS, Blom MT, Bezzina CR, Berdowski J, Langendijk PN, Beekman L, **Klemens CA**, Souverein PC, Koster RW, de Boer A, Tan HL. Sudden cardiac arrest associated with use of a non-cardiac drug that reduces cardiac excitability: evidence from bench, bedside, and community. *Eur Heart J*. 2013 Feb;34(20):1506-1516. PMID: 23425522
7. Amin AS, Giudicessi JR, Tijsen AJ, Spanjaart AM, Reckman YJ, **Klemens CA**, Tanck MW, Kapplinger JD, Hofman N, Sinner MF, Müller M, Wijnen WJ, Tan HL, Bezzina CR, Creemers EE, Wilde AA, Ackerman MJ, Pinto YM. Variants in the 3' untranslated region of the KCNQ1-encoded Kv7.1 potassium channel modify disease severity in patients with type 1 long QT syndrome in an allele-specific manner. *Eur Heart J*. 2012 Mar;33(6):714-23. PMID: 22199116
8. Hardziyenka M, Campian ME, Reesink HJ, Surie S, Bouma BJ, Groenink M, **Klemens CA**, Beekman L, Remme CA, Bresser P, Tan HL. Right ventricular failure following chronic pressure overload is associated with reduction in left ventricular mass evidence for atrophic remodeling. *J Am Coll Cardiol*. 2011 Feb 22;57(8):921-8. PMID: 21329838
9. Amin AS, **Klemens CA**, Verkerk AO, Meregalli PG, Asghari-Roodsari A, de Bakker JM, January CT, Wilde AA, Tan HL. Fever-triggered ventricular arrhythmias in Brugada syndrome and type 2 long-QT syndrome. *Neth Heart J*. 2010 Mar;18(3):165-9. PMID: 20390067
10. Amin AS, Herfst LJ, Delisle BP, **Klemens CA**, Rook MB, Bezzina CR, Underkofler HA, Holzem KM, Ruijter JM, Tan HL, January CT, Wilde AA. Fever-induced QTc prolongation and ventricular arrhythmias in individuals with type 2 congenital long QT syndrome. *J Clin Invest*. 2008 Jul;118(7):2552-61. PMID: 18551196

26. Rajamani S, Eckhardt LL, Valdivia CR, **Klemens CA**, Gillman BM, Anderson CL, Holzem KM, Delisle BP, Anson BD, Makielski JC, January CT. Drug-induced long QT syndrome: hERG K+ channel block and disruption of protein trafficking by fluoxetine and norfluoxetine. *Br J Pharmacol*. 2006 Nov;149(5):481-9. PMID: 16967046

**Publications under review**

27. Bohovyk R, Khedr S, Levchenko V, Stefanenko M, Semenikhina M, Kravtsova O, Isaeva E, Geurts A, **Klemens CA**, Palygin O, Staruschenko A. Protease-Activated Receptor 1 Mediated Damage of Podocytes in Diabetic Nephropathy. *Diabetes. In Press.*

28. Semenikhina M, Fedoriuk M, Stefanenko M, **Klemens CA**, Solanki AK, Lipshutz JH, Staruschenko A, Palygin O. β-arrestin pathway modulation of calcium influx in podocytes. *Clin Sci.* *Under review.*

29. Kravtsova O, Levchenko V, **Klemens CA**, Rieg T, Liu R, Staruschenko A. Effect of SGLT2 inhibition on salt-induced hypertension in female Dahl SS rats. *Am J Physiol: Regulatory Physiol. Under review.*

**Non-Peer Reviewed Publications**

29. **Klemens, CA**. “Tips to Give a Stellar Oral Presentation!” Spring 2023 APS Trainee Newsletter

30. **Klemens, CA**. “Reasons to Attend a Conference.” Fall 2022 APS Trainee Newsletter

**ORAL PRESENTATIONS:**

University of Sout Florida Molecular Pharmacology and Physiology Fall Seminar Series “Cyst Fluid Composition in a Rat model of Autosomal Recessive Polycystic Kidney Disease” 10/02/2023

Invited Talk: Medical College of Georgia, Augusta University Department of Physiology “PKD, ClC, and Other Alphabet Soup in Cardiorenal Physiology” 06/15/2023

Invited Talk: Medical University of South Carolina Division of Nephrology Grand Rounds “Electrolyte and Metabolite Composition of Cystic Fluid from a Rat Model of ARPKD” 04/27/23

Invited Talk: University of Mississippi Medical Center Department of Physiology & Biophysics “PKD, ClC and Other Alphabet Soup in Cardiorenal Physiology” 02/22/2023

Hypertension and Kidney Research Center Seminar “Electrolytes, Metabolites, and Sex Differences in Polycystic Kidney Cyst Fluid” 02/16/23

ASN and APS: Basic Research Forum for Emerging Kidney Scientists 2022 “Ion and Metabolite Composition of Cystic Fluid from a Rat Model of ARPKD”

 \*People’s Choice Award for best presentation in section

University of South Florida Hypertension and Kidney Research Center Pre-ASN Meeting 2022

“Electrolyte and Metabolite Composition of Cystic Fluid from a Rat Model of ARPKD”

University of South Florida Molecular Pharmacology and Physiology Research Retreat 2021 “The Role of ClC-6 in Cardiovascular and Renal Function”

 \*Awarded outstanding junior investigator presentation

Experimental Biology 2021 Renal Section: Posters and Professors “Remodeling of Purinergic Receptor 2 Signaling in Podocytes In Diabetic Kidney Disease”

 \*Renal Section Postdoctoral Award Finalist

APS Aldosterone and ENaC in Health and Disease 2019 “Postprandial Effects on ENaC-Mediated Sodium Absorption”

 \*Selected for travel award

Experimental Biology 2019 “Postprandial Effects on ENaC-Mediated Sodium Absorption”

 \*Invited to publish mini-review in AJP: Renal Physiology

Experimental Biology 2016 “Ankyrin-G Alters ENaC Membrane Delivery to Increase Na+ Transport in the Distal Kidney Nephron”

 \*Selected for travel award

**TEACHING:**

2020, 2021 Teaching Assistant (Masters and PhD students)

 Special Topics in Physiology

 Medical College of Wisconsin

2012 – 2015 Graduate Teaching Fellow (Med students)

 Cellular and Pathological Basis of Disease

 Normal Histology Lab

 University of Pittsburgh, School of Medicine

2008 English as a Second Language Teacher (children and adults)

 German Culture Center, Biysk, Russia

2008 English as a Second Language Teacher (children)

 American Village, various locations, France

2005 Undergraduate Teaching Assistant (Undergraduates)

 BIOCORE 324

 University of Wisconsin: Madison

**MENTORING:**

Graduate Students

Staruschenko Lab: Denisha R. Spires (PhD), Anna Manis (PhD), Lashodya Dissanayake (MD PhD), Adrian Zietara (PhD), Melissa Lowe

Medical Students

Tan and Bezzina Labs: Florence Atrafi (MD), Christiaan Veerman (MD PhD)

Undergraduates

Butterworth Lab: Lindsay Kightlinger (3 years), Katherine Pilewski (Pitt SURP student)

Staruschenko Lab: Ciara Jarmain (MCW SPUR student), Demi M. Carter (MCW DSHREP student), Tessa Shankey (MCW SPUR student), Brody Smith (USF BS-MD student)