

CURRICULUM VITAE

Alexander Staruschenko, Ph.D.

Professor & Director

OFFICE ADDRESS: University of South Florida
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DATE OF BIRTH: October 14th, 1974

CITIZENSHIP: U.S.A.

EDUCATION:

09/1991 - 05/1997 B.S., St. Petersburg State University, St. Petersburg, Russia
09/1997 - 12/1999 M.S., St. Petersburg State University, St. Petersburg, Russia
06/2000 - 03/2003 Ph.D., Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia
02/2010 D.Sci., Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

POSTGRADUATE AND ADDITIONAL RESEARCH AND PROFESSIONAL TRAINING:

Research Fellowship

7/2003 - 12/2006 Postdoctoral Fellowship, Renal Physiology (Mentor–James D. Stockand, PhD)
University of Texas Health Science Center at San Antonio, San Antonio, TX

Additional Research and Professional Training

09/2000 International Workshop “Membranes and Signaling” organized by the UK
Physiological Society and devoted to ion channels recordings. Kiev, Ukraine
05/2013 3rd UAB-UCSD O’Brien Center Rodent Kidney Physiology and Injury Workshop
07/2015 Halcyon Incubator and S&R Alumni Retreat, Washington, DC
12/2018 Supported by APS RCEA training in the laboratories of Dr. Yuri Korchev and Dr. Yulia
Gorelik (Imperial College of London) to learn Scanning Ion-Conductance Microscopy
06/2019 Nature Publishing Group training “Fundamentals for Editors”
2019 – 2020 Leadership Academy; Medical College of Wisconsin and the University of Wisconsin-
Milwaukee Sheldon B. Lubar School of Business Executive Program
2022 AHA Research Leaders Academy, Sept 12-14, 2022. San Diego, CA

FACULTY APPOINTMENTS:

1/2007 – 10/2007 Research Assistant Professor, Department of Physiology, University of Texas Health
Science Center at San Antonio
11/2007 – 06/2012 Assistant Professor, Department Physiology, Medical College of Wisconsin
07/2012 – 06/2017 Associate Professor (tenured), Department Physiology, Medical College of Wisconsin
02/2016 – 08/2021 BLRD/CSRD Non-Clinician Investigator appointment, Clement J. Zablocki VA
Medical Center

07/2017 – 08/2021	Professor (tenured), Department of Physiology, Medical College of Wisconsin
07/2018 – 08/2021	MCW Eminent Scholar (equivalent to Endowed Chair), Medical College of Wisconsin
09/2021 –	Adjunct Professor, Department of Physiology, Medical College of Wisconsin
09/2021 –	Professor (tenured), Department of Molecular Pharmacology and Physiology, Morsani College of Medicine, University of South Florida
09/2021 –	Director of Hypertension and Kidney Research Center, Morsani College of Medicine University of South Florida
09/2021 –	BLRD/CSRD Non-Clinician Investigator appointment, James A. Haley Veterans' Hospital

AWARDS AND HONORS (travel awards are not included):

1999	Award for M.Sc. Thesis, St. Petersburg Natural Science Society
2000	Award for the best poster at the 3 rd Conference “Human and health”, St. Petersburg, Russia
2000	Award for the best poster at Advanced Workshop” Membrane and Signaling”, Kiev, Ukraine
2000	Ph.D. Student Recognition Award, St. Petersburg Administration
2001	Award for the best poster at the 5 th Conference of Young Scientists, Pushchino, Russia
2001	Ph.D. Student Recognition Award, St. Petersburg Administration
2004	Barbara H. Bowman Research Award for Academic Excellence, University of Texas Health Science Center at San Antonio (the best postdoctoral fellow at UTHSCSA)
2005	Recognition Award for Meritorious Research by a Young Investigator, American Physiological Society, Cell & Molecular Physiology Section
2007	Finalist for the American Physiological Society's Renal Section Amgen Postdoctoral Excellence in Research Award
2008	Carl W. Gottschalk Research Scholar, American Society of Nephrology
2009	ERA-EDTA and ISN Award for the best rated abstract at the World Congress of Nephrology, Milan, Italy
2009	Recognition Award for Meritorious Research by a Young Scientist, Renal Section of the American Physiological Society
2010	New Investigator Award, American Physiological Society, Renal Section of the American Physiological Society
2010	Ryuji & Ueno Foundation Award for Ion Channels or Barrier Function Research, the American Physiological Society
2011	Lazaro J. Mandel Young Investigator Award, the American Physiological Society
2012	Dynasty Foundation Grant for Short-Term Visit to Russia
2013	Young Investigator Award, Renal Section of the American Physiological Society
2014	Award for the best abstract at the 51 st ERA-EDTA Congress in Amsterdam, the Netherlands
2014	Faculty Service Award, Medical College of Wisconsin
2015	Young Scholars Award, American Society of Hypertension
2015	Star Reviewer, American Journal of Physiology: Renal Physiology
2016	Established Investigator Award, American Heart Association
2016	Outstanding Graduate School Teacher Award, Medical College of Wisconsin
2017	Research Career Enhancement Award, American Physiological Society
2017	Fellow, American Heart Association (KCVD Council)
2017	Mid-Career Award for Research Excellence, Hypertension Council of the American Heart Association
2017	Star Reviewer, American Journal of Physiology: Cell Physiology
2018	MCW Eminent Scholar (equivalent to Endowed Chair)
2018	Fellow, American Society of Nephrology
2018	Paper of the Year; American Journal of Physiology: Renal Physiology
2019	Fellow, American Physiological Society
2021	Frontiers in Physiology Outstanding Associate Editor Award
2021	University of South Florida Outstanding Postdoc Mentor Award
2022	American Society of Nephrology Midcareer award - Distinguished Researcher award

MEMBERSHIPS IN HONORARY AND PROFESSIONAL SOCIETIES:

2002 – 2011	Biophysical Society (Member)
2004 – Present	American Physiological Society (Member, Fellow since 2019)
2007 – Present	American Society of Nephrology (Member; Fellow since 2018)
2008 – 2014	International Society of Nephrology (Member)
2009	National Kidney Foundation (Member)
2010 – Present	American Heart Association; Council on Kidney in Cardiovascular Disease (Member; Fellow since 2017)
2010 - 2017	American Diabetes Association (Member)

EDITORSHIPS/EDITORIAL BOARDS/JOURNAL REVIEWS:Editorship

2012 – Present	Frontiers in Renal and Epithelial Physiology (Associate Editor)
2009 – 2011	PPAR Research (Associate Editor)
2013 – 2014	PPAR Research (Guest Editor of Special Issue on PPAR regulation of systemic and pulmonary arterial pressure)
2016 – Present	Scientific Reports (Associate Editor)
2020 – Present	American Journal of Physiology: Renal Physiology (<u>Deputy Editor</u>)

Editorial Board

2011 – 2017	PPAR Research (Editorial Board)
2012 – Present	American Journal of Physiology: Renal Physiology (<u>Renal Ambassador</u> , 2015; <u>Star Reviewer</u> , 2015)
2012 – Present	American Journal of Physiology: Cell Physiology (<u>Star Reviewer</u> , 2017)
2019 – Present	<i>Kidney360</i>
2020 – Present	Faculty Opinions, Renal Function & Transport Physiology Section (Faculty Member)
2020 – Present	BMC Nephrology

Journal Review for (in alphabetical order):

ACS Chemical Neuroscience
 American Journal of Cardiology
 American Journal of Physiology: Cell Physiology
 American Journal of Physiology: Lung Cellular and Molecular Physiology
 American Journal of Physiology: Regulatory, Integrative and Comparative Physiology
 American Journal of Physiology: Renal Physiology
 American Heart Association Statements
 Arteriosclerosis, Thrombosis, and Vascular Biology
 Biochimica et Biophysica Acta (BBA) – Molecular Basis of Disease Biochimie
 Biochimica et Biophysica Acta (BBA) – Molecular Cell Research
 Bioelectromagnetics Journal
 BioMed Research InternationalBioTechniques
 BMC Biochemistry
 BMC Nephrology
 BMC Physiology
 British Journal of Pharmacology
 Cell and Tissue Research
 Cell Calcium
 Cell Death & Disease
 Cells
 Cellular and Molecular Life Sciences
 Cellular Physiology and Biochemistry
 Chemical Reviews
 Circulation
 Circulation Research

Clinical and Experimental Pharmacology and Physiology
Clinical and Translational Medicine
Clinical Science
Comparative Biochemistry and Physiology - Part A: Mol & Integr Physiology
Comparative Biochemistry and Physiology - Part C: Toxicol & Pharmacol
Current Medicinal Chemistry
Current Molecular Pharmacology
Diabetologia
Diabetes
Elsevier Biomedical Research Division, Books proposals
Endocrine
European Biophysics Journal
European Journal of Pharmacology
Experimental Biology and Medicine
Experimental Cell Research
Experimental Physiology
FASEB Journal
Frontiers in Medicine
Frontiers in Pediatrics - Pediatric Nephrology
Frontiers in Pharmacology - Experimental Pharmacology and Drug Discovery
Frontiers in Physiology - Membrane Physiology and Biophysics
Frontiers in Physiology - Renal and Epithelial Physiology
Gene
Hypertension
Inflammation
International Journal of Molecular Sciences
JCI Insight
Journal of the American Heart Association
Journal of the American Society of Nephrology
Journal of Applied Physiology
Journal of Biological Chemistry
Journal of Cellular Biochemistry
Journal of Cellular Physiology
Journal of Clinical Investigation
Journal of Diabetes and its Complications
Journal of Diabetes Research
Journal of General Physiology
Journal of Hypertension
Journal of Membrane Biology
Journal of Physiology and Pharmacology
Journal of the Renin-Angiotensin-Aldosterone System
Journal of Vascular Research
Journal of Visualized Experiments
Kidney & Blood Pressure Research
Kidney International
Mini-Reviews in Medicinal Chemistry
Molecular Biology of the Cell
Molecular Biology Reports
Molecular Metabolism
Molecular Neurobiology
Molecular Pharmacology
Nature Communications
Nature Reviews Nephrology
Neuroscience Letters
Osteoporosis International

Oxidative Medicine and Cellular Longevity
 Pflügers Archiv - European Journal of Physiology
 Physiological Genomics
 Physiological Reports
 Physiological Reviews
 PLoS One
 Principles of Human Physiology (John Wiley & Sons)
 Proceedings of the National Academy of Sciences U. S. A.
 Science Advances
 Science Translational Medicine
 Scientific Reports
 Small GTPases
 Theranostics Toxicology and Applied Pharmacology
 Therapeutics and Clinical Risk Management
 Trends in Molecular Medicine
 Trends in Pharmacological Sciences

NATIONAL ELECTED/APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:

Committee

04/2007 Protocol Meeting, Springer Science & Humana Press
 2011 – 2013 American Physiological Society; International Physiology Committee
 2011 – 2018 American Physiological Society, Renal Section; Awards Committee (Member (2011-2014) /
 Co-Chair (2014 - 2016) / Chair (2016 – 2018)
 2014 – 2018 American Physiological Society, Renal Section; Steering Committee
 2014 – 2016 American Physiological Society; Awards Committee
 2014 Brazilian Society of Physiology; Alvaro Osorio de Almeida Award Committee
 2014 – 2022 American Heart Association, Kidney in Cardiovascular Disease Council; Scientific & Clinical
 Education Lifelong Learning Committee (SCILL) (Member (2014-2015) / Vice-Chair (2015) /
Chair; (2016-2018) / Member (2020-2022)
 2015 – 2018 American Heart Association; Committee on Scientific Sessions Program (CSSP)
 2015 – 2024 American Heart Association, Kidney in Cardiovascular Disease Council; Leadership
 Committee
 2016 – 2021 American Heart Association; Scientific Sessions, “4.18 Cardiorenal Physiology /
 Pathophysiology”, Session Builder
 2016 American Society of Nephrology; Programming, Chair of category Hypertension: Basic
 2017 – 2018 American Physiological Society; Awards Task Force Committee
 2017 American Society of Nephrology; Foundation Campaign Committee
 2018 – 2019 American Physiological Society; Awards Oversight Committee
 2018 – 2021 American Physiological Society; Awards Committee, Chair
 2018 – 2024 American Heart Association, Kidney in Cardiovascular Disease Council; Nominating
 Committee (2020-2022 – Vice-Chair; 2022-2024 – Chair)
 2018 – 2023 American Heart Association, Hypertension Council; Hypertension Fall Specialty Conference
 Planning Committee (2021-2022 – Vice-Chair)
 2018 – 2022 American Heart Association; Science Advisory and Coordinating Committee
 2019 FASEB Summer Conference on Recent Advances and New Frontiers on Renal Hemodynamics;
 Advisory Committee
 2018 – 2024 American Heart Association, Kidney in Cardiovascular Disease Council; (Chair-elect (2018-
 2020) / Chair (2020-2022) / Immediate Past-Chair (2022-2024))
 2019 – 2023 American Heart Association, Kidney in Cardiovascular Disease Council; Kidney and Heart
 Disease Science Committee (Vice-Chair 2019-2021 / Chair (2021-2023))
 2020 – 2022 American Heart Association, Kidney in Cardiovascular Disease Council; Membership &
 Communications Committee
 2020 American Society of Nephrology; Programming: Fluid, Electrolyte, and Acid-Base Disorders

2020 – 2022	American Heart Association, Kidney in Cardiovascular Disease Council; Awards Committee, <u>Chair</u>
2020 – 2022	American Heart Association, Hypertension Council; HTN Scientific & Clinical Education Lifelong Learning Committee (SCILL)
2020 – 2023	American Heart Association, Hypertension Council; <u>Leadership Committee</u>
2021 – 2023	American Society of Nephrology; YIA Selection Subcommittee
2021	Basic Research Forum for Emerging Kidney Scientists, Specific Aims Workshop
2022	International Society of Nephrology (ISN) World Congress of Nephrology, Abstract reviewer for Section “Physiology of Tubular Function and Tubulointerstitial Kidney Disease, Renal Model Systems (Organoids and Kidney on a Chip)”
2022	APS/ASN Summer Conference, Organizing Committee member
2023-2024	American Society of Nephrology, Awards Selection Committees

Grant Reviewer

2007	Diabetes, UK
2008	University of Missouri Research Board Grants
2010	Swiss National Science Foundation
2011-2016	U.S. Department of Veterans Affairs, Merit Review Nephrology Study Section (2011-2014 – <i>Ad Hoc</i> ; <u>2014-2016 – Standing member</u> ; <u>2015-2016 – Chair</u>)
2011, 2019	Medical Research Council, UK
2012	Clinical and Translational Science Institute of Southeast Wisconsin, Pilot Grant Projects
2012	NIH, Kidney Molecular Biology and Genitourinary Organ Development [KMBD] Study Section
2013, 2014	National Kidney Foundation of Maryland
2013, 2015	Department of Defense, Congressionally Directed Medical Research Programs (Polycystic Kidney Disease)
2013	Department of Defense, Congressionally Directed Medical Research Programs (Chronic Kidney Disease)
2014	Kansas University Medical Center CoBRE Pilot Review Projects
2014	NIH, ZRG1 DKUS C Special Emphasis Study Section
2015	NIH, NIDDK GRB-G (PKD Centers) Special Emphasis Study Section
2015-2017	American Diabetes Association, Research Grant Review Committee, <u>Standing member</u>
2015	NIDDK-sponsored Indiana Diabetes Research Center P&F proposals
2015-2017	Swiss National Science Foundation
2016, 2018	National Science Centre, Poland
2016	Israel Science Foundation
2017	American Heart Association, Cell Trans BSc 2 Committee
2017-2019	FWF Austrian Science Fund
2017	Diabetes, UK
2017	NIH, Kidney Molecular Biology and Genitourinary Organ Development [KMBD] Study Section
2018	American Heart Association, Molecular Signaling & Cell Trans Committee 1
2018	The Netherlands Organization for Scientific Research (ZonMw/NWO)
2018-2020	American Diabetes Association, Research Grant Review Committee, <u>Standing member</u>
2018	Department of Defense, Congressionally Directed Medical Research Programs (Diabetes)
2018	NIH, ZRG1 DKUS-H (54) Special Emphasis Study Section
2018 (02 & 10)	NIH, Kidney Molecular Biology and Genitourinary Organ Development [KMBD] Study Section
2018	The Italian Ministry for Education, University and Research (MIUR)
2019	Juvenile Diabetes Research Foundation (Novel Adjunctive Therapeutic Strategies)
2019	Department of Defense, Congressionally Directed Medical Research Programs (Urologic Diseases Study Section; PKD and FSGS).
2019	French National Research Agency (ANR); Panel “CE14 - Physiologie et physiopathologie”
2019	United Arab Emirates University of Sharjah Competitive Research Grants

2019-2020	Advancing a Healthier Wisconsin Endowment Collaborative Research Projects for Improved Health
2019, 2021, 2022	Washington University Diabetes Research Center (Pilot and Feasibility grants)
2019	American Heart Association, Cell Trans Committee (fellowships); <u>Chair</u>
2020	American Heart Association, Career Development Award Basic Sciences 2
2020	American Heart Association, COVID-19 Grants
2020	NIDDK, ZDK1 GRB-M Rebuilding a Kidney Special Emphasis Study Section
2020	American Diabetes Association, COVID-19 Grants
2020	Department of Defense, PRMRP DIS-UD
2020	Department of Defense; PRMRP FP-PKD, <u>Chair</u>
2020, 2021	Swiss National Science Foundation
2020	NIH, ZRG1 DKUS-P Special Emphasis Study Section, <u>Vice-Chair</u>
2021	American Heart Association, Cell Trans Committee (fellowships); <u>Chair</u>
2021	NIDDK Diabetic Complications Consortium (DiaComp) Pilot & Feasibility projects
2021	Czech Science Foundation
2021	MCW CVC Keelan and Translational Cardiovascular Awards committee, <u>Chair</u>
2021	Department of Defense; PRMRP FP-PKD, <u>Chair</u>
2021	NIH, ZRG1 VH-D (02) M Special Emphasis Study Section
2021, 2022	Polycystic Kidney Disease Research Resource Consortium
2022	NIH, ZDK1 GRB-K (M1) Special Emphasis Study Section
2022	Arkansas Biosciences Institute Pilot Grants
2022	NIH, ZRG1 DKUS-W (05) M Special Emphasis Panel, <u>Chair</u>
2022	Singapore National Research Foundation Competitive Research Programme
2023	American Heart Association, Innovative Project Award Vascular Basic Sciences
2023	Kidney Research UK
2023	NIH, Pathobiology of Kidney Disease (PBKD) Study Section
2023	NIH, George M. O'Brien Kidney NRCs and NCC, <u>Acting Chair</u>

RESEARCH GRANTS, CONTRACTS, AWARDS, PROJECTS:

Active (Peer Review)

Title: Renal ion channels in the control of blood pressure
Source: NIH/NHLBI (R35 HL135749)
PI's: Alexander Staruschenko, PhD
Role: PI
Dates: 01/15/2017 – 12/31/2023
Direct Funds: \$2,406,865 (direct cost for all years)

Title: Renal diabetic complications mediated by the PAR1 signaling in podocytes
Source: NIH/NIDDK R01 DK129227
PI's: Staruschenko/Palygin
Role: PI
Dates: 09/06/2022-05/31/2026
Direct Funds: \$890,000 (direct cost for all years)

Title: Sexual dimorphisms and role of the cGAS-STING pathway in diabetic nephropathy
Source: NIH/NIDDK R01 DK135644
PI's: Staruschenko
Role: PI
Dates: 04/01/2023-03/31/2027
Direct Funds: \$1,372,480 (direct cost for all years)

* - recommended for funding

Title: Purinergic control of calcium flux in podocytes
Source: VA BLR&D I01 BX004024
PI's: Alexander Staruschenko, PhD
Dates: 10/01/2018 – 09/30/2023 (NCE)
Role: PI
Direct Funds: \$939,932 (direct cost for all years)

Title: Transport and metabolism in the kidney
Source: VA BLR&D I01 BX004024-05
PI's: Alexander Staruschenko, PhD
Dates: 07/01/2023 – 06/31/2027
Role: PI
Direct Funds: \$1,068,172 (direct cost for all years)
* - Renewal; recommended for funding

Title: Smart patch of podocytes
Source: NIH/NIDDK R21 DK129882
PI's: Staruschenko
Dates: 09/15/2021 – 06/30/2023
Role: PI
Direct Funds: \$275,000

Title: Contribution of opioid receptor signaling towards the development of salt-sensitive hypertension
Source: AHA Transformational Project Award TPA35490039
PI's: Alexander Staruschenko, PhD
Role: PI
Dates: 07/01/2022 – 06/30/2025
Direct Funds: \$273,000 (direct cost)

Title: Hypertension Scientific Sessions 2022
Source: NIH/NHLBI R13 HL165801
PI's: Staruschenko
Role: PI
Dates: 08/01/2022-07/31/2023
Direct Funds: \$40,000

Title: Progressive seizure-induced cardiorespiratory dysfunction in a novel mutant rat model of seizure disorder
Source: NIH/NHLBI R01 HL122358
PI's: Matthew Hodges, PhD
Dates: 04/01/2021-03/31/2025
Role: Co-I (PI on Sub-Contract)
Direct Funds: 5% effort (subcontract to USF)

Title: The synthetic kidney: a revolutionary solution for the shortage of kidneys for transplantation
Source: NIH/NIDDK DP2 DK135739
PI's: Zhongwei Li, PhD
Dates: 09/15/2022 – 08/31/2027
Role: Co-I (PI on Sub-Contract)

Direct Funds: \$60,000 (subcontract to USF)

Title: Per1 and the kidney clock in hypertension
Source: NIH/NIDDK R01 DK109570
PI's: Michelle L. Gumz, PhD
Dates: 09/15/2017 – 05/31/2023 (NCE)
Role: Co-I (PI on Sub-Contract)
Direct Funds: \$82,170 (subcontract to USF)

Title: Development of distal nephron diuretics targeting Kir4.1/5.1 heteromeric potassium channels
Source: NIH/NIDDK R01 DK120821
PI's: Jerod Denton, PhD
Dates: 9/15/2019-6/30/2023 (NCE)
Role: Co-I (PI on Sub-Contract)
Direct Funds: \$120,000 (subcontract to USF)

Title: The Role of CIC-6 in Vascular Control of Blood Pressure
Source: NIH/NHLBI K99 HL153686
PI's: Christine Klemens, PhD
Role: Mentor
Dates: 08/02/2021-07/31/2026
Direct Funds: \$690,000 (direct cost for all years)

Completed (Peer Review)

Title: Renal sphingosine-1-phosphate receptor 1 in the control of sodium excretion and blood pressure
Source: NIH/NHLBI R01 HL145163
PI's: Ningjun Li, PhD
Dates: 12/01/2020 – 03/31/2022
Role: Co-I (PI on Sub-Contract)
Direct Funds: \$84,000 (subcontract to USF)

Title: PAR-mediated calcium influx in podocytes
Source: APS Postdoctoral Fellowship
PI's: Ruslan Bohovyk, PhD
Role: Mentor
Dates: 11/01/2021-10/31/2022
Direct Funds: \$50,000

Title: Sexual dimorphisms and role of cGAS-STING Pathway in T2DN rats
Source: NIH/NIDDK DiaComp Pilot & Feasibility grant
PI's: Staruschenko
Dates: 11/01/2020 – 06/30/2022
Role: PI
Direct Funds: \$64,102

Title: Renal mechanisms in blood pressure control
Source: NIH/NHLBI P01 HL116264

PI's: Allen Cowley Jr., PhD
Role: Director of Core C – Physiology
Dates: 01/01/2018 – 08/31/2021
Direct Funds: \$6,038,124 (direct cost for all years); \$901,516 (Core C only)

Title: Interplay between Kir4.1/Kir5.1 channels, RAAS and electrolyte balance
Source: NIH/NIDDK F31 DK122647
PI's: Anna Manis
Role: Mentor
Dates: 07/01/2019 – 06/30/2022 (terminated earlier due to Ph.D. defence)
Direct Funds: \$177,048 (direct cost)

Title: Role of opioid receptor signaling in the development of hypertension and kidney injury
Source: AHA Postdoctoral fellowship 20POST35180224
PI's: Daria Golosova, MD, PhD
Role: Mentor
Dates: 01/01/2020 – 12/31/2021
Direct Funds: \$135,352 (direct cost)

Title: Exploring the Causes of Sudden Unexpected Death in Epilepsy
Source: Herman W. Ladish Family Foundation, Inc
PI's: Hodges/Staruschenko/Palygin
Dates: 7/1/2019-6/30/2021
Role: Co-I
Direct Funds: \$50,000

Title: Role of ENaC-mediated sodium reabsorption in the development of PKD
Source: American Heart Association (16EIA26720006; Established Investigator Award)
PI's: Alexander Staruschenko, PhD
Role: PI
Dates: 1/1/2016 - 8/31/2021
Direct Funds: \$363,635 (direct cost for all years)
*6/1/2019 - 8/31/19; SURE Program to train Underrepresented Racial and Ethnic Groups in biomedical sciences- \$6,000 supplement

Title: CYP/EET Pathway: A Novel Therapeutic Target for HRS
Source: NIH CTSI KL2 Mentored Career Development KL2TR001438
PI's: Michael Yeboah, MBChB, PhD
Role: Co-Mentor
Dates: 11/01/2020 – 10/31/2022*
Direct Funds: \$279,400 (direct cost for all years)
* - ended due to unexpected death of PI

Title: Role of p66Shc in Regulation of Microvascular Reactivity of Renal Blood Vessels
Source: NIH/NHLBI R01 HL147976
PI's: Andrey Sorokin, PhD
Dates: 7/22/2019 – 08/31/2021
Role: Co-I
Direct Funds: \$1,250,000

Title: The Effect of CLCN6 on Vascular Function and Blood Pressure
Source: NIH/NHLBI T32 HL134643
PI's: Christine Klemens, PhD
Role: Mentor
Dates: 12/01/2017 – 11/30/2020
Direct Funds: \$199,330 (direct cost for all years)

Title: Role of the TRPC6 Channel in the Progression of Diabetic Nephropathy
Source: AHA Predoctoral fellowship 18PRE34030127
PI's: Denisha Spires, BS
Role: Mentor
Dates: 07/01/2018 – 06/30/2020
Direct Funds: \$53,688 (direct cost)

Title: Role of NOX4 in kidney function in salt-sensitive hypertension
Source: NIH/NHLBI (R01 HL122662)
PI's: Allen W. Cowley, Jr., PhD / Alexander Staruschenko, PhD
Role: PI
Dates: 04/1/2015 – 03/31/2019
Direct Funds: \$1,000,000 (direct cost for all years)

Title: Effect of Fructose-induced Changes in Renal Microvascular Function & Blood Pressure
Source: Advancing a Healthier Wisconsin
PI's: John D. Imig, PhD
Dates: 01/01/2018 – 12/31/2019
Role: Co-I (0% effort)
Direct Funds: \$200,000 (direct cost for all years)

Title: Regulation of TRPC channels in podocytes by Angiotensin II and reactive oxygen species
Source: American Diabetes Association (1-15-BS-172)
PI's: Alexander Staruschenko, PhD
Role: PI
Dates: 01/01/2015 – 12/31/2017
Direct Funds: \$300,000 (direct cost for all years)

Title: The Effect of CLCN6 on Vascular Function and Blood Pressure
Source: ASN Ben J. Lipps Postdoc fellowship
PI's: Christine Klemens, PhD
Role: Mentor
Dates: 07/01/2018 – 06/30/2020
* - declined due to overlap with NIH fellowship

Title: The Effect of CLCN6 on Vascular Function and Blood Pressure
Source: AHA Postdoc fellowship
PI's: Christine Klemens, PhD
Role: Mentor
Dates: 07/01/2018 – 06/30/2020
* - declined due to overlap with NIH fellowship

Title: The involvement of ATP-dependent inhibition of ENaC in ARPKD cystogenesis
Source: NIH/NIDDK K99/R00 (DK105160)
PI's: Daria Ilatovskaya, PhD
Role: Mentor (K99 phase 09/21/2015 – 11/30/2017)

Dates: 09/21/2015 – 09/20/2020
Direct Funds: \$654,901

Title: Mechanisms of Nox4 in Diabetic Nephropathy
Source: NIH/NIDDK F32 (DK115033)
PI's: Gregory Blass, PhD
Role: Mentor
Dates: 12/1/2017 – 11/30/2020
Direct Funds: \$183,234

* - declined due to acceptance faculty position and transfer to another institution

Title: Mechanisms and Relevance of Sodium Transport Regulation by AMPK
Source: NIH/NIDDK (2-R01-DK075048)
PI's: Kenneth R. Hallows, MD, PhD
Role: Co-I (PI on subcontract)
Dates: 08/1/2012 – 07/31/2017 (NCE)
Direct Funds: \$140,000 (subcontract to MCW)

Title: Endothelin Signaling and Actions in Renal Mesangium
Source: NIH/NIDDK (1 R01 DK098159)
PI's: Andrey Sorokin, PhD
Role: Co-I
Dates: 09/20/2013 – 08/31/2017
Direct Funds: \$60,500

Title: Purinergic control of TRPC channels in podocytes in T1D
Source: Juvenile Diabetes Research Foundation (1-INO-2016-223-A-N)
PI's: Alexander Staruschenko, PhD
Role: PI
Dates: 6/1/2016 – 5/31/2017
Direct Funds: \$100,000

Title: The contribution of the Atrial Natriuretic Peptide to ENaC-mediated Renal Sodium Reabsorption During Salt-Sensitive Hypertension
Source: MCW Research Affairs Committee (New Faculty Pilot grant)
PI's: Daria Ilatovskaya, PhD
Role: Mentor
Dates: 07/01/2016 - 06/30/2017
Direct Funds: \$25,000

Title: Mechanisms for Cardiovascular Control Early in Diabetes
Source: NIH/NHLBI (2 R01 HL056259)
PI's: Michael Brands, PhD
Role: Co-I (PI on subcontract)
Dates: 06/1/2013 – 05/31/2017
Direct Funds: \$160,000 (subcontract to MCW)

Title: Small Research Equipment
Source: MCW Office of Research
PI's: Alexander Staruschenko, PhD
Role: PI
Dates: 05/09/2017
Direct Funds: \$8,468

Title: Mechanisms and relevance of ENaC regulation by EGF and Rac1

Source: NIH/NHLBI (R01 HL108880)
 PI's: Alexander Staruschenko, PhD
 Role: PI
 Dates: 12/1/2011 – 11/30/2017 (relinquished due to activation of R35)
 Direct Funds: \$1,250,000 (direct cost for all years)

Title: Role of purinergic signaling in hypertension
 Source: MCW Research Affairs Committee (New Faculty Pilot grant)
 PI's: Oleg Palygin, PhD
 Role: Mentor
 Dates: 01/01/2015 - 12/31/2016
 Direct Funds: \$25,000

Title: Regulation of ENaC in salt-sensitive hypertension via inflammation-induced ROS production
 Source: NIH/NHLBI K99/R00 (HL116603)
 PI's: Tengis Pavlov, PhD
 Role: Mentor (K99 phase; 08/15/2013 – 07/31/2015)
 Dates: 08/15/2013 – 07/31/2018
 Direct Funds: \$654,901

Title: Dynamics of H₂O₂ release in salt-sensitive hypertension
 Source: National Kidney Foundation
 PI's: Oleg Palygin, PhD
 Role: Mentor
 Dates: 07/1/2015 – 06/30/2016
 Direct Funds: \$20,000

Title: Regulation of ENaC in servo-controlled Dahl salt-sensitive rats
 Source: MCW Research Affairs Committee
 PI's: Tengis Pavlov, PhD
 Role: Mentor
 Dates: 12/15/2013 - 12/14/2015
 Direct Funds: \$25,000

Title: TRPC6 channel as a target for treatment of the nephrotic syndrome
 Source: American Society of Nephrology (Ben J. Lipps Research Fellowship)
 PI's: Daria Ilatovskaya, PhD
 Role: Mentor
 Dates: 7/1/2013 - 6/30/2015
 Direct Funds: \$100,000

Title: Role of the Epithelial Sodium Channels in ARPKD
 Source: National Kidney Foundation
 PI's: Tengis Pavlov, PhD
 Role: Mentor
 Dates: 07/1/2013 – 06/30/2014
 Direct Funds: \$20,000

Title: MCW Core Service Grant
 Source: MCW Office of Research
 PI's: Alexander Staruschenko, PhD
 Role: PI
 Dates: 04/1/2013 – 03/31/2014
 Direct Funds: \$3,000

Title: Mechanisms of ENaC regulation by insulin and PPAR γ
Source: American Diabetes Association (Basic Science Award 1-10-BS-168)
PI's: Alexander Staruschenko, PhD
Role: PI
Dates: 1/1/2011 - 12/31/2013
Direct Funds: \$290,000

Title: BetaPix-dependent regulation of ENaC-mediated sodium reabsorption
Source: American Heart Association (Postdoctoral Fellowship10POST4140109)
PI's: Tengis Pavlov, PhD
Role: Sponsor
Dates: 7/1/2010 - 6/30/2012
Direct Funds: \$95,224

Title: Proteomics Analysis of Collecting Ducts
Source: Robert D. and Patricia E. Kern Family Foundation
PI's: Tengis S. Pavlov, PhD
Role: Sponsor
Dates: 9/1/2010 - 8/31/2011
Direct Funds: \$20,000

Title: Lazaro J. Mandel Award
Source: American Physiological Society
PI's: Alexander Staruschenko, PhD
Role: PI
Dates: 04/2011
Direct Funds: \$4,000

Title: Ryuji Ueno Award for Ion Channels or Barrier Function Research
Source: American Physiological Society (S&R Foundation)
PI's: Alexander Staruschenko, PhD
Role: PI
Dates: 04/2010
Direct Funds: \$30,000

Title: Regulation of ENaC by small G proteins and cytoskeleton
Source: American Society of Nephrology (Gottschalk Award)
PI's: Alexander Staruschenko, PhD
Role: PI
Dates: 9/1/2008 - 8/31/2010
Direct Funds: \$180,000

Title: Role of PPAR γ in ENaC-mediated renal salt absorption
Source: MCW Research Affairs Committee
PI's: Alexander Staruschenko, PhD
Role: PI
Dates: 1/1/2009 - 12/31/2009
Direct Funds: \$25,000

Title: Structure-function of ENaC
Source: American Heart Association (Scientist Development Grant 0730111N)
PI's: Alexander Staruschenko, PhD
Role: PI
Dates: 1/01/07-12/31/10
Direct Funds: \$260,000

Title: ENaC Stoichiometry
Source: National Kidney Foundation Research Fellowship
PI's: Alexander Staruschenko, PhD
Role: PI
Dates: 7/01/05-6/30/07
Direct Funds: \$80,000

Title: Epithelial Na⁺ Channel Stoichiometry
Source: American Heart Association (Postdoctoral Fellowship #0525231Y;)
PI's: Alexander Staruschenko, PhD
Role: PI
Dates: 7/01/05-6/30/07
Direct Funds: \$80,000

* - declined due to overlap with NKF fellowship

Title: Non-voltage gated sodium channels in human myeloid leukemia K562 cells
Source: Russian Foundation for Basic Research (Personal Grant for Young Scientists)
PI's: Alexander Staruschenko, PhD
Role: PI
Dates: 1/2001 - 12/2001
Direct Funds: Rbl 30,000

INVITED LECTURES/WORKSHOPS/PRESENTATIONS:

International

“Fluorescence resonance energy transfer analysis of subunit stoichiometry of the epithelial Na⁺ channel”, Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia (2004)

“Acute regulation of ENaC by PI3-kinase signaling in native collecting duct principal cells”, 6th International Symposium “Aldosterone and ENaC: From Gene to Disease”, Zermatt, Switzerland (10/2007)

“Regulation of the epithelial Na⁺ channel by Ras, Rho and Rab small GTPases”, Institute of Cytology Russian Academy of Sciences, St. Petersburg, Russia (2008)

“ET-1 regulates the epithelial Na⁺ channel via βPix/14-3-3 complex”, ET-11: American Physiological Society International Conference on Endothelin, Montreal, Canada (09/10/2009)

“Regulation of the epithelial Na⁺ channel by small G proteins and phosphatidylinositides”, Ion channels: Structure and Function Meeting (Co-Chair and Speaker), St. Petersburg, Russia (03/2009)

“Regulation of the epithelial Na⁺ channel by small G proteins”, Universidad de La Laguna, Department of Pharmacology, Tenerife, Spain (05/29/2009)

“Role of small GTPases in the regulation of the epithelial Na⁺ channel”, Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia (02/19/2010)

“Regulation of ENaC by small G proteins and actin cytoskeleton”, St. Petersburg State University, Department of Physiology, St. Petersburg, Russia (10/2010)

“Cortactin regulates ENaC via Arp2/3 complex”, SICI/RECI III: Trends and challenges in ion channel research meeting, Tenerife, Spain (02/04/2011)

“Role of the epithelial Na⁺ channels (ENaC) in the development of salt-sensitive hypertension and its regulation by EGF”, Sechenov Institute of Evolutionary Physiology and Biochemistry Russian Academy of Sciences, St. Petersburg, Russia (12/2012)

“Angiotensin II-mediated ATP release and calcium signaling in the kidney”, Institute of Cytology Russian Academy of Sciences, St. Petersburg, Russia (12/2012)

“Regulation of TRPC channels in podocytes and their role in glomerular diseases”, Medical University of Gdansk, Gdansk, Poland (05/2014)

“Mechanisms and relevance of ENaC regulation by EGF: role in the development of salt-sensitive hypertension and PKD”, session “Water and salt” at the 51st ERA-EDTA Congress, Amsterdam, The Netherlands (06/2014).

“Patch clamp and calcium measurements: new tools to study TRPC function in the podocytes of freshly isolated glomeruli” 10th International Podocyte Conference, Freiburg, Germany (06/2014).

Organizer, Chair and Speaker “Regulation of TRPC channels in the podocytes and their role in the glomerular diseases” at the Symposium “Channelopathies in the kidney”, 1st PanAmerican Congress of Physiological Sciences, Iguassu Falls, Brazil (08/2014).

“ENaC regulation by RhoGDI α /Rac1 and EGF”, Invited Speaker at the 8th International Symposium “Aldosterone, MR, and Salt – What’s new?”, Zermatt, Switzerland (10/2015).

“Mechanisms and relevance of ENaC regulation by EGF: role in the development of salt-sensitive hypertension and PKD”, Leeds University, UK (10/2015).

“Purinergic signaling in the kidney in response to changes in the arterial pressure”, Oral talk at the session “Novel renal mechanisms of cardiovascular control”, 3rd International Conference “Neural, hormonal and renal interactions in blood pressure control”, Mussoorie, India (12/08/2015).

“Calcium handling by the podocytes in diabetic nephropathy”, Invited talk at the 5th Congress of Russian Physiological Society, Dagomys (Sochi), Russia (10/2016).

“Essential role of K_{ir}4.1/K_{ir}5.1 channels in renal salt handling and blood pressure control”. Invited Speaker at the “Cell Biology: Problems and Perspectives”, St. Petersburg, Russia (10/02/2017)

“Calcium signaling in podocytes”, Sechenov Institute of Evolutionary Physiology and Biochemistry Russian Academy of Sciences, St. Petersburg, Russia (12/7/2017)

“Critical Role of NOX4/TRPC6 Pathway in Podocyte Calcium Regulation and Kidney Damage in Diabetic Nephropathy” 12th International Podocyte Conference, Montreal, Canada (06/1/2018).

“Beneficial effects of high potassium: contribution of renal basolateral K⁺ channels”, British and Irish Hypertension Society Annual Scientific Meeting, Cambridge, UK (09/24/2018).

Chair of session “Understanding Tubule Injury and Function session”, Keystone Symposia on Diabetes: Innovations, Outcomes and Personalized Therapies/Unraveling the Secrets of Kidney Disease, Whistler, Canada (3/5/2019).

“Calcium signaling in diabetic kidney disease”, Session “Hot topics in chronic kidney disease”, Federation of European Physiological Societies and the Italian Physiological Society. Bologna, Italy (09/12/2019).

“Contribution of opioid receptor signaling in podocytes towards the development of salt-sensitive hypertension and kidney injury”, Symposium “The hypertension spectrum in CKD: pathophysiology and risk”. 57th ERA-EDTA Congress. Milan, Italy (June 6-9, 2020). *-live streaming presentation.

“Application of SICM to study live human glomerulus”. International school-conference "Scanning Probe Microscopy for Biological Systems – 2021". Moscow, Russia (November 24-26, 2021).

National

“Mechanosensitive cation channels in human leukaemia cells: single current measurements”, University of Texas Health Science Center at San Antonio, Department Physiology, San Antonio, TX (2003)

“Activation of ENaC reconstituted in CHO cells by the small G-protein K-Ras”, Annual Meeting of Experimental Biology “Translating the Genome”, Session Epithelial Na⁺ and K⁺ channels, Washington DC (04/2004)

“ENaC stoichiometry”, 37th Annual Meeting and Scientific Exposition of the American Society of Nephrology, Session ENaC, St. Louis, MO (10/2004)

“Subunit composition of epithelial Na⁺ channel”, 49th Annual Meeting of the Biophysical Society, Platform Epithelial Channels & Physiology, Long Beach, CA (02/2005)

“Ras superfamily small GTPases activate the epithelial Na⁺ channel”, 49th Annual Meeting of the Biophysical Society, Platform Epithelial Channels & Physiology, Long Beach, CA (02/2005)

“Regulation of ENaC by small G proteins”, Pre-Experimental Biology Meeting – Regulation of Renal Transport by Aldosterone and Vasopressin, San Francisco, CA (04/2006)

“Acute regulation of ENaC by PI3-K in native principal cells”, Pre-Experimental Biology Meeting – Transport and the Kidney, Washington, DC (04/27/2007)

“G-protein-coupled receptor (GPCR) regulation of acid-sensing ion channel 1a”, Annual Meeting of Experimental Biology “Translating the Genome”, Session Novel Ion Channels in Neurocardiovascular Regulation: Focus on ASIC and TRP Channels, Washington, DC (05/02/2007)

“Phosphatidylinositolide regulation of ENaC in native principal cells”, Pre-American Society of Nephrology Meeting – Water and Electrolyte Balance, San Francisco, CA (11/2007)

“Regulation of the epithelial Na⁺ channel by small G proteins”, University of California at San Francisco, Renal Research Seminar, San Francisco, CA (02/20/2007)

“Regulation of the epithelial Na⁺ channel by small G proteins”, Louisiana State University Health Science Center, Department of Physiology, New Orleans, LA (03/13/2007)

“Regulation of the epithelial Na⁺ channel by small G proteins”, University of Rochester Medical Center, Department of Pharmacology and Physiology, Rochester, NY, (04/03/2007)

“Regulation of the epithelial Na⁺ channel by small G proteins”, University of Florida, Department of Physiology, Gainesville, FL (04/09/2007)

“Regulation of the epithelial Na⁺ channel by small G proteins”, University of Arizona, Department of Physiology, Tucson, AZ (04/19/2007)

“Regulation of the epithelial Na⁺ channel by small G proteins”, University of Iowa Carver College of Medicine, Department of Pharmacology, Iowa City, IA (05/10/2007)

“Regulation of ENaC by phosphatidylinositides in native principal cells”, The University of Texas Health Science Center at San Antonio, Department of Physiology Annual Retreat, Mayan Ranch, Bandera, TX (10/2007)

“Regulation of the epithelial Na⁺ channel by small G proteins”, Henry Ford Hospital, Hypertension and Vascular Research Center, Detroit, MI (09/15/2009)

“Regulation of the epithelial Na⁺ channel by small G proteins”, Emory University, Department of Physiology, Atlanta, GA (01/21/2010)

“Regulation of ENaC by EGF and Rac1/WAVE proteins”, Epithelial Physiology and Cell Biology Meeting, Telluride, CO (08/03/2010)

Co-Organizer and Co-Chair for Experimental Biology Symposium "Epithelial Ion Channel Trafficking", Washington, DC (04/2011)

“Mechanisms of the epithelial Na⁺ channel (ENaC) regulation by growth factors and small GTPases”, Georgetown University, Department of Medicine, Combined Seminar of the Division of Endocrinology and Metabolism and Division of Nephrology and Hypertension, Washington, DC (06/01/2011)

“Mechanisms and relevance of ENaC regulation by growth factors”, Epithelial Physiology and Cell Biology Meeting, Telluride, CO (08/09/2011)

“Mechanisms and Physiological Importance of ENaC Regulation by Growth Factors and Small GTPases”, 7th International Symposium on Aldosterone and the ENaC/Degenerin Family of Ion Channels: Molecular Mechanisms and Pathophysiology, Pacific Grove, CA (09/19/2011)

“Mechanisms and physiological importance of ENaC regulation by members of the EGF-family”, Georgia Health Sciences University, Department of Medicine, Division of Experimental Medicine, Augusta, GA (10/06/2011)

“Role of the epithelial Na⁺ channel (ENaC) in the development of salt sensitive hypertension”, University of California, San Diego, Division of Nephrology-Hypertension. La Jolla, CA (02/28/2012).

Epithelial Physiology and Cell Biology Meeting, “ENaC and salt sensitive hypertension”, Telluride, CO (08/02/2012)

“Role of the epithelial Na⁺ channel (ENaC) in the development of salt-sensitive hypertension”, Old Dominion University, Frank Reidy Research Center for Bioelectrics. Norfolk, VA (08/10/2012).

“Role of the epithelial Na⁺ channel (ENaC) in salt-sensitive hypertension and mechanisms of its regulation by EGF”, University of Texas Health Science Center at Houston, Department of Integrative Biology & Pharmacology. Houston, TX (01/28/2013).

Co-Chair at the West Coast Salt & Water Club meeting. Session “K⁺ channel regulation and function”. Morro Bay, CA (03/2013)

Co-Organizer and Co-Chair at the Experimental Biology meeting. Symposium "Mechanosensory Mechanisms in the Kidney", Boston, MA (04/2013)

Co-Organizer, Co-Chair and Speaker at the Experimental Biology meeting. Session "Regulation of Ion Transport in the Aldosterone-Sensitive Distal Nephron", Title of the talk: “Mechanisms of ENaC regulation in the Aldosterone-Sensitive Distal Nephron” Boston, MA (04/2013)

“Role of the epithelial Na⁺ channel (ENaC) in salt-sensitive hypertension and mechanisms of its regulation by EGF”, University of Tennessee Health Science Center, Department of Physiology. Memphis, TN (11/21/2013).

“Role of the epithelial Na⁺ channel in salt-sensitive hypertension and mechanisms of its regulation”, Emory University, Department of Physiology, Atlanta, GA (12/12/2013)

“Role ENaC in the development of salt-sensitive hypertension and mechanisms of its regulation by EGF and Rac1”, Pittsburgh University, Renal-Electrolyte Division, Pittsburgh, PA (02/07/2014)

“Mechanisms and relevance of ENaC regulation by EGF: role in the development of salt-sensitive hypertension and PKD”, Kidney Institute, University of Kansas Medical Center, Kansas City, KS (11/21/2014)

“EGF-Mediated ENaC Regulation in Hypertension”, Awards Session at the American Society of Hypertension Meeting, New York, NY (05/18/2015)

“Real-Time *ex vivo* and *in vivo* Electrochemical Detection of ATP in the Kidney”, Plenary Lecture at the ASN Ancillary Meeting of the Renal Purinergic Club “Extracellular Nucleotides, Nucleosides and Energy Metabolites in the Kidney: Physiology, Pathophysiology and Therapeutic Potential”, San Diego, CA (11/04/2015).

“How Mutations in TRPC6 Lead to Glomerular Disease”, Invited Speaker at the Symposium “TRPing All over the Kidney: It's Not Just the Tubules”, American Society of Nephrology Meeting | Kidney Week, San Diego, CA (11/05/2015).

“Role of the epithelial Na⁺ channel in the development of salt-sensitive hypertension”, Department of Pharmacology and Toxicology, Virginia Commonwealth University, Richmond, VA (11/17/2015)

“TRPC6 channel as an emerging determinant of podocyte injury” Division of Nephrology, Department of Medicine, Icahn School of Medicine at Mount Sinai, New York, NY (01/15/2016)

“Role of TRPC6 channels in the development of diabetic nephropathy”, Lilly Research Laboratories, Indianapolis, IN (01/26/2016)

“Role of TRPC channels in the development of DN: mechanisms of TRPC regulation by Ang II and ATP”, Renal Research Conference, Division of Nephrology, Indiana University School of Medicine, Indianapolis, IN (01/27/2016)

“TRPC6 channel as an emerging determinant of podocyte injury”, Department of Pharmacology & Toxicology, University of Mississippi Medical Center, Jackson, MS (02/15/2016).

“TRPC6 channel as an emerging determinant of podocyte injury”, Division of Nephrology, University of Utah School of Medicine, Salt Lake City, UT (03/16/2016).

“Use of patch-clamp analysis to study sodium transport in isolated split-open cortical collecting ducts”, Invited Speaker at the Symposium “Still Unraveling the Mysteries of the Kidney with Isolated Tubules After all these Years”, Experimental Biology Meeting, San Diego, CA (04/2016).

“Calcium signaling as an emerging determinant of podocyte injury in diabetic nephropathy”, Department of Pharmacology & Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR (04/20/2016).

“Real-time *ex vivo* and *in vivo* electrochemical detection of H₂O₂ and ATP in the kidney”, Epithelial Physiology and Cell Biology Meeting, Telluride, CO (07/26/2016).

“Signaling Mechanisms Affecting Nitric Oxide Production in Glomerular Podocytes” AHA Council on Hypertension Scientific Sessions, Session “Renal Hemodynamic and Tubular Mechanisms of Hypertension”, Orlando, FL (09/17/2016).

“Insulin regulated sodium reabsorption in the collecting duct”, Invited Speaker at the Symposium “Diabetes, Metabolism, and Renal Transport”, American Society of Nephrology Meeting | Kidney Week, Chicago, IL (11/17/2016).

“Calcium signaling as an emerging determinant of podocyte injury in diabetic nephropathy”, Division of Nephrology, Vanderbilt University Medical Center, Nashville, TN (11/30/2016).

“Calcium signaling in diabetic nephropathy”, Division of Nephrology, Stony Brook University, New York, NY (02/13/2017).

Chair of Session at the Pre-EB Epithelial Transport Meeting for Young Researchers, Chicago, IL (04/22/2017)

Organizer of Symposium "Regulation of glomeruli physiological function: podocytes and beyond", Experimental Biology Meeting, Chicago, IL (04/25/2017).

“Regulation of ENaC by insulin and IGF-1: are they distinguishable”, Invited Speaker at the Symposium “Sodium retention in the metabolic syndrome- new and old players”, Experimental Biology Meeting, Chicago, IL (04/25/2017).

“Essential role of $K_{ir}4.1/K_{ir}5.1$ channels in renal salt handling and blood pressure control”, American Heart Association Council on Hypertension, Council on Kidney in Cardiovascular Disease, and American Society of Hypertension Joint Scientific Sessions, San Francisco, CA (09/15/2017).

Moderator of session “Renal Vascular Function in Health and Disease”, American Heart Association Council on Hypertension, Council on Kidney in Cardiovascular Disease, and American Society of Hypertension Joint Scientific Sessions, San Francisco, CA (09/16/2017).

“Basolateral potassium channels in renal salt handling and blood pressure control”, Translational Biology and Molecular Medicine Program, Bench-To-Bedside Seminar, Baylor College of Medicine, Houston, TX (09/21/2017).

“Renal Ion Channels in the control of Salt Sensitive Hypertension”, Invited Speaker at the Symposium “Kidney Transporters to the Forefront of Cardiovascular Risk Reduction”, American Heart Association’s Scientific Sessions, Anaheim, CA (11/14/2017).

“Calcium signaling as an emerging determinant of podocyte injury in diabetic nephropathy”, Department of Integrative Physiology and Anatomy, UNT Health Science Center, Fort Worth, TX (01/19/2018).

“Essential role of basolateral $Kir4.1/Kir5.1$ potassium channels in blood pressure control”, Department of Molecular Pharmacology & Physiology, College of Medicine, University of South Florida, Tampa, FL (04/13/2018).

“Basolateral potassium channels in salt handling and blood pressure control”, Department of Pharmacology, New York Medical College, Valhalla, NY (05/16/2018).

“Calcium signaling as an emerging determinant of podocyte injury in diabetic nephropathy”, 11th UT Southwestern O'Brien Kidney Center Symposium, University of Texas Southwestern Medical Center, Dallas, TX (05/17/2018).

“Roles of $Kir5.1$ channels in the control of salt handling, blood pressure, and seizure disorders”, Department of Physiology, Emory University, Atlanta, GA (10/18/2018).

Chair of session “What we are eating: not only sodium”, American Heart Association Scientific Sessions, Chicago, IL (11/10/2018).

“Calcium signaling as an emerging determinant of podocyte injury in diabetic nephropathy”, Division of Nephrology, Johns Hopkins University, Baltimore, MD (01/15/2019).

“Basolateral Kir4.1/Kir5.1 potassium channels in salt handling and blood pressure control”. Session “The kidney and hypertension”. APS/ASN Summer Research Conference “Control of Renal Function in Health and Disease”, Charlottesville, VA (June 23-27, 2019).

“Two-photon imaging of intracellular Ca²⁺ handling in smooth muscle cells of freshly isolated arteries.”, Invited speaker at the North American Vascular Biology Organization “Vasculata” meeting, Session on renal vascular biology. Milwaukee, WI (July 15-18, 2019).

Chair of “Signaling and regulation of ENaC and other epithelial channels/transporters-II” session. 9th International Conference of Aldosterone and ENaC in Health and Disease: The Kidney and Beyond. Estes Park, CO (October 2-6, 2019).

“Kir5.1 and Renal Salt Handling”, Invited Speaker at the Symposium “Advances in Renal Ion Channel Physiology”, American Society of Nephrology Meeting | Kidney Week, Washington, DC (November 5-10, 2019).

Moderator of Oral Session AOS3 “Neural, Renal & Vascular Mechanisms in Hypertension”, American Heart Association Council on Hypertension, Council on Kidney in Cardiovascular Disease, and American Society of Hypertension Joint Scientific Sessions (September 10-13, 2020).

Moderator of 9th Annual KCVD Young Investigator Symposium. American Society of Nephrology Meeting, October 21st, 2020.

“Renal potassium channels in salt handling and blood pressure control” Department of Integrative Biology & Physiology, University of Minnesota (02/11/2021).

“Calcium signaling as an emerging determinant of podocyte injury in FSGS and DKD”. Ardelyx (Biotech). April 1st, 2021.

Moderator and Introduction: “Overview of the Award and Its History”, Session “Bodil M. Schmidt-Nelson Distinguished Mentor Award Lecture”. April 29th, 2021.

“The sales pitch: how to sell your science”, TAC symposium “Trainee Funding: Don’t Take it for Granted”, Experimental Biology Meeting, April 28th, 2021.

“The sales pitch: how to sell your science”, Joslin Career Development session. Joslin Diabetes Center, Harvard Medical School, May 27th, 2021.

Moderator of a session “From Biomarkers to Bioactivity: Metabolites and Metabolomes in Kidney Disease”, American Society of Nephrology’s Kidney Week. November 4-7, 2021.

“Renal potassium channels in salt handling and blood pressure control”, Center for Translational Research on Inflammatory Diseases, Baylor College of Medicine (12/09/2021).

“Renal and neurological functions of Kir5.1 (Kcnj16) channels”. Department of Cell and Molecular Physiology, Loyola University (12/16/2021).

Renal Potassium Channels in Salt Handling and Blood Pressure Control. Renal Grand Rounds (Baylor College of Medicine, UT Health Science Center Houston and Methodist/Weill Cornell). 3/9/2022.

“Renal Potassium Channels in Salt Handling and Blood Pressure Control” Brigham and Women’s Hospital and Massachusetts General Hospital Renal Grand Rounds. 3/29/2022.

“A central role for dietary lysine to maintain proximal tubule and kidney health”, Symposium “Entryway to the Nephron: New Insights into Glomeruli and Proximal Tubule Function” Experimental Biology Meeting, Philadelphia, PA; April 2-5, 2022.

Chair of a session “The Kidney & Hypertension” at the 2022 APS/ASN Control of Renal Function in Health and Disease conference. Charlottesville, VA, June 26–30, 2022.

“Mechanisms contributing to kidney injury in type 2 diabetic nephropathy (T2DN) rats” APS/ASN Control of Renal Function in Health and Disease conference. Charlottesville, VA, June 26–30, 2022.

Moderator of a session “Sodium-Potassium Ratio: Effects and the Implications for the Public”, Hypertension 2022 Scientific Sessions. San Diego, CA, September 7th, 2022.

"Physiological and Pathophysiological Roles of Kir5.1 (KCNJ16) in the Kidneys", Symposium “Role of Basolateral Potassium Channel in Potassium Homeostasis and Diseases", American Society of Nephrology's Kidney Week; Orlando, FL; November 3-6, 2022.

Discussion Leader of Session “Cellular and Tissue Plasticity, Organ Remodeling and Imaging”. Gordon Research Conference “The RAAS: Molecular Networking to Multi-System Pathophysiology”. Ventura, CA, November 13-18, 2022.

“TBD”, Division of Nephrology and Hypertension, Renaissance School of Medicine at Stony Brook University, 04/05/2023

Member of “Journal Editors: panel discussion.” 14th International Podocyte Conference. Philadelphia, PA, May 24-26, 2023

Local

“Regulation of the epithelial Na⁺ channel by small G proteins”, Medical College of Wisconsin, Kidney Disease Center, Milwaukee, WI (04/24/2007)

“Regulation of the epithelial Na⁺ channel by small G proteins and cytoskeleton”, Medical College of Wisconsin, Kidney Disease Center, Milwaukee, WI (02/28/2008)

“Acute regulation of the Epithelial Na⁺ Channel by P13-kinase signaling”, Medical College of Wisconsin, Department of Physiology, Milwaukee, WI (03/26/2008)

“Rab11a stimulates trafficking of ENaC”, Medical College of Wisconsin, Confocal microscopy meeting, Milwaukee, WI (08/07/2008)

“Regulation of the Epithelial Na⁺ Channel by small G proteins”, Medical College of Wisconsin, Department of Medicine, Division of Nephrology, Milwaukee, WI (11/04/2008)

“βPix-dependent regulation of sodium reabsorption”, Medical College of Wisconsin, Kidney Disease Center, Milwaukee, WI (12/04/2008)

“EGF and ENaC”, Children’s Research Institute Research Seminar, Milwaukee, WI (12/11/2008)

“Effect of EGF on ENaC in PKD”, Children’s Research Institute Research Seminar, Milwaukee, WI (05/14/2009)

“Regulation of the epithelial Na⁺ channel by small G proteins: involvement of the actin cytoskeleton”, Medical College of Wisconsin, Department of Physiology, Milwaukee, WI (03/10/2010)

“Mechanisms of ENaC regulation by insulin and PPARs”, Medical College of Wisconsin, Renal Group, Milwaukee, WI (03/18/2010)

“Regulation of the epithelial Na⁺ channel (ENaC) by Epidermal Growth Factor (EGF) and small GTPase Rac1”, Medical College of Wisconsin, Hypertension Group, Milwaukee, WI (07/21/2010)

“Mechanisms and physiological importance of ENaC regulation by growth factors and small GTPases”, Medical College of Wisconsin, Hypertension Group, Milwaukee, WI (07/13/2011)

“Mechanisms and physiological importance of ENaC regulation by growth factors and small GTPases”, Medical College of Wisconsin, Research Center of Excellence in Pediatric Nephrology/Kidney Disease Center/Cardiovascular Center Seminar, Milwaukee, WI (09/15/2011)

“Role of the epithelial Na⁺ channel (ENaC) in the development of salt sensitive hypertension”, Medical College of Wisconsin, Department of Physiology, Milwaukee, WI (01/11/2012)

“Novel approaches to study epithelial transport in the kidney”, Medical College of Wisconsin, Epithelial/PKD group meeting, Milwaukee, WI (06/06/2012)

“Physiological and molecular determinants mediating insulin action on sodium reabsorption in collecting duct”, American Diabetes Association-Wisconsin Leadership Board Meeting, Milwaukee, WI (09/07/2012)

“Role of the epithelial Na⁺ channel (ENaC) in salt-sensitive hypertension and mechanisms of its regulation by EGF”, Center for Integrative Research on Cardiovascular Aging, Aurora St. Luke’s Medical Center, Milwaukee, WI (06/14/2013)

“Role of the epithelial Na⁺ channel (ENaC) in the development of salt-sensitive hypertension”, UWM-MCW Biomedical Engineering Seminar Series, Milwaukee, WI (10/31/2014)

“TRPC6 channel as an emerging determinant of podocyte injury”, Medical College of Wisconsin, Department of Physiology, Milwaukee, WI (01/06/2016)

“Spotlight on Science - Applicant insights into K99 grants”, MCW Postdoctoral office special series, Milwaukee, WI (12/12/2016)

“Calcium signaling as an emerging determinant of podocyte injury in diabetic nephropathy” Medical College of Wisconsin, Department of Medicine, Division of Nephrology, Milwaukee, WI (07/11/2017)

“Essential role of K_{ir}4.1/K_{ir}5.1 channels in renal salt handling and blood pressure control”, Medical College of Wisconsin, Hypertension Affinity group, Cardiovascular Center, Milwaukee, WI (09/06/2017)

“Purinergic signaling in the kidney”, Medical College of Wisconsin, Hypertension Affinity group, Cardiovascular Center, Milwaukee, WI (04/11/2018)

“Renal Potassium Channels in Salt Handling and Blood Pressure Control”, Medical College of Wisconsin, Department of Physiology, Milwaukee, WI (09/25/2019)

“Introduction to the Hypertension and Kidney Research Center and research program in the lab”, USF Hypertension and Kidney Research Center, Tampa, FL (5/19/2022)

Organizer and Moderator of the Pre-ASN Hypertension and Kidney Research Center Symposium; Tampa, FL (11/01/2022)

“A central role for dietary lysine to maintain proximal tubule and kidney health”, Research Seminars at James A. Haley Veterans Hospital (11/29/2022)

“Renal Potassium Channels in Salt Handling and Blood Pressure Control”, USF Department of Molecular Medicine Work-in-Progress Seminar, 02/15/2023

COMMITTEE SERVICE:

University of South Florida

- 2021-present Heart Institute Core Facilities and Infrastructure Committee
- 2021-2022 PhD Recruitment Advisory Committee
- 2022-present Organizer of the USF Hypertension and Kidney Research Center Seminar Series
- 2022-2023 Chair of Search Committee for USF Hypertension and Kidney Research Center recruitment

James A. Haley VA Hospital

- 2023- Tampa VA Awards workgroup

Medical College of Wisconsin:

- 2008-2018 Faculty Council Committee (Physiology representative; 2008-2013 – alternate; 2013-2018 – regular member)
- 2012-2020 IACUC Committee (2012-2015 – regular member; 2015-2020 – alternate; 01-07/2017 – regular member; 2021 – alternate;)
- 2012-2015 Research Affairs Committee (regular member)
- 2014-2023 Graduate Studies Council Student Admission & Welfare Committee (2014-2017 – regular member; 2018-2021 – Chair)
- 2021 Physiology Educator Search Committee (member)
- 2021 Chair of Biophysics Search Committee (member)

Clement J. Zablocki VA Medical Center:

- 2015-2017 Subcommittee on Animal Study Committee (regular member)
- 2017-2021 Institutional Biological and Chemical Committee (regular member; 2020-2021 – Chair)

MEDICAL COLLEGE OF WISCONSIN TEACHING ACTIVITIES:

Medical Students

- 2011 Chronic Renal Failure – Cardiovascular/Respiratory/Renal module. M1 students

Graduate Students

- 2012-2021 MCW Graduate School of Biomedical Sciences Faculty
- 2010-2021 Endocrine Regulation and Common Disease – 08210 (lecturer)

2012, 2016-2018 Clinical & Translational Science Institute. Course on Grant Writing (Mock Study Section)

2013 Physiological Genomics (Physiology graduate program)

2013-2021 Special Topics in Physiology – 08275A (Course Director and lecturer)

2015-2021 Advanced Renal Physiology – 08253 (Course Director and lecturer)

High School Students

2019 SUPREMES (Students Understanding Principles of Research Education through Medicine, Engineering, and Science) journal club

2019 ROADS (Research Opportunity for Academic Development in Science) journal club

STUDENTS, FACULTY, RESIDENTS AND FELLOWS MENTORED:

Graduate Students:

Ph.D. Students Advised

Melissa Lowe (Mentor)
2023- present

Adrian Zietara (Mentor)
2019- present (supported by NHLBI T32 Program till 12/2021). 2023 MCW Paper of the Season spring award.

Lashodya Dissanayake (Mentor)
06/2018- 06/2022 Date of defense – 06/24/2022; Title – “The impact of disruption of uric acid homeostasis on the kidney and blood pressure”.

Anna Manis (Mentor (with Dr. Matthew Hodges))
03/2017-12/2021 Date of defense – 11/02/2020; Title – “A critical role of $K_{ir}5.1$ (*Kcnj16*) in cardiorenal and neurorespiratory physiology”.

Denisha Spires, PhD (Mentor)
03/2016-11/2020 Date of defense – 11/02/2020; Title – “Sexual Dimorphisms in Type 2 Diabetic Kidney Disease”.

Daria Ilatovskaya (Co-Mentor with Dr. Yuri Negulyaev, Graduate Program at the Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia; Date of defense: December 14th 2012)

Ph.D. Committees

Perrin Schupbach (2020-present) MCW Department of Microbiology; Primary Mentor: Dr. Andrey Sorokin

Wojciech Jankiewicz (2020-2022) MCW Department of Pharmacology and Toxicology; Primary Mentor: Dr. John D. Imig. Date of defense – 04/15/2022; Title – “Developing therapeutic approaches to chemotherapy-induced nephrotoxicity”.

Marie-Elizabeth A. Barabas, PhD (2011-2014) MCW Department of Cell Biology, Neurobiology & Anatomy; Primary Mentor: Dr. Cheryl Stucky. Date of defense – 03/17/2014; Title – “Roles of TRPA1 and TRPV1 in cutaneous injury-induced hypersensitivity”. Currently – Associate Editor at iScience.

Golosova Daria, PhD (2014-2017) Sechenov Institute of Evolutionary Physiology and Biochemistry Russian Academy of Sciences. St. Petersburg, Russia. Date of defense – 12/19/2017; Title – “Investigation of subtypes of Vasopressin receptors in electrolytes balance of rat kidneys”. Currently

Rotation Students

Melissa Lowe
08/2022-10/2022

Santiago Alvarez (Co-Mentor with Dr. Oleg Palygin)
12/2018-04/2019

Ammar Alsheikh
09/2016-11/2016

Nicholas Burgraff (Co-Mentor with Dr. Oleg Palygin)
03/2016-05/2016

Postdoctoral Fellows / Junior Faculty:

Lashodya Dissanayake, MD, PhD
07/2022-present (Postdoctoral Fellow)

Onur Polat, PhD
05/2022-02/2023 (Postdoctoral Fellow)

Biyang Xu, PhD
01/2022-present (Postdoctoral Fellow)

Ruslan Bohovyk, PhD
03/2021-present (Postdoctoral Fellow)

Olha Kravtsova, PhD
03/2021-present (Postdoctoral Fellow)

Chris Klemens, PhD
09/2017-09/2021 (Postdoctoral Fellow)

Olena Isaeva, PhD
10/2018-08/2021 (Visiting Assistant Professor)

Daria Golosova, MD, PhD
08/2018-08/2021 (Postdoctoral Fellow)

Sherif Khedr, MD, PhD
11/2017-08/2020 (Postdoctoral Fellow)

Evgeny Chulkov, PhD

02/2016-09/2017 (Postdoctoral Fellow)

Gregory Blass, PhD

11/2014-06/2017 (Postdoctoral Fellow)

Daria Ilatovskaya, PhD

04/2013- 10/2015 (Postdoctoral Fellow)

2015 – 2017 (Research Assistant Professor)

Oleg Palygin, PhD

12/2011 - 01/2014 (Postdoctoral Fellow)

Tengis S. Pavlov, PhD

03/2008 – 12/2012 (Postdoctoral Fellow)

01/2013 – 03/2016 (Assistant Professor)

Alexey Karpushev, PhD

01/07/2008-06/30/2010 (Postdoctoral Fellow)

EXTRAMURAL STUDENTS, FACULTY, RESIDENTS, AND CLINICAL/RESEARCH FELLOWS MENTORED:

Junior Faculty:

Chris Klemens, PhD

Research Associate, University of South Florida

09/2021-present

Mentor of K99/R00 Award from NHLBI

Michael Yeboah, MBChB, PhD

Assistant Professor, Department of Medicine (Nephrology), Medical

College of Wisconsin

2020-2021

Co-Mentor with Dr. John D. Imig on the CTSI KL2 Mentored Career Development grant "CYP/EET Pathway: A Novel Therapeutic Target for HRS"

Jing Wu, PhD Assistant Professor, University of Rochester Medical Center

09/2020-08/2025

Co-Mentor on the NIDDK K01 grant entitled "Novel Mechanisms Regulating Renal Perfusion and Kidney Redox Biology: Role in Salt Sensitive Hypertension" (together with Drs. Curt Sigmund, Allen W. Cowley Jr., John D. Imig, Richard Breyer, and James McCormick)

Zhen Wang, PhD

Instructor, Department of Physiology and Biophysics, University of Mississippi

Medical Center

12/2016-11/2021

Member of Advisory Committee on the NIH K99/R00 grant entitled "Mechanisms of synergistic interactions of hypertension and diabetes in promoting kidney injury" (together with Dr. John E. Hall, Dr. Luis Juncos, Dr. Joey P. Granger, Dr. Jonathan P. Hosler and Dr. Heather A. Drummond)

Viktor Tomilin, PhD

Instructor, Department of Integrative Biology and Pharmacology, University of Texas Health Science Center at Houston

07/2019-06-2022

External Member of Mentoring Advisory Committee on the AHA Career Development Award

Rick Grimm, PhD

Assistant Professor, Department of Medicine/Nephrology, Johns Hopkins University

04/2022-present

External Member of Mentoring Advisory Committee (together with Drs. Paul Welling, Jennifer Pluznick, and James McCormick)

Postdoctoral Fellows:

Samantha McClenahan, PhD Departments of Anesthesiology and Pharmacology, Vanderbilt University Medical Center – NIH F32 DK127679; Postdoctoral mentoring committee (Primary Mentor – Dr. Jerod Denton)

Graduate Students:

Wasif A Osmani Department of Physiology, Medical College of Wisconsin – Co-Mentor on NIH F30 HL160122 fellowship (Primary Mentor – Dr. Matthew Hodges)

Summer Students, Fellows, Internships:

02/2023-present **Caleb Sammons** (University of South Florida; Pre-Med)

04/2022-present **Brody Smith** (Judy Genshaft Honors College, University of South Florida), 7 Year B.S.-M.D. Biomedical Sciences Program

06/2021-08/2021 **Tessa Shankey** (Carroll University) SPUR Student (co-mentor; Mentor- Dr. Oleg Palygin)

03/2020-08/2020 **Oksana M. Nikolaienko**; short term visit (Bogomoletz Institute of Physiology, Kiev, Ukraine)

06/2019-08/2019 **Demi M Carter** (Hampton University) AHA Diversity Summer Health-related Research Education Program

06/2019-08/2019 **Evan Juntunen** (University of Wisconsin-Madison) SPUR Student (co-mentor; Mentor- Dr. Oleg Palygin)

11/2019-02/2020

05/2019-08/2019

11/2018-01/2019

Mykhailo Fedoriuk; short term visits (Bogomoletz Institute of Physiology, Kiev, Ukraine)

11/2019-02/2020

05/2019-08/2019

11/2018-01/2019

Ruslan I. Bohovyk; short term visits (Bogomoletz Institute of Physiology, Kiev, Ukraine)

06/2018-08/2018

Ciara Jarmain, SPUR Student (Milwaukee School of Engineering)

02/2018-02/2019

10/2019-02/2020

Rohan Anne, high school student at University School of Milwaukee working on the project for the Badger State Science and Engineering Fair (1st place in Medicine). Participation in the Intel ISEF science fair in Phoenix, AZ (May 12-16, 2019).

03/2018-05/2018

Alexey Shalygin, PhD; short term visit (Institute of Cytology Russian Academy of Sciences, St. Petersburg, Russia)

01/2018-05/2018	Olena Isaeva, PhD ; short term visit (Bogomoletz Institute of Physiology, Kiev, Ukraine)
12/2017-05/2018 09/2018-05/2019	Olga Sykes , PURE internship (UW Milwaukee)
06/2017-08/2017	Apurva Swapnil , PURE internship (Vanderbilt University)
06/2017-08/2017	Adrian Zietara , SPUR Student (Cardinal Stritch University)
03/2017-05/2017	Quin Krisik , PURE internship (Milwaukee School of Engineering)
10/2016-04/2017	Evgeny Tsvetkov, PhD , short term visit (Sechenov Institute of Evolutionary Physiology and Biochemistry, St. Petersburg, Russia)
06/2016-08/2016	Christine Nguyen , SPUR Student (Ripon College)
06/2016-08/2016	Daria Zaika , short term visit (Donetsk National Medical University, Ukraine)
05/2016-06/2016	Nataliya Fedirko, PhD , short term visit (Lviv National University, Ukraine)
03/2016-08/2016	Kristen Winsor , MCW Medical Student (supported by NIDDK R25 education grant) (<u>Michael J. Dunn Award</u> for the summer project presented at the 2016 Medical Student Research Day Poster Session; <u>Travel Award</u> to attend the 2017 Experimental Biology meeting)
05/2015-08/2015	Jennifer M. Connell , SPUR Student, (Winona State University)
09/2016-12/2016 06/2015-08/2015	Oleg Prudnikov , short term visit (Taras Shevchenko University Ukraine)
01/2015-05/2015	Jessica Barnett ; Internship (Alverno College)
05/2014-08/2014	Abby Klemp , SPUR Student, (University of Wisconsin, Madison)
07/2014-08/2014	Muhammad Fasahat Khan ; Summer Program for Medical students (Alfaisal University, Riyadh, Saudi Arabia)
01/2014-05/2014	Jessica Barnett ; Internship (Alverno College)
07/2013-09/2013	Leonid Shuyskiy , BS; short term visit (St. Petersburg State University, Russia)
07/2013-08/2013	Mohammad Hejazi ; Summer Program for Medical students (Alfaisal University, Riyadh, Saudi Arabia)
12/2011-03/2012	Tahereh A. Hosseini , Electrical Engineering Master's student (University of Wisconsin-Milwaukee)
05/2012-08/2012	Shanna Dennis , SPUR Student, (St. Norbert College)
07/2010	Robert Ian Menzies (Edinburgh University, UK)
07/2010-11/2010	Maxim Nikolaev, PhD ; short term visit (Institute of Evolutionary Physiology and Biochemistry, Russian Academy of Sciences, St. Petersburg, Russia)

06/2009-08/2009

Victor Sobolev, Summer Student, (University School of Milwaukee)

BIBLIOGRAPHY

Complete List of Published Work in MyBibliography (167 peer-reviewed publications 136 since 2010):

<http://www.ncbi.nlm.nih.gov/myncbi/browse/collection/42591699/?sort=date&direction=descending>

OR

<http://orcid.org/0000-0002-5190-8356>**REFEREED JOURNAL PUBLICATIONS/ORIGINAL PAPERS****2023:**

1. STARUSCHENKO A., Ma R., Palygin O., Dryer S.E. Ion channels and channelopathies in glomeruli. (2023) *Physiological Reviews*. 103: 787-854. PMID: 36007181.
2. Polat O.K., Isaeva O., Sudhini Y.R., Knott B., Zhu K., Noben M., Kumar V.S., Endlich N., Mangos S., Reddy T.V., Samelko B., Wei C., Altintas M.M., Dryer S.D., Sever S., STARUSCHENKO A., Reiser J. (2023) Rac1 drives podocyte injury independent of TRPC5. *Kidney International*. [Online ahead of print] PMID: 36750145. *- Landmark Communication.
3. Costello H.M., Juffre A., Cheng K.-Y., Bratanatawira P., Crislip G.R., Zietara A., Spires D.R., STARUSCHENKO A., Douma L.G., Gumz M.L. (2023) The PER1 is Important in Maintaining Endothelin Axis Regulation in Dahl Salt Sensitive Rats. *Canadian Journal of Physiology and Pharmacology*. 101(3):136-146. PMID: 36450128.
4. Koehler S., Miner J.H., STARUSCHENKO A. (2023) Call for Papers: Podocyte Physiology and Pathophysiology. *American Journal of Physiology: Renal Physiology*. [In press]

2022:

5. Zietara A., Spires D.R., Juffre A., Costello H.M., Crislip G.R., Douma L.G., Levchenko V., Dissanayake L.V., Klemens C.A., Nikolaienko O., Geurts A.M., Gumz M.L., STARUSCHENKO A. (2022) Knockout of the circadian clock protein Per1 exacerbates hypertension and increases kidney injury in Dahl salt-sensitive rats. *Hypertension*. 79: 2519–2529. PMID: 36093781.
6. Xu B., Nikolaienko O., Levchenko V., Choubey A.S., Isaeva O., STARUSCHENKO A., Palygin O. (2022) Modulation of P2X₄ receptor activity by ivermectin and 5-BDBD has no effect on the development of ARPKD in PCK rats. *Physiological Reports* 10: e15510. PMID: 36353932.
7. Dissanayake L.V., Zietara A., Levchenko V., Spires D.R., Burgos Angulo M., El-Meanawy A., Geurts A.M., Dwinell M.R., Palygin O., STARUSCHENKO A. (2022) Lack of xanthine dehydrogenase leads to a remarkable renal decline in a novel hypouricemic rat model. *iScience* 25(9):104887. PMID: 36039296.
8. Rinschen M.M., Palygin O., El-Meanawy A., Domingo-Almenara X., Palermo A., Dissanayake L.V., Golosova D., Schafroth M.A., Guijas C., Demir F., Jaegers J., Gliozzi M.L., Xue J., Hoehne M., Benzing T., Kok B.P., Saez E., Bleich M., Himmerkus N., Weisz O.A., Cravatt B.F., Krueger M., Benton P., Siuzdak G., STARUSCHENKO A.. (2022) Accelerated lysine metabolism conveys kidney protection in salt-sensitive hypertension. *Nature Communications* 13(1): 4099. PMID: 35835746. *-In Brief Commentary in *Nat Rev Nephrol*.
9. Klemens C.A., Dissanayake L.V., Levchenko V., Zietara A., Palygin O., STARUSCHENKO A. (2022) Modulation of blood pressure regulatory genes in the *Agtrap-Plod1* locus associated with a deletion in *Cln6*. *Physiological Reports*. 10(15):e15417. PMID: 35927940.
10. Kravtsova O., Bohovyk R., Levchenko V., Palygin O., Klemens C.A., Rieg T., STARUSCHENKO A. (2022) SGLT2 inhibition effect on salt-induced hypertension, RAAS, and sodium transport in Dahl SS rats. *American Journal of Physiology: Renal Physiology* 322(6):F692-F707. PMID: 35466690. # – APSselect.
11. Ilatovskaya D., Levchenko V., Winsor K., Blass G., Spires D.R., Sarsenova E., Polina I., Zietara A., Paterson M., Kriegel A., STARUSCHENKO A. (2022) Effects of Elevation of ANP and Its Deficiency on Cardiorenal Function *JCI Insight* 7(9): e148682. PMID: 35380994.
12. Golosova D., Levchenko V., Kravtsova O., Palygin O., STARUSCHENKO A. (2022) Acute and Long-Term Effects of Cannabinoids on Hypertension and Kidney Injury. *Scientific Reports* 12(1): 6080. PMID: 35413977.

13. McClenahan S.J.*, Kent C.N.*, Kharade S.V., Isaeva E., Williams J.C., Han C., Terker A., Gresham III R., Lazarenko R.M., Days E.L., Bauer J.A., Boutaud O., Sulikowski G.A., Harris R., Weaver C.D., **STARUSCHENKO A**, Lindsley C.W., Denton J.S. (2022) VU6036720: The first potent and selective inhibitor of heteromeric Kir4.1/5.1 inward rectifier potassium channels. *Molecular Pharmacology* 101(5): 357-370. PMID: 35246480. #Cover image.
14. Garvin J., Semenikhina M., Liu Q., Rarick K., Isaeva E., Levchenko V., **STARUSCHENKO A**, Palygin O. Harder D., Cohen S. (2022) Astrocytic responses to high glucose impairs barrier formation in cerebral microvessel endothelial cells. *American Journal of Physiology-Regulatory, Integrative and Comparative Physiology* 322(6):R571-R580. PMID: 35412389.
15. Isaeva E., Bohovyk R., Fedoriuk M., Shalygin A., Klemens C.A., Zietara A., Levchenko V., Denton J.S., **STARUSCHENKO A**, Palygin O. (2022) Crosstalk between ENaC and basolateral Kir4.1/Kir5.1 channels in the cortical collecting duct. *British Journal Pharmacology* 179: 2953–2968. PMID: 34904226.
16. Tomilin V.N., Pyshev K., Stavniichuk A., Khayyat N.H., Ren G., Zaika O., Khedr S., **STARUSCHENKO A**, Mei F.C., Cheng X., Pochynyuk O. (2022) Epac1^{-/-} and Epac2^{-/-} mice exhibit deficient epithelial Na⁺ channel regulation and impaired urinary Na⁺ conservation. *JCI Insight* 7(3):e145653. PMID: 34914636.
17. **STARUSCHENKO A**, Hodges M.R., Palygin O. (2022) Kir5.1 channels: potential role in epilepsy and seizure disorders *American Journal of Physiology: Cell Physiology* 323(3): C706-C717. PMID: 35848616.
18. Rangaswami J., Bhalla V., Chertow G.M., Harrington R.A., **STARUSCHENKO A**, Tuttle K., Braunwald E. (2022) Changing the Trajectory of Heart Failure and Kidney Disease: A Call for Action. *Clinical Journal of the American Society of Nephrology* 17(5):742-745. PMID: 35232819

2021:

19. Hyndman K.A., Isaeva E., Palygin O., Mendoza L.D., Rodan A.R., **STARUSCHENKO A**, Pollock J.S. (2021) Role of collecting duct principal cell NOS1 in sodium and potassium homeostasis. *Physiological Reports* 9(20):e15080. PMID: 34665521. * - Editor's Choice article.
20. Palygin O.*, Klemens C.A.*, Isaeva E.*, Levchenko V., Spires D.R., Dissanayake L.V., Nikolaienko O., Ilatovskaya D.V., **STARUSCHENKO A**. (2021) Characterization of purinergic receptor 2 signaling in podocytes from diabetic kidneys. *iScience* 24(6):102528. PMID: 34142040.
21. Miller B., Palygin O., El-Meanawy A., Geurts A.M., **STARUSCHENKO A**, Sorokin A. p66Shc-Mediated H₂O₂ Production Impairs Nephrogenesis Causing Reduction of Number of Glomeruli. *Life Sciences* 279:119661. PMID: 34087282.
22. Spires D.R.*, Palygin O.*, Levchenko V., Isaeva E., Klemens C.A., Khedr S., Nikolaienko O., Kriegel A., Cheng X., Yeo J.-Y., Joe B., **STARUSCHENKO A**. (2021) Sexual dimorphism in the progression of type 2 diabetic kidney disease. *Physiological Genomics* 53(6):223-234. PMID: 33870721. # – APSselect.
23. Shalygin A.*, Shuyskiy L.S.*, Bohovyk R.*, Palygin O., **STARUSCHENKO A**. #, Kaznacheyeva E.# (2021) Cytoskeleton rearrangements modulate TRPC6 channels activity in podocytes. *International Journal of Molecular Sciences*. 22(9):4396. # – corresponding authors. PMID: 33922367.
24. Bohovyk R., Fedoriuk M., Isaeva E., Shevchuk A., Palygin O., **STARUSCHENKO A**. (2021) Scanning ion conductance microscopy of live human glomerulus. *Journal of Cellular and Molecular Medicine*. 25: 4216–4219. PMID: 33745233.
25. Schlingmann K.P.*, Renigunta A.*, Hoorn E.J.*, Forst A.-L., Renigunta V., Athanasov V., Mahendran S., Barakat T.S., Gillion V., Godefroid N., Brooks A.S., Lugtenberg D., Debaix H., Rudin C., Knebelmann B., Tellier S., deBaaij J.H.F., Weber S., Palygin O., **STARUSCHENKO A**, Kleta R., Houillier P., Bockenhauer D., Vargas-Poussou R., Devuyst O., Warth R.*, Zdebik A.A.*, Konrad M. Defects in KCNJ16 cause a novel tubulopathy with hypokalemia, salt wasting, disturbed acid-base homeostasis and sensorineural deafness. *Journal of the American Society of Nephrology* 32(6):1498-1512. PMID: 33811157. *Recommended by Faculty of 1000.
26. Manis A.D.*, Palygin O*, Isaeva E., Levchenko V., LaViolette P.S., Pavlov T.S., Hodges M.R., **STARUSCHENKO A**. (2021) Kcnj16 knockout produces audiogenic seizures in the Dahl salt-sensitive rat. *JCI Insight*. 6(1): e143251. PMID: 33232300.
27. Klemens C.A., Chulkov E.G., Wu J., Hye Khan M.A., Levchenko V., Flister M.J., Imig J.D., Kriegel A.J., Palygin O., **STARUSCHENKO A**. (2021) Loss of ClC-6 affects vascular smooth muscle contractility and arterial stiffness via alterations to Golgi calcium stores. *Hypertension*. 77(2):582-593. PMID: 33390052

28. Patterson K.C.*, Kahanovitch U.*, Gonçalves C.M., Hablitz J.J., **STARUSCHENKO A.**, Mulkey D.K., Olsen M.L. (2021) $K_{ir}5.1$ -dependent CO_2/H^+ -sensitive currents contribute to astrocyte heterogeneity across brain regions. *Glia*. 69:310–325. PMID: 32865323.
29. Klemens C.A., **STARUSCHENKO A.**, Palygin O. (2021) The mechanisms of cellular plasticity in collecting duct cells: intermediate cell type and notch-mediated transdifferentiation. *Function*. 2:zqab032. PMID: 34223174.

2020:

30. Golosova D.*, Palygin O.*, Bohovyk R., Klemens C.A., Levchenko V., Spires D.R., Isaeva E., El-Meanawy A., **STARUSCHENKO A.** (2020) Role of opioid signaling in kidney damage during the development of salt-induced hypertension. *Life Science Alliance*. 3(12): e202000853. PMID: 33046522.
31. Rangaswami J., Bhalla V., de Boer I., **STARUSCHENKO A.**, Tuttle K., Vaduganathan M., Ventura H., McCullough P.A. (2020) Cardiorenal protection with the Novel Antidiabetic Agents in Patients with Diabetes and Chronic Kidney Disease: A Scientific Statement for Healthcare Professionals from the American Heart Association. *Circulation*. 142:e265-e286. PMID: 32981345.
32. Pavlov T.S., Palygin O., Isaeva E., Levchenko V., Khedr S., Blass G., Ilatovskaya D.V., Cowley A.W., Jr., **STARUSCHENKO A.** (2020) NOX4-dependent regulation of ENaC in hypertension and diabetic kidney disease. *FASEB Journal*. 34:13396–13408. PMID: 32799394.
33. Nikolaienko O., Isaeva E., Levchenko V., Palygin O., **STARUSCHENKO A.** (2020) Behavioral, metabolic and renal outcomes of one-month isolation in adolescent male Dahl salt-sensitive rats. *American Journal of Physiology-Regulatory, Integrative and Comparative Physiology*. 319: R684–R689. PMID: 33052061.
34. Dey A.B.*, Khedr S.*, Bean J., Porras L.L., Meredith T., Willard F., Haas J., Zhou X., Jesudason C., Terashvili M., Ruley K., Wiley M., Kowala M., Atkinson S., **STARUSCHENKO A.**, Rekhter M.D. (2020) Selective phosphodiesterase 1 inhibitor BTTQ reduces blood pressure in spontaneously hypertensive and Dahl salt sensitive rats: role of peripheral vasodilation. *Frontiers in Physiology*. 11:543727. PMID: 33013477.
35. **STARUSCHENKO A.**, Ilatovskaya D.V., Hallows K.R. (2020) Fundamentals of epithelial Na^+ absorption. Chapter 9 in “Ion Channels and Transporters of Epithelia in Health and Disease” by Hamilton and Devor. Springer Science, Palo Alto, CA. 2nd edition. Vol. 1, pp. 291-336.
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37. Manis A.D., Hodges M.R., **STARUSCHENKO A.**, Palygin O. (2020) Expression, localization, and functional properties of inwardly rectifying potassium channels in the kidney. *American Journal of Physiology: Renal Physiology*. 318: F332–F337. PMID: 31841387.
38. **STARUSCHENKO A.**, Brooks H.L. (2020) O’Brien Kidney Research Centers. *American Journal of Physiology: Renal Physiology*. 319: F1042. PMID: 33166180.
39. Klemens C.A., **STARUSCHENKO A.** (2020) American Journal of Physiology-Renal Physiology Collections: Hypertension. *American Journal of Physiology: Renal Physiology*. 319: F1001-F1002. PMID: 33166184.
40. **STARUSCHENKO A.**, Bhalla V., Rangaswami J. (2020) SGLT2 inhibitors: Diabetic kidney disease and beyond. *American Journal of Physiology: Renal Physiology*. 319: F780–F781. PMID: 33017191

2019:

41. Manis A.D.*, Palygin O.*, Khedr S., Levchenko V., Hodges M.R., **STARUSCHENKO A.** (2019) Relationship between renin-angiotensin-aldosterone system and renal $K_{ir}5.1$ channels. *Clinical Science*. 133: 2449–2461. PMID: 31799617.
42. Palygin O., Spires D., Levchenko V., Bohovyk R., Fedoriuk M., Sykes O., Bukowy J.D., Cowley A.W., Jr., Lazar J., Ilatovskaya D.V., **STARUSCHENKO A.** (2019) Progression of diabetic kidney disease in T2DN rats. *American Journal of Physiology: Renal Physiology*. 317: F1450-F1461. PMID: 31566426.
43. Rinschen M.M., Palygin O., Guijas C., Palermo A., Palacio-Escat N., Domingo-Almenara X., Montenegro-Burke R., Saez-Rodriguez J., **STARUSCHENKO A.***, Siuzdak G*. (2019) Metabolic rewiring of the hypertensive kidney. *Science Signaling*. 12: eaax9760. PMID: 31822592. * - corresponding authors. # - Cover story and Cover image - *Science Signaling*; Commentary in *Nat Rev Nephrol* - PMID:31875054. Special collection “Kidney Update 2020”. *Science*. 370(6513): 254. DOI: 10.1126/science.370.6513.254-b.

44. Isaeva E., Fedoriuk M., Bohovyk R., Klemens C.A., Khedr S., Golosova D., Levchenko V., El-Meanawy A., Palygin O., **STARUSCHENKO A.** (2019) Vibro-dissociation method for isolation of defined nephron segments from human and rodent kidneys. *American Journal of Physiology: Renal Physiology*. 317: F1398-F1403. PMID: 31588797.
 45. Khedr S., Palygin O., Pavlov T.S., Blass G., Levchenko V., Alsheikh A., Brands M.W., El-Meanawy A., **STARUSCHENKO A.** (2019) Increased ENaC activity during kidney preservation in Wisconsin solution. *BMC Nephrology* 20(1):145. PMID: 31035971.
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