

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: **Penniston, Kristina L.**

eRA COMMONS USER NAME (credential, e.g., agency login): **klpenniston**

POSITION TITLE: **Senior Scientist**

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of Wisconsin-Madison, Madison, WI	B.S.	05/1998	Dietetics
UW Health University Hospital and Clinics, Madison, WI	RDN	07/1999	Dietetic internship
University of Wisconsin-Madison, Madison, WI	MS	01/2001	Nutritional Sciences
University of Wisconsin-Madison, Madison, WI	PhD	12/2004	Nutritional Sciences

A. PERSONAL STATEMENT

As the PI of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) Urology Centers Program (UCP) Interactions Core (U24DK127726), I provide scientific leadership and organizational support for investigators of the George M. O'Brien Urology (U54) Cooperative Research Centers, P20 Exploratory Centers for Interdisciplinary Research in Benign Urology, and K12 Urology Career Development Programs [i.e., Urologic Research (KURe) and Urological Epidemiology Institutional Research (KUroEpi)]. Investigators and trainees from these Centers and Programs form the research community known as CAIRIBU – *Collaborating for the Advancement of Interdisciplinary Research in Benign Urology*. My primary objective is to foster the development of high-impact science by encouraging and enabling interdisciplinary research collaborations that answer critical questions in benign genitourinary research. I work closely with NIDDK program officers, with leaders of urology Centers and Programs, and with CAIRIBU trainees. As an independent translational scientist since 2005, I have developed a clinical and translational research program to study urolithiasis with a particular interest in medical nutrition therapy for stone prevention and in the health-related quality of life of patients with stones. I have been a part of interdisciplinary research collaborations with investigators at UW-Madison and elsewhere. In 2014, I initiated a multi-center consortium of academic urology centers in the US and Canada, which now numbers 17, to study the health-related quality of life of individuals with urolithiasis. I continue to serve as PI of this consortium, which has published nearly a dozen papers and continues to publish new findings.

During my tenure as a scientist, I have mentored nearly 50 undergraduate students, medical school students, and urology residents in clinical or translational research projects. Recently, I won a Hilldale Undergraduate Faculty Research Fellowship award with an undergraduate student who recently completed a combined Master's degree and dietetic internship. I have been a preceptor for clinical nutrition trainees in the dietetic internship program at UW Health University Hospital for 20+ years, for which I have won several awards, and am currently a preceptor for graduate and undergraduate students in Nutritional Sciences at UW-Madison. I have provided opportunities for students to present their research at various forums, including national and regional meetings, and to be co-authors on published manuscripts. Very recently, Dr. Chad Vezina and I were recently awarded an R25 award from the NIDDK to engage undergraduate students in summer non-malignant urological research at the UW-Madison. **I am excited to be part of the multi-institutional UW-Madison/Mayo Clinic Rochester U2C/TL1 GENERATOR proposal** and to provide direction and effort toward the Professional Development and Networking Cores. Our Program will benefit from the infrastructure I have created within my CAIRIBU Interactions Core and within the CAIRIBU research community broadly. We already have a well-rounded, multi-faceted program aimed at building the research capacity and skills of research trainees and will be able to include trainees in our GENERATOR Program in these and other activities.

Ongoing and recently completed projects relevant to this application that I would like to highlight include:

- **NIH/NIDDK (1R25DK130838-01A1)** **Sept. 2022-present**
My role: Co-Principal Investigator. Project title: *Summer Program in Undergraduate Urology Research*. Goals: Build a pipeline in urology research by engaging a diverse group of undergraduate students in summer research learning and activities aimed at stimulating lifelong interest in a urology research career.
- **NIH-NIDDK Urology Centers Program Interactions Core (U24DK127726)** **Sept. 2020 – present**
My role: Principal Investigator. Project title: *University of Wisconsin-Madison Interactions Core for the NIDDK Urology Centers Program*. Goals: Foster and support collaborative, integrated, and interdisciplinary basic and translational science that answers critical questions in benign genitourinary disease and builds the breadth and depth of benign urology investigators.
- **Wisconsin Urologic Research Institute Award** **Aug. 2020 – present**
My role: Principal Investigator. Project title: *UW-Madison Department of Urology Coordinating Center for the North American Stone Quality of Life Consortium*. Goals: Provide continuing leadership and logistical, statistical, and data maintenance support for the North American Stone Quality of Life Consortium's longitudinal cohort study.
- **NIH-NIDDK Administrative Supplement to Existing Grant (U54DK104310-04)** **June 2018 – Sept 2020**
Ricke (PI). My role: Co-Investigator. Funds from supplement were allocated to my salary support and for activities related to the interim U54 O'Brien Centers Director of Interactions position.

B. POSITIONS, SCIENTIFIC APPOINTMENTS, AND HONORS

I. Positions

- 03/2023 – present **President-Elect**, Research on Calculus Kinetics (ROCK) Society
- 09/2019 – present **Honorary associate** (preceptor) for clinical nutrition trainees in the Department of Nutritional Sciences, UW-Madison and the UW Health University Hospital dietetics program, Madison, WI
- 07/2018 – present **Director of Interactions**, PI of NIH/NIDDK-funded consortium of benign urology research centers and programs, "Collaborating for the Advancement of Interdisciplinary Research for Benign Urology"
- 04/2018 – 3/2023 **Secretary-Treasurer**, Research on Calculus Kinetics (ROCK) Society
- 01/2018 – present **Fellow of the Academy of Nutrition and Dietetics** (FAND)
- 01/2013 – 06/2015 **Guidelines panel member**, American Urological Association guidelines on medical management of kidney stones (panel chair, Margaret S. Pearle, PhD, MD)
- 06/2005 – present **Senior scientist**, UW School of Medicine and Public Health, Department of Urology, Madison, WI (promoted from Assistant to Associate in 2008 and from Associate to Senior in 2015)
- 07/1999 – present **Clinical nutritionist** (registered dietitian nutritionist), UW Health University of Wisconsin Hospital and Clinics, Clinical Nutrition Services, Madison, WI

II. Scientific Appointments and Honors

- Invited Reviewer, American Urological Association Urology Scientific Mentoring and Research Training Academy, 2023
- Guidelines Review Panel, International Alliance of Urolithiasis, 2022
- Scientific Advisory Council, Oxalosis and Hyperoxaluria Foundation, appointed 2022
- Member, Consortium Monitoring Board for the Polycystic Kidney Disease Research Resource Consortium (NIH/NIDDK KUH); appointed January 2021
- Program planning committee, GUDMAP Jamboree 2021, a conference for the GenitoUrinary Development Molecular Anatomy Project, funded by NIDDK
- Member, planning committee for NIDDK series on Female Urethral Function and Failure, 2020. Committee developed virtual series of seven weekly sessions to address advancing basic and translational research for genitourinary conditions related to the female urethra
- Grant Reviewer, NIH/NIDDK KUH Innovative Science Accelerator Program Review Panel, ZDK1 GRB-M (J2), 2020, 2022, and 2023

- Grant Reviewer, Urology Care Foundation Rising Stars in Urology Research Award, 2020, 2021, and 2022
- Program Planning Committee, Research on Calculus Kinetics Society annual meeting, 2018
- Scientific Chairperson, Research on Calculus Kinetics Society annual meeting, 2017
- Abstract Selection Committee for session on medical management of stones, American Urological Association, for annual meetings from 2016 through 2023
- Reviewer activity for biomedical journals:
Urology, Urolithiasis (previously Urological Research), Health and Quality of Life Outcomes, American Journal of Clinical Nutrition, The Journal of Urology, International Brazilian Journal of Urology, International Journal of Urology, Journal of Endourology, The Journal of Translational Medicine, Journal of Biomedical Science, Clinical Journal of the American Society of Nephrology, The Journal of Nutrition, British Medical Journal, Patient Preference and Adherence, PLoS One, Nutrients, Journal of Renal Nutrition, BMC Urology, Scientific Reports, Journal of Public Health, Biomolecules, Société Internationale d'Urologie Journal, Asian Journal of Urology, Translational Andrology and Urology, Journal of Pediatric Urology, Nature Reviews Urology, eClinicalMedicine, Expert Review of Clinical Pharmacology, Kidney and Dialysis, Sports, Investigative and Clinical Urology Journal

Mentoring experience:

- Mentor, project for dkNET Summer of Data Internship awarded to UW-Madison undergraduate student, June-August 2021 and another student in 2022
- Dissertation committee member, 2010-2012, PhD candidate in Counseling Psychology (UW-Madison)
- Advisor for 41 current and prior undergraduate researchers, 3 medical school student summer scholars, 1 graduate student, and 2 K12 Scholars, 2006 to present

Memberships in professional societies:

- Research on Calculus Kinetics (ROCK) Society
- Endourological Society
- Society for Basic Urologic Research
- American Urological Association
- North Central Section of the American Urological Association
- Academy of Nutrition and Dietetics (formerly American Dietetic Association)

Honors:

- 2019 Recipient, Hilldale Undergraduate/Faculty Research Award, UW-Madison Office of the Provost
- 2015 "Outstanding Reviewer" status for the journal Urology (Elsevier), top 10th percentile of reviewers
- 2015 "Best Poster" award, North Central Section meeting of the American Urological Association
- 2013 Preceptor appreciation award from the UW Hospital & Clinics Dietetic Internship program
- 2012 "Best Poster" award, North Central Section meeting of the American Urological Association
- 2010 Professional Development Recognition Committee academic staff award (UW-Madison)
- 2010 "Best Poster" award, North Central Section meeting of the American Urological Association
- 2010 Women in Science & Engineering Leadership Institute award (UW-Madison)
- 2008 "Best of Session Poster" award, American Urological Association meeting
- 2008 American Urological Association Foundation Research Scholar fellowship award
- 2005 "First Author Paper Award" from the Research Practice Group of the American Dietetic Association
- 2005 Preceptor award, UW Health University Hospital & Clinics Dietetic Internship program

III. Clinical Licensures and Specialty Board Certifications

- Registered Dietitian Nutritionist (RDN) – Commission on Dietetic Registration, #868356, since 1999
- Certified Dietitian (CD) – State of Wisconsin, #1444-029, since 2000
- National Provider Identifier Standard (NPI) - #1184953267, since 2009
- Fellow of the Academy of Nutrition and Dietetics (FAND), since 2018
- Licensed Dietitian Nutritionist (LDN) – State of Illinois, since 2020

C. CONTRIBUTIONS TO SCIENCE

1. **Research on the nutritional management (medical nutrition therapy) of kidney stones.** I have built a large and influential research program. I have served as faculty at numerous courses provided at meetings and conferences, including the World Congress in Endourology, the American Urological

Association, and for a continuing education course in Santiago, Chile offered by the School of Medicine at Pontificia Universidad Católica de Chile; a nutrition course for the European Association of Urology is in the preparation stage (course director, Thomas Taily, MD). I have given grand rounds at multiple urology departments and divisions and provided lectures on the topic of nutrition and kidney stones, (e.g., Cleveland Clinic, Penn State, American Society of Nephrology, Urology Nurses Association). **Examples of some of the most influential publications related to nutritional management of kidney stones include the following:**

- a. Betz MV, **Penniston KL**. Primary contributors to dietary acid load in patients with urolithiasis. *J Ren Nutr* 2022;S1051-2276(22)00107-8
 - b. **Penniston KL**, Palmer EA, Medenwald RJ et al. Oxalate content of enteral nutrition formulas. *J Pediatr Gastroenterol Nutr* 2019;69:e135-40
 - c. **Penniston KL**, Wertheim ML, Nakada SY, Jhagroo RA: Factors associated with patient recall of individualized dietary recommendations for kidney stone prevention. *Eur J Clin Nutr* 2016;70:1062-67
 - d. **Penniston KL**, Nakada SY: Effect of dietary changes on urinary oxalate excretion and calcium oxalate supersaturation in patients with hyperoxaluric stone formation. *Urology* 2009;73:484-89
2. **Invited reviews related to the nutritional management of kidney stones.** As one of few nutrition experts in the area of kidney stones, I have been invited to contribute to several books, special journal issues, and journals specializing in reviews. Examples of these include:
- a. **Penniston KL**, Nakada SY. Updates in the metabolic management of calcium stones. *Curr Urol Rep* 2018;19:41
 - b. **Penniston KL**, Nakada SY. Treatment expectations and health-related quality of life in stone formers. *Curr Opin Urol* 2016;26:50-5
 - c. **Penniston KL**. The nutrition consult for recurrent stone formers. *Curr Urol Rep* 2015;16:47
 - d. **Penniston KL**, Nakada SY. Diet and alternative therapies in the management of stone disease. *Urol Clin North Am* 2013;40:31-46
3. **Porcine platform for studying kidney stones.** Through this basic science work, for which I collaborated with UW-Madison Animal Sciences faculty, the adult pig was confirmed as a suitable model for studying calcium oxalate kidney stones and for studying the effects of dietary modification. The studies below highlight my experience with this animal model.
- a. **Penniston KL**, Patel SR, Schwahn DJ, Nakada SY: Studies using a porcine model: what insights into human stone formation mechanisms has this model facilitated? *Urolithiasis* 2017;45:109-25
 - b. Sivalingam S, Nakada SY, Sehgal PD, Crenshaw TD, **Penniston KL**: Dietary hydroxyproline induced calcium oxalate lithiasis and associated renal injury in the porcine model. *J Endourol* 2013;27):1493-98
 - c. Patel SR, **Penniston KL**, Iwicki L, Saeed I, Crenshaw TD, Nakada SY: Dietary induction of long-term hyperoxaluria in the porcine model. *J Endourol* 2012;26:433-38
 - d. Kaplon DM, **Penniston KL**, Darriet C, Crenshaw TD, Nakada SY: Hydroxyproline-induced hyperoxaluria using acidified and traditional diets in the porcine model. *J Endourol* 2010;24:355-59
4. **Health-related quality of life in patients with kidney stones.** I am the primary developer of the Wisconsin Stone Quality of Life questionnaire (WISQOL), the first kidney stone-specific instrument for assessing patient-reported outcomes related to the effects of kidney stones on their health and well-being. This work has received national and international attention. My efforts are considered an important contribution to the field of urolithiasis and medical management. The WISQOL has now been translated to Turkish, German, Slovak, Spanish (Mexico), Russian, and French Quebec. I have received queries about translating the WISQOL from urologists in other countries, including Colombia, Serbia, Nigeria, Japan, China, Spain, Portugal, and Italy. **I have authored or served as co-author on nearly 1 dozen publications from this consortium; a sampling of these publications follow:**
- a. Streeper NM, Galida M, Boltz S, Li S, Nakada SY, Raffin EP, Brown DR, Pais VM, Chan JYH, Scotland KB, Chew BH, **Penniston KL**: Is stone-free status after surgical intervention for kidney stones associated with better health-related quality of life? A multicenter study from the North American Stone Quality of Life Consortium. *Urology* 2020;20:31433-3
 - b. **Penniston KL**, Antonelli JA, Viprasakit DP et al: Validation and reliability of the Wisconsin Stone Quality of Life questionnaire. *J Urol* 2017;197:1280-88

- c. Streeper NM, Wertheim ML, Nakada SY, **Penniston KL**: Cystine stone formers have impaired health-related quality of life compared with noncystine stone formers: a case-referent study piloting the Wisconsin Stone Quality of Life questionnaire among patients with cystine stones. *J Endourol* 2017;31:S48-53
- d. **Penniston KL**, Nakada SY: Development of an instrument to assess the health-related quality of life of kidney stone formers. *J Urol* 2013;189:921-30

URL to full list of published work (PubMed):

<https://www.ncbi.nlm.nih.gov/pubmed/?term=penniston+kl>

Link to full publication list, including published meeting abstracts (Web of Science):

<https://app-webofknowledge-com.ezproxy.library.wisc.edu/author/record/220292>

Link to profile page on the UW-Madison Department of Urology website:

<https://urology.wisc.edu/blog/staff/penniston-phd-kristina/>

Link to webpage devoted to the Wisconsin Stone Quality of Life questionnaire:

<https://urology.wisc.edu/research/wisqol/>