

Curriculum vitae

James Caldwell Williams, Jr.

Professor

Department of Anatomy, Cell Biology & Physiology
Indiana University School of Medicine
635 Barnhill Drive MedSci 5065A
Indianapolis, IN 46202-5120
+01 317 274 3423
jwillia3@iu.edu

EDUCATION:

POSTDOCTORAL

Division of Nephrology University of Alabama at Birmingham	Postdoctoral Fellow	11/82-6/86
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GRADUATE

Cornell University, Ithaca NY	Ph.D. Physiology minors in ecology & applied physics	1983
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UNDERGRADUATE

Rhodes College, Memphis TN	B.S. Biology, with Distinction	1978
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APPOINTMENTS:

ACADEMIC

Urological Research Center University of Southern Denmark	Adjunct Professor in Urology (honorary)	9/1/15-8/31/20 10/1/20-9/30/25
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Department of Anatomy & Cell Biology Indiana University School of Medicine	Professor Associate Professor	7/1/06-present 8/1/91-6/30/06
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Department of Anatomy & Cell Biology Medical University of South Carolina (MUSC)	Assistant Professor	1/1/87-7/31/91
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Department of Physiology University of Alabama at Birmingham	Research Instructor	7/1/86-12/31/86
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PROFESSIONAL ORGANIZATION MEMBERSHIPS:

American Association of Anatomists	2006-present
American Urological Association	2012-present
Research on Calculus Kinetics (ROCK) Society	2007-present
Endourology Society	2016-present

PROFESSIONAL HONORS AND AWARDS:

TEACHING

Trustee Teaching Award for 2018-19	Indiana University	2019
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Trustee Teaching Award for 2013-14	Indiana University	2014
Trustee Teaching Award for 2009-10	Indiana University	2010
Shellhamer Outstanding Teacher Award	Dept. Anat. And Cell Biol.	2007
Trustee Teaching Award for 2003-04	Indiana University	2004
Teaching Excellence Recognition Award	IU Board of Trustees	1997
Shellhamer Outstanding Teacher Award	Dept. Anat. And Cell Biol.	1996
Faculty Excellence Award	Med. Univ. S. Carolina	1991
Golden Apple Award from AMSA	Med. Univ. S. Carolina	1990
Faculty Excellence Award	Med. Univ. S. Carolina	1990

TEACHING:

GRADUATE

Human Structure 2016-present

I am one of the chief lecturers in the histology portions of this course; I also work in the laboratories, and meet with students for help sessions, for a total student contact time of about 160 hours each year. Typical enrollment is 180 students.

G855 Experimental Design and Research Biostatistics 2008-present

I am director and sole lecturer for this course, which is required for second-year PhD students in the School of Medicine. Typical enrollment is 40 students.

G715 Biochemical Basis of Biological Processes 2016-2018

I have one lecture in this course, which is required for first-year PhD students in the School of Medicine. Typical enrollment is 40 students.

F603 Integrated Medical Physiology 2019-present

I have one lecture in this course, which is part of the graduate curriculum in Physiology. Typical enrollment is 20 students.

MENTORING:

GRADUATE STUDENT ADVISORY COMMITTEES

Angela Sabo (Physiology), research mentor	PhD expected
Victor Hugo Canela (Anatomy & Cell Biology), research mentor	PhD expected
Seth Winfree (Physiology)	PhD expected
Courtney Weiler (Physiology), research mentor	MS 2015
Andre Turner, research mentor	MSMS 2015
Roselyn Sagastume, research mentor	MSMS 2014
Leslie Pillow, research mentor	MSMS 2013
Dalielah Jappie-Mahomed, University of Cape Town, South Africa	Ph.D. 2013
Kate Englert (Anatomy & Cell Biology), research mentor	M.S. 2011
Naseem Khan, research mentor	MSMS 2011
Christian Beuschel (Anatomy & Cell Biology), research mentor	M.S. 2009
Su Huang (Anatomy & Cell Biology)	Ph.D., 2007
Andrew Lindsley (Anatomy & Cell Biology)	MD/PhD, 2006
Durriell Brown, research mentor	MSMS 2004
Charva Poole, research mentor	MSMS 2004

Lawrence Mark (Biophysics), research mentor	MD/PhD, 2002
James Stanton, research mentor	MSMS 2001
Kerryn A. Greive, Monash University, Australia	Ph.D. 2001
Dahua Zhang (Anatomy & Cell Biology)	Ph.D. 2001
Carolina Tuma (Anatomy & Cell Biology)	Ph.D. 2000
A.C. Dumauual (Biophysics)	Ph.D. 2000
Angella Talley, research mentor	MSMS 1999
Sherry G. Babb (Anatomy & Cell Biology)	Ph.D. 1999
Hua-Qiong Shen (Anatomy & Cell Biology)	Ph.D. 1996
Wei Zhang (Anatomy & Cell Biology)	Ph.D. 1996
Nick Doyle (Anatomy & Cell Biology)	M.S. 1996
Lan Qin (Anatomy & Cell Biology)	Ph.D. 1995
Jie-Guang Chen (Physiology)	Ph.D. 1995
Rickey Rivers (Anatomy, MUSC), research mentor	Ph.D. 1999
Judy Boyd-White (MCBP, MUSC), research mentor	Ph.D. 1996
Douglas Brees (Anatomy, MUSC), research mentor	Ph.D. 1993
David Andres (Anatomy & Cell Biology)	M.S. 1993

GRADUATE STUDENT RESEARCH ROTATIONS (IBMG)

Angela Sabo	Spring 2019
Victor Hugo Canela	Spring 2017
Carla Mangum	Spring 2010
Rachel Deal	Spring 2010
Jessica Walsh	Spring 2009
Takeisha Farmer	Summer and Fall 2009

FOREIGN MEDICAL STUDENT RESEARCH ROTATIONS

Mattanawee Sangkao (Bangkok, Thailand)	Summer 2017
Maria Pless (Odense, Denmark)	Fall 2016
Cornelius Dzien (Innsbruck, Austria)	Summer 2015
Alessia Gambaro (Verona, Italy)	Summer 2008

MINORITY ASSOCIATION OF PRE-MEDICAL STUDENTS (IUB)

Networking Night, invited participant	April 2017
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MENTOR FOR PROJECT SEED (ACS program for economically disadvantaged high school students; involves mentoring the student through a summer-long project)

Kailee Jackson	2017
Kyle Torain	2007
Leo Salinas	2006
Christiana Adeola	2005
Michael Douglas	2004
Pauline Khumalo	2003
Bella Siangonya	2002
Sowmya Kypa	2001
Chad Zarse	2000
Jason Chapman	1994
Rolonda Trice	1993

MENTOR FOR LIFE AND HEALTH SCIENCES INTERNSHIP (LHSI), IUPUI

Christina Wolfe	2007-2008
Nuzhat Shahid	2017-2018
Christopher Hoffman	2017-2018

ADVISOR FOR MEDICAL STUDENTS (including writing the 'dean's letter')

Jeffrey G. Huxford	class of 2003
Marcus A. Hendry	class of 2003
Travis G. Snyder	class of 2000

MENTOR FOR IU MEDICAL STUDENT PROGRAM FOR RESEARCH AND SCHOLARSHIP

Haider Al-Awadi	summer, 2019
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FACULTY MENTOR FOR MEDICAL STUDENT PEER AND SELF ASSESSMENT REVIEW

Caleb Walters	2013, 2014
Kathryn Meyer	2013, 2014
Kevin Chu	2013, 2014
Megan Feustel	2013, 2014
Gerard Hills	2013, 2014
Rahul Abhyankar	2012, 2013, 2014
Nicole Mensah	2012, 2013
Benson Njenga	2012, 2013
Deborah Olmstead	2012, 2013
Benjamin Seagren	2012, 2013
Arabelle Abellard	2013
Nicholas Race	2013
Luke Pittman	2009, 2010, 2011, 2012
Kayla Herget	2010, 2011, 2012
Kendal Herget	2010, 2012
Christian Beuschel	2010, 2011, 2012
Cole Turner	2011, 2012
Emily Mindrebo	2011, 2012
Jessica Lee	2012
Brian LeCleir	2009, 2010, 2011
Sashana Gordon	2011
Ashley Suah	2011
James Wilcox	2011
Steven Lee	2009, 2010

FACULTY MENTORING COMMITTEES

for Matthew Allen	2008-2013
for Lilian Plotkin, Chair	2008-2014
for William Truitt, Chair	2009-2016
for Audra Schutte Schaefer	2015-2018
for Jason Organ, Chair	2013-present
for Leslie Hoffman	2015-present

for Polly Husmann
for Margaret McNulty
for Jessica Byrum

2016-present
2017-present
2019-present

RESEARCH:

GRANTS AND FELLOWSHIPS IN RESEARCH:

GRANTS, CURRENT FUNDING

- Principal investigator at 25%, Core B, “Histopathology and Stone Analysis,” of NIH P01 DK056788, “Pathogenesis of Calcium Nephrolithiasis,” Elaine Worcester PPG PI. Core B receives \$1,732,405 total costs for the period 7/1/2017 through 6/30/2022.
- Co-investigator at 6%, Project 2 (J. Lingeman, PI), “Plaques and Plugs: Pathogenesis and Relationship to Nephrolithiasis,” of NIH P01 DK056788, “Pathogenesis of Calcium Nephrolithiasis,” Elaine Worcester PPG PI. Project 2 receives \$1,036,360 total costs for the period 7/1/2017 through 6/30/2022.
- Co-investigator at 5%, Project 3 (T. Ashkar, PI), “Molecular and Cellular Pathobiology of Stone Forming Papillae,” of NIH P01 DK056788, “Pathogenesis of Calcium Nephrolithiasis,” Elaine Worcester PPG PI. Project 3 receives \$1,659,025 total costs for the period 7/1/2017 through 6/30/2022.
- Co-PI at 20%, NIH P01 DK43881, project 3, “BWL interaction with kidney tissue,” Co-PI with James E. Lingeman, \$2,228,569 total costs for the period of 7/1/19 through 6/30/24.
- Principal investigator (no salary), Clinical and Translational Sciences Institute Core Facilities Pilot grant, “Pilot study of second harmonic generation in nascent kidney stones,” \$9,240 total costs for the period 8/1/18 through 7/31/20.
- Member at 0%, NIH T32 DK120524, “Indiana University Kidney Training Program (IU-KTP),” PI is Sharon Moe, \$1,495,242 total costs for the period of 4/1/2019 through 3/31/2024.
- Principal investigator at 5%, RFA-KPMP-OP-19-003, NIH/NIDDK passed through the Kidney Precision Medicine Project, “Healthy Reference Tissue for KPMP,” \$300,000 total costs for the period 09/01/2019 - 06/30/2022.
- Principal investigator at 10%, NIH R01 DK124776, “Essential characterization of the Randall's plaque-overgrowth interface,” \$713,250 total costs for the period of 5/1/2020 through 3/31/2023.

GRANTS, SUBMITTED

- Principal investigator at 20%, NIH R01 DK124776, “Essential characterization of the Randall's plaque-overgrowth interface,” \$2,333,289 total costs for the period 4/1/2020-3/31/25. Received a score of 36 (23rd percentile). I was contacted last week by Dr. Kirkali (the program officer and director of urology for NIDDK), who said that he would like to propose to council for this to get partial funding, perhaps \$150,000 per year for three years. We will see....
- Co-PI at 17% (along with Tarek Ashkar and Amy Krambeck), NIH R01 DK119342, “The role of vascular and epithelial cell injury in the formation of ductal plugs and stone disease,” \$3,167,601 total costs for the period of 9/1/2020-8/31/2025.

Co-I at 5%, NIH R01 EY030914, PI: Eric Beyer (University of Chicago), “Geobiology of Cataracts,” \$3,356,746 total costs for the period of 7/1/2020-6/30/2025.

GRANTS, PAST FUNDING

Co-PI at 20%, NIH P01 DK043881, project 3, “Removal of incidental stones to improve patient outcomes,” Co-PI with James E. Lingeman, \$2,020,921 total costs for the period of 9/15/14 through 6/30/19.

Co-investigator at 11%, NIH P50 DK083007, “Improving stone disease treatment by accurate phenotyping and risk stratification,” John Lieske, PI. \$5,600,000 total costs for the period of 7/1/13 through 12/31/18.

Core faculty member (no salary), IUPUI Signature Centers Initiative Program, “Research Center for Quantitative Renal Imaging,” G.D. Hutchins and B.A. Molitoris, Co-Directors, \$390,000 total costs for the period 7/1/14 through 6/30/17.

Co-investigator at 10%, NIH P01 DK56788, “Pathogenesis of Calcium Nephrolithiasis,” project 2, James E. Lingeman, PI, 7/1/2011 through 6/30/2016, total costs \$1,054,953 (in no-cost extension).

Co-investigator at 5%, NIH P01 DK56788, “Pathogenesis of Calcium Nephrolithiasis,” project 3, Andrew P. Evan, PI, competitive renewal for the period of 7/1/2011 through 6/30/2016, total costs \$1,967,080 (in no-cost extension).

Principal investigator (no salary, 1% effort), NIH S10 OD016208-01A1, “SkyScan 1176 Micro CT System,” \$382,900 direct and total costs for the period 3/1/14 through 2/28/15.

Co-investigator at 20%, NIH P01 DK43881, project 2, “Mechanisms of shock wave action for improved SWL,” James A. McAteer, p.i., \$1,179,702 total costs for the period of 7/1/09 through 6/30/14.

Co-investigator at 5%, NIH P50 DK083007, “Mayo Clinic O’Brien Research Center,” John Lieske, p.i. \$5,597,211 total costs for the period of 9/1/08 through 8/31/13.

Principal investigator at 50%, NIH R01 DK59933, “The structural basis of kidney stone fragility.” \$ 2,392,622 total costs for period of 8/1/2004 through 8/31/2013.

Principal investigator (no salary, 1% effort), NIH S10 RR023710, “SkyScan 1172 High-resolution desk-top micro-CT system.” \$297,300 total costs for purchase of a micro CT system, 4/1/07 through 3/31/08.

Preceptor at 3% (no salary), NIH GM067592, “Bridges to the doctorate.” Hal Broxmeyer, p.i. \$605,234 total costs for period of 6/1/03 through 5/31/06.

Co-investigator at 20%, NIH R01 DK55674, “Physical mechanisms of tissue damage in SWL,” James A. McAteer, p.i. \$1,430,607 total costs for the period of 4/1/00 through 6/30/06.

Co-investigator, Intramural grant, Medical University of South Carolina, “Transport properties of isolated perfused ray nephrons”, 7/1/87 through 6/30/88, principal investigator: Eric R. Lacy, total funding: \$17,642.

Principal investigator, National Institutes of Health grant R29 DK-39023, “Volume absorption in the renal proximal tubule”, 4/1/88 through 3/31/94, total direct costs: \$232,841.

Co-Principal investigator, NSF grant DCB-8903369, “Urea transport in the elasmobranch kidney”, 11/1/89 through 10/31/92, first year direct costs: \$63,541.

Principal investigator, American Heart Association South Carolina Affiliate Grant-In-Aid, “Composition of renal tubular basement membrane”, 7/1/90 through 6/30/91, direct costs: \$12,296.

- Principal investigator, American Diabetes Association IN Affiliate Small Grant, “Permeability properties of isolated glomerular basement membrane in insulin-dependent and non-insulin dependent diabetes mellitus,” 1/1/93 through 12/31/93, total costs: \$15,000.
- Principal investigator, American Heart Association Established Investigator Grant Award, “Permeability properties of renal tubular basement membrane”, 7/1/89 through 6/30/94, first year direct costs: \$35,000 plus fringe benefits costs. Total direct support at IU was \$130,709.
- Principal investigator, Juvenile Diabetes Foundation International, “Permeability of basement membranes and application to microvasculature,” 9/1/93 through 8/31/95, total costs: \$95,367.
- AHA Graduate Fellowship to Lawrence Mark, J.C. Williams, mentor. Total costs \$14,000, 7/1/98 through 6/30/99.
- AHA Graduate Fellowship to Lawrence Mark, J.C. Williams, mentor. Total costs \$16,000, 7/1/99 through 6/30/00.
- National Kidney Foundation—Indiana Affiliate grant-in-aid to Ryan F. Paterson (Urology Fellow), J.C. Williams, mentor, 2/1/01 to 1/31/02, \$5,000.
- Preceptor, American Foundation for Urologic Disease Research Scholar Application for Samuel C. Kim, M.D., “The structural basis of kidney stone fragility to lithotripter shock waves,” 7/1/02 through 6/30/04, total direct costs: \$60,000.

INVITED PRESENTATIONS—RESEARCH:

LOCAL

- 22 April 1992, “Role of basement membrane in volume absorption in proximal tubule,” Renal Conference, Division of Nephrology
- 14 October 1992, “Basement membrane composition in renal disease,” Renal Conference, Division of Nephrology
- 16 October 1992, “Basement membrane function and composition,” IU Center for Medical Education, Evansville
- 10 March 1993, “Role of basement membrane in proximal tubule volume absorption,” Department of Physiology and Biophysics
- 10 January 1994, “Permeability of basement membranes,” Pulmonology Research Conference
- 18 February 1994, two posters presented at the Indiana University School of Medicine Scientific Session, “Hydraulic conductivity and protein sieving coefficient of Matrigel, a basement membrane-like matrix” with J. Boyd-White, and “Automated determination of water and urea permeability of the water-tight apical membrane of a renal-derived epithelium” with R. Rivers, J. McAteer and J. Clendenon.
- 19 January 1995, “Basement membranes as barriers to macromolecules,” Department of Anatomy
- 14 August 1996, “The glomerular capillary wall as a dynamic barrier,” Renal Conference, Division of Nephrology
- 6 February 1997, “Protein permeation across the glomerular capillary wall,” Department of Anatomy
- 30 September 1998, “Holding back the tide: Can a gel like the glomerular basement membrane really be the filter that keeps protein out of the urine?”, Department of

- Chemistry, IUPUI. Similar seminars delivered on October 1 to the Department of Anatomy, and October 9 at the Northwest Center for Medical Education
- 3 October 2000, "Shear stress-induced cell injury in shock wave lithotripsy," Department of Anatomy and Cell Biology
- 19 September 2001, "Shock Waves and Kidney Stones: How High-Energy Sound Breaks Rocks Inside the Body," Department of Biology, Marian College
- 20 September 2001, "Shock Wave Lithotripsy: Breaking of Stones and Injury to Cells," Physics Department, IUPUI
- 11 September 2002, "Breaking Kidney Stones with Shock Waves: How Does a Laboratory Experiment Compare to What Happens inside a Patient?," Department of Biology, Marian College
- 19 November 2003, "Calculi and Computerized Tomography. Seeing Kidney Stones with CAT Scans," Department of Biology, Marian College
- 13 October 2004, "What Makes a Kidney Stone Hard to Break with Shock Waves? Experiments with Cat and Dog Stones." Department of Biology, Marian College
- 13 September 2005, "Kidney Stone Disease: Insights from Radiologic Investigation of Calculi," Department of Anatomy & Cell Biology
- 2 November 2005, "New Insights into Kidney Stone Disease," Department of Biology, Marian College
- 26 September 2006, "Use of Micro CT for Study of Kidney Stone Diseases," Department of Anatomy & Cell Biology
- 19 October 2006, "Using Micro 'CAT' Scanning to Study Kidney Stone Diseases," Department of Biology, Marian College
- 23 October 2007, "What CT Can Tell Us about Kidney Stones," Department of Biology, Marian College
- 18 November 2008, "Kidney Stones: Data on One Type within a Set of Diseases," Department of Biology, Marian College
- 30 October 2009, "Recent Advances in Understanding the Formation of Kidney Stones," Department of Biology, IUPUI
- 7 December 2011, "Using stone structure to understand different pathologies underlying renal calculus formation," Department of Urology, IU School of Medicine.
- 10 January 2017, "What are kidney stones and how do they form?," Department of Physiology, IU School of Medicine
- 22 September 2017, "Science and honesty," keynote address at the Indiana Academy of Science High School Talent Search.
- 12 October 2019, "The development of kidney stones on Randall's (interstitial) plaque: Type I kidney stones?," Anatomy, Cell Biology & Physiology Fall Research Forum.

NATIONAL

- 10 February 1992, "Ion transport and cystic fibrosis," presented as a lecture in the program, "Adventures in the New Biology," sponsored by Roper Hospital Continuing Medical Education, Charleston, SC.
- 6 March 1992, "Role of basement membrane in volume absorption in proximal tubule," Nephrology Research Conference, University of Cincinnati.
- 14-15 November 1992, "Oncotic effects across isolated renal tubular basement membrane," presented at the American Heart Association Research Fellowship Symposium, New Orleans, LA.

- 29-30 April 2005, "Stone structure: New insights from radiologic investigation," annual meeting of the R.O.C.K. Society (Research on Calculus Kinetics), Chicago, IL.
- 3-5 June 2005, "Micro CT Analysis of Kidney Stones," at the Scanco MicroCT User Meeting, Philadelphia, PA.
- 9-10 March 2006, "Determination of stone composition fragility by imaging," invited presentation as part of the NIDDK 2006 Urolithiasis Symposium, Baltimore, MD.
- 14 September 2006, "Use of micro CT for the study of kidney stone disease," at the Skyscan User Meeting, Philadelphia, PA.
- Member of the Organizing Committee, 1st International Urolithiasis Research Symposium, Indianapolis, IN, 2-3 November 2006
- 3 November 2006, "Using helical CT to assess stone fragility at diagnosis," at the 1st International Urolithiasis Research Symposium, Indianapolis, IN.
- 17 March 2007, "What CT can tell us about kidney stones," at the meeting of the ROCK Society, Dallas, TX.
- 31 March 2007, "Computed tomography: How it is helping understand the formation of kidney stones," at the Technical Professionals Special Interest Group meeting of the National Society of Black Engineers, Columbus, OH.
- 24 November 2008, "Kidney Stones: New Data on an Old Set of Diseases," Rutgers University, NJ.
- 3 October 2009, "Micro CT of Stones," Research on Calculus Kinetics meeting, Chaska, MN.
- 6 November 2010, "Micro CT and Its Value in Studying Stone Genesis," Research on Calculus Kinetics meeting, Los Angeles, CA.
- 26 April 2011, "Urolithiasis is Not Just One Disease" and "Knowns and Unknowns in How Kidney Stones Form," Division of Nephrology and Hypertension, Mayo Clinic, Rochester, MN.
- 17 September 2011, chair for Session 4 (Imaging and Phosphate Stones) of the Research on Calculus Kinetics meeting, Boston, MA.
- 1-2 December 2011, "Stone Imaging" and "Non-invasive Characterization of Renal Stones," at the Urology Program Director's Meeting, NIDDK, Ellicott City, MD.
- 6 May 2013, chair for Session 1 (Detection of Stones) of the Research on Calculus Kinetics meeting, San Diego, CA.
- 19 May 2014, "New Methods for Studying Stone Structure," invited lecture as part of the ROCK Society meeting, AUA, Orlando, FL
- 6 October 2014, "Pathogenesis of renal stones: Lessons from the stones themselves," invited seminar in the Division of Nephrology, NYU Langone Medical Center, New York, NY
- 9 May 2016, chair for Moderated Poster Session MP67: Stone Disease: Basic Research & Pathophysiology II, AUA, San Diego, CA
- 20 October 2016, "Distinct Mechanisms for Early Stone Formation," University of California, San Francisco, School of Medicine.
- 6 April 2017, "Randall's Plaques Overview," invited talk as part of the CaOx Translational Summit meeting, Madison, WI.
- 27 July 2017, "Risk of Renal Stone Formation," invited talk as part of a panel presentation to the National Academies of Sciences, Engineering, and Medicine's Committee to Review NASA's Evidence Reports on Human Health Risks, Washington, DC.
- 27 October 2017, "Novel Stone Imaging for Stone Characterization," invited talk as part of the Clinical Society of Genitourinary Surgeons meeting, Indianapolis, IN

30 March 2019, "Neutrophil infiltration and NETosis in the pathogenesis of human kidney stones," ROCK Society Annual Meeting, Cleveland, OH.

INTERNATIONAL

11-16 November 1996, "Mechanisms by which matrix excludes serum proteins: Role of the glomerular basement membrane in renal filtration," presented as a seminar in addition to teaching as part of a graduate course in modern biology at the Gulbenkian Institute of Science in Portugal.

3 September 2001, co-chair of oral presentation session, "Shock Waves In Medicine And Lithotripsy," 17th International Congress on Acoustics, Rome, Italy.

21-24 September 2003, "Imaging Modalities today and tomorrow: Assessing stone composition and fragility," 21st World Congress on Endourology & Shockwave Lithotripsy, Montréal.

21 December 2005, "Initial Mechanisms of Attachment and Growth of Kidney Stones," Department of Urology, Josephine Nefkens Institute, Erasmus Medical College, Rotterdam, The Netherlands.

Member of the section, "Evaluation/Imaging," for the 2nd International Consultation on Stone Disease, held in Paris, France in September 2007.

8 September 2008, "Kidney Stones: New Data on an Old Set of Diseases," in the Faculty of Medicine and Surgery, University of Verona, Italy.

16 October 2008, "Micro CT: de la composition à la structure du calcul," as part of the Confrontations Clinico-biologiques de l'Hôpital Necker sur la Lithiase Urinaire, Paris, France.

17 October 2009, co-chair of Session 6, 6th eULIS Symposium (13th European Symposium on Urolithiasis), Como, Italy.

19 October 2009, "Etiologies of Urolithiasis and Insights from Micro CT Analysis of Patient Stones," Facoltà di Medicina e Chirurgia, Università Cattolica del Sacro Cuore, Rome, Italy.

8 September 2011, "Understanding stone formation from imaging," a Keynote Lecture at the First Meeting of the EAU Section of Urolithiasis (eULIS), London, United Kingdom.

10 May 2012, "Stone formation: How is mineral retained within the kidney?," invited lecture as part of the 12th International Symposium on Urolithiasis, Ouro Preto, Brazil.

16 March 2013, "Imaging for pre-treatment evaluation of stone composition and fragility," invited lecture as part of the European Association of Urology Annual Congress, Milan, Italy.

22 March 2013, "Noninvasive differentiation of uric acid versus non-uric acid stones," invited lecture as part of the conference, Nephrolithiasis: A Systemic Disorder, Rome, Italy.

5 September 2013, "Retention and growth of urinary stones: Insights from imaging," Keynote Lecture as part of the 2nd Meeting of the EAU Section of Urolithiasis (eULIS), Copenhagen, Denmark

5 September 2013, chair for Poster Session 2 (Stones and metabolism), 2nd Meeting of the EAU Section of Urolithiasis (eULIS), Copenhagen, Denmark

6 September 2013, "Predicting stone fragmentation in SWL using imaging," lecture as part of the 2nd Meeting of the EAU Section of Urolithiasis (eULIS), Copenhagen, Denmark

- 6 September 2013, chair for Poster Session 7 (Basic research), 2nd Meeting of the EAU Section of Urolithiasis (eULIS), Copenhagen, Denmark
- 11 December 2014, “Delving deep into the structure and ultrastructure of stones: insights into their pathogenesis and potential treatment,” invited lecture as part of the 2nd Experts in Stone Disease Conference, Cape Town, South Africa.
- 12 December 2014, “What is the priority area for future stone research? Where should the focus lie? A basic scientist’s point-of-view,” invited lecture as part of the 2nd Experts in Stone Disease Conference, Cape Town, South Africa.
- 12 December 2014, “Should I send stones for analysis? What analyses should I request and how should I prepare the stone samples?,” invited lecture as part of the 2nd Experts in Stone Disease Conference, Cape Town, South Africa.
- 20 February 2015, “Quantitative proteomic analysis reveals the complexity of the human kidney stone matrix,” invited talk as part of the annual ROCK Society meeting, Fort Lauderdale, FL.
- 26 March 2015, “Crucial nature of stone analysis, including stone morphology,” invited lecture as part of the Consensus Conference for the Metabolic Diagnosis and Medical Prevention of Calcium Nephrolithiasis and Its Systemic Manifestations, Rome, Italy.
- 5 August 2015, “Micro computed tomographic X-ray imaging (micro CT): A versatile and non-destructive method for biological specimens,” invited lecture as a part of Microscopy & Microanalysis, Portland OR.
- 10 September 2015, “What have we learned from imaging?,” invited lecture as part of the 3rd meeting of the EAU Section of Urolithiasis, Alicante, Spain.
- 10 June 2016, inaugural lecture for appointment as Adjunct Professor in Urology, University of Southern Denmark, Fredericia, Denmark.
- 20 July 2016, “Papillary Imaging and Stone Recurrence,” invited lecture as part of the 13th International Symposium on Urolithiasis, Chiba, Japan.
- 21 July 2016, “Randall’s Plaque,” invited lecture as part of the 13th International Symposium on Urolithiasis, Chiba, Japan.
- 8 June 2017, “MicroCT for the study of renal stones,” invited talk as part of Investigations of Biological Calcifications, the 3rd International Meeting on Nephrolithiasis, “Renal Stones in Practice: An Advanced Course,” Rome, Italy.
- 8 June 2017, co-chair of Session I, the 3rd International Meeting on Nephrolithiasis, “Renal Stones in Practice: An Advanced Course,” Rome, Italy.
- 27 June 2017, “Stone Formation,” invited lecture as part of the special session honoring Edwin Carstensen, 3rd Joint meeting of the Acoustical Society of America and the European Acoustic Association, Boston, MA.
- 13 October 2017, “Update on stone formation,” invited lecture as part of the 10 year Anniversary Symposium, Urological Research Center, Vejle Sygehus, Denmark.
- 20 June 2019, co-chair for the Consensus Conference on the Use of Urinalysis in the Treatment of Nephrolithiasis, Verona, Italy.
- 13 September 2019, faculty of the Consultation on Kidney Stones, Copenhagen, Denmark.
- 12-14 November 2020, “Randall’s Plaque Stone Formers,” Symposium on Kidney Stones and Mineral Metabolism, Brussels, Belgium.

SERVICE:

UNIVERSITY SERVICE:

DEPARTMENT

1993-1994	Chair, Strategic Planning Committee
1992-2015	Graduate Studies Committee, Dept. of Anatomy & Cell Biology
1996-2013	Chair, Graduate Studies Committee, Dept. of Anatomy & Cell Biology
1996-1997	Faculty Search Committee, Dept. of Anatomy & Cell Biology
1998-1999	Faculty Search Committee, Dept. of Anatomy & Cell Biology
1999-2000	Faculty Search Committee, Dept. of Anatomy & Cell Biology
2007-2008	Faculty Search Committee, Dept. of Anatomy & Cell Biology
2006-2014	Primary Committee
2013	Mentoring Task Force
2014	Shellhamer Teaching Award Selection Committee
2014-present	Departmental Steering Committee
2015-present	Chair, Primary Committee

SCHOOL OF MEDICINE

1993-1995	Student Promotions Committee, School of Medicine
1996-1999	Student Promotions Committee, School of Medicine
1996	Medical Histology/Physiology Curriculum planning committee
2003, 2004	Interviewer, search for Associate Dean for the Graduate School
2003-2007	Interviewer for Dual-degree candidates
2003-2006	Advisory Committee, Bridges to the Doctorate R25 grant
2004-2006	Council of Departments (for information technology)
2005	Chair, Planning Committee for the Gold Humanism Honor Society
2005-2007	Open Enrollment Planning/Steering Committee (Graduate School)
2011-2013	Student Promotions Committee, School of Medicine
2008-2014	IUSM Graduate Committee
2012-2013	Research Technicians Committee
2014-2015	IUSM Graduate Oversight Committee
2015	Co-Leader, Statewide Histology Learning Objectives Team
2014-present	IUSM Promotion & Tenure Committee
2017-2018	IUSM Lecturers & Clinical Rack Faculty Promotions Committee
Nov 2017	Academic Program Review Team, Department of Pharmacology and Toxicology
2019-2020	Member, Faculty Review and Enhancement Committee

IUPUI

1999-2015	Graduate Affairs Committee, IUPUI
2003-2004	Nominating Committee for Graduate Council, IUPUI
2014-2015	IUPUI Promotion & Tenure Committee
7 Dec 2015	Panel member, Excellence in Research, a promotion and tenure program for junior faculty
6-8 Nov 2017	Review panel for Pharmacology/Toxicology Graduate Program

INDIANA UNIVERSITY

1999-2007	Curriculum Subcommittee of Graduate Council
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- 2008 Kinsley Dissertation Award Committee
- 2009-2010 IU Graduate Council Nominating Committee
- 1999-2012 IU Graduate Faculty Council
- 2010-2012 IU Graduate Faculty Council Awards Committee
- 2010-2012 Chair, IU Graduate Faculty Council
- 2014 Search and Screen Committee for IUPUI Associate Vice Chancellor for Graduate Education and Associate Dean, The Graduate School, IU

PROFESSIONAL SERVICE:

GRANT REVIEW

National Institutes of Health

- 2000 Study Section SSS-M, bioengineering partnership proposals
- 2001 Study Section SSS-M, bioengineering and tissue engineering
- 2004 Study Section ZRG1-UKGD(01)Q, renal vascular water and solute transport
- 2007 Study Section ZRG1 RUS-C(11), kidney monitoring and therapeutics
- 2009 Study Section ZRG1 DKUS-K(11), kidney monitoring and therapeutics
- 2015 Study Section ZRG1 SBIB-Y (30), S10 shared instrumentation grants
- 2016 Co-Chair, Study Section ZRG1 SBIB-Y (30), S10 shared instrumentation grants
Study Section ZRG1 DKUS-G(12), R44 SBIR phase II grants
- 2017 Study Section ZRG1 SBIB-Y (30), S10 shared instrumentation grants

Veterans Administration

- 1990 Merit Review (epithelial permeability)
- 1991 Career Development Award review (membrane permeability)
- 1994 Merit Review (epithelial permeability)
- 1998 Merit Review (glomerular permeability)

National Science Foundation

- 1995 BIO/Molecular and Cellular Biosystems (epithelial transport)
- 1997 BIO/Molecular and Cellular Biosystems (epithelial transport)

American Heart Association, Mid-Atlantic Consortium

- 2000 Pre-doctoral Fellowship (microvascular permeability)

New Zealand Lottery Health Research Grants Board

- 2002 Research Project proposal (membrane transport)

U.S. Civilian Research and Development Foundation

- 2005 Cooperative Grants Program (cavitation and shock wave lithotripsy)

Medical Research Council, South Africa

- 2007 Research Grants Program (kidney stones)

American Urological Association

- 2008 Fellowship program (kidney stones)

Oxalosis and Hyperoxaluria Foundation

- 2012 Research grants program (kidney stones)

Mayo Clinic O'Brien Research Center

- 2012 Pilot grant program (micro CT)

Israel Science Foundation

- 2013 Research grants program (kidney stones)

W. M. Keck Foundation

- 2013 Medical Research Program (mosquito biology)

Kidney Research UK

2018 Research Support Program (kidney stones)

Willy Gepts Research Foundation of the University Hospital Brussels, Belgium

2020 research grant program (kidney stones)

REVIEW OF FOREIGN DISSERTATIONS

Jan-2001 Examiner for PhD dissertation of Kerryn A. Greive, Monash University, Australia (student of Wayne D. Comper, PhD)

Nov-2010 Examiner for PhD dissertation of A. Mohamed Ali, VIT University, Vellore, Tamil Nadu, India (student of Prof. N. Arunai Nambi Raj)

Nov-2013 Examiner for PhD dissertation of Dalielah Jappie-Mahomed, University of Cape Town, South Africa (student of Allen Rodgers, PhD)

Sep-2015 Examiner for PhD dissertation of Saajidah Fakier, University of Cape Town, South Africa (student of Allen Rodgers, PhD)

Apr-2017 External Reviewer for PhD dissertation of Sandra Nwokeoha, Oxford University, UK (student of Robin Cleveland, PhD)

MEETING ABSTRACT REVIEW

Oct 2015 American Urological Association, abstracts for the 2016 annual meeting

Oct 2016 American Urological Association, abstracts for the 2017 annual meeting

Nov 2017 American Urological Association, abstracts for the 2018 annual meeting

Nov 2018 American Urological Association, abstracts for the 2018 annual meeting

MEETING PROGRAM ORGANIZATION AND PLANNING

Member, Organizing Committee for the Translational Summit on CaOx Urolithiasis, to be held on 6-7 April 2017, Madison, WI.

MEMBER OF EDITORIAL BOARD

1995-2001 *Proceedings of the Society for Experimental Biology and Medicine*

2007-present *Urolithiasis* (previously *Urological Research*)

REVIEWER FOR JOURNALS (current calendar yr; 331 papers during the yrs 1991-2019)

Evidence-Based Complementary and Alternative Medicine (M.M. Machado, ed.), 1/20

Urology (B.R. Matlaga, ed.), 1/20

Urolithiasis (A. Rodgers, ed.), 2/20

Evidence-Based Complementary and Alternative Medicine (M.M. Machado, ed.), 3/20

Brazilian Journal of Nephrology, (A. Goncalves, ed.), 3/20

Journal of Endourology (J. Landman, ed.), 4/20

BJU International (B. Turney, ed.), 5/20

International Medical Case Reports Journal (R. Prineas, ed.), 5/20

Clinical Kidney Journal (R. Torra, Ed.), 6/20

ACS Biomaterials Science & Engineering (I.-K. Park, ed.), 6/20

Urology (M.J. Semins, ed.), 7/20

Analytical Chemistry (J.E. Pemberton, ed.), 7/20

BJU International (P. Osther, ed.), 7/20

Journal of Endourology (J. Landman, ed.), 8/20

BMC Urology (A. Cicione, ed.), 9/20

PUBLICATIONS:

1. **Williams, J.C.**, and K.W. Beyenbach. Differential effects of secretagogues on Na and K secretion in the Malpighian tubules of *Aedes aegypti* (L.). *J Comp Physiol* 149:511-517, 1983.
2. **Williams, J.C.**, H.H. Hagedorn and K.W. Beyenbach. Dynamic changes in flow rate and composition of urine during the post-bloodmeal diuresis in *Aedes aegypti* (L.). *J Comp Physiol* 153:257-265, 1983.
3. **Williams, J.C.**, and K.W. Beyenbach. Differential effects of secretagogues on the electrophysiology of the Malpighian tubules of the yellow fever mosquito. *J Comp Physiol* 154:301-309, 1984.
4. Schafer, J.A., and **J.C. Williams**. Transport of metabolic substrates by the proximal nephron. *Annu Rev Physiol* 47:103-125, 1985.
5. **Williams, J.C.**, D.W. Barfuss, and J.A. Schafer. Transport of solute in proximal tubules is modified by changes in medium osmolality. *Am J Physiol* 250 (Renal Fluid and Electrolyte Physiol 19):F246-F255, 1986.
6. **Williams, J.C.**, and J.A. Schafer. A model of osmotic and hydrostatic pressure effects on volume absorption in the proximal tubule. *Am J Physiol* 253 (Renal Fluid and Electrolyte Physiol 22):F563-F575, 1987.
7. **Williams, J.C.**, and J.A. Schafer. Cortical interstitium as a site for solute polarization during tubular absorption. *Am J Physiol* 254 (Renal Fluid and Electrolyte Physiol 23):F813-F823, 1988.
8. Ryu, J.Y., R.L. Davis, J.C. Williams, and **J.C. Williams** (Jr.). Evaluation of the minihollow cathode emission source for the analysis of microsamples. *Applied Spectroscopy* 42(8):1379-1387, 1988.
9. J.T. McDonald, J.C. Williams, and **J.C. Williams** (Jr.). Evaluation of the time-resolved spark for the determination of sodium, potassium, and calcium in microsamples. *Applied Spectroscopy* 43(4):697-702, 1989.
10. **Williams, J.C.**, and J.A. Schafer. Measurement of transmural water flow in isolated perfused tubule segments. *Meth Enzymol* 191:232-252, 1990.
11. Schafer, J.A., and **J.C. Williams**. Flux measurements in isolated perfused tubules. *Meth Enzymol* 191:354-370, 1990.
12. **Williams, J.C.** Cystic fibrosis: a disease caused by a single defect in salt-transporting epithelial cells. *J South Carolina Med Assoc* 88:331-338, 1992.
13. **Williams, J.C.** Permeability of basement membranes to macromolecules. *Proc Soc Exp Biol Med* 207:13-19, 1994.
14. Rivers, R.L., and **J.C. Williams**. Effect of solute permeability in determination of elastic modulus using the vesicular swelling method. *Biophys J* 57:627-631, 1990.

15. **Williams, J.C.**, D. Abrahamson, and J.A. Schafer. Structural changes induced by osmotic water flow in rabbit proximal tubule. *Kidney Int* 39:672-683, 1991.
16. Tseng, J.-L., J.C. Williams, R.B. Bartlow, S.T. Griffin, **J.C. Williams** (Jr.). Increased analytical precision in the hollow cathode discharge emission source by improved discharge current control. *Anal Chem* 63:1933-1942, 1991.
17. **Williams, J.C.** Oncotic effects across the isolated perfused renal tubular basement membrane. *Am J Physiol* 264 (Renal Fluid and Electrolyte Physiol 33):F328-F336, 1993.
18. Mixon, P.D., S.T. Griffin, **J.C. Williams** (Jr.), X.J. Cai, and J.C. Williams. Pulse optimization criteria for the microcavity hollow cathode discharge emission source. *J Anal Atomic Spec*, 9:697-700, 1994.
19. Brees, D.K., R.C. Ogle, and **J.C. Williams**. Laminin and fibronectin content of mouse glomerular and tubular basement membrane. *Renal Physiol Biochem* 18:1-11, 1995.
20. **Williams, J.C.**, and **J.C. Williams** (Jr.). Sodium. In: *Encyclopedia of Analytical Science*, A. Townshend, ed. Academic Press, London, 1995, pp. 4680-4683.
21. Boyd-White, J., and **J.C. Williams**. Effect of cross-linking on matrix permeability: A model for AGE-modified basement membrane. *Diabetes* 45:348-353, 1996.
22. Brees, D.K., F.N. Hutchison, G.J. Cole, and **J.C. Williams**. Differential effects of diabetes and glomerulonephritis on glomerular basement membrane composition. *Proc Soc Exp Biol Med* 212:69-77, 1996.
23. Rivers, R.L., J.A. McAteer, J.L. Clendenon, B.A. Connors, A.P. Evan, and **J.C. Williams**. Membrane permeability in MDCK cysts. *Am J Physiol* 271 (Cell Physiol 40):C226-C234, 1996. (made cover of journal)
24. Lifshitz, D.A., **J.C. Williams**, B. Sturtevant, A.P. Evan, and J.A. McAteer. A method to quantitate cavitation-induced mechanical damage for in vitro shock wave lithotripsy (SWL) studies. *Proceedings of the VIII International Symposium on Urolithiasis*, pp. 399-400, 1996.
25. Lifshitz, D.L., **J.C. Williams**, B. Sturtevant, B.A. Connors, A.P. Evan, and J.A. McAteer. Quantitation of shock wave cavitation damage in vitro. *Ultrasound Med Biol*, 23:461-471, 1997.
26. McAteer, J.A., M.A. Stonehill, K. Colmenares, **J.C. Williams**, A.P. Evan, R.O. Cleveland, M.R. Bailey, L.A. Crum. SWL cavitation damage in vitro: pressurization unmasks a differential response of foil targets and isolated cells. *Proceedings 16th International Congress on Acoustics and 135th Meeting Acoustical Society of America*, pp. 2497-2498, 1998.
27. Cleveland, R.O., M.R. Bailey, L.A. Crum, M.A. Stonehill, **J.C. Williams**, and J.A. McAteer. Effect of overpressure on dissolution and cavitation of bubbles stabilized on a metal surface. *Proceedings 16th International Congress on Acoustics and 135th Meeting Acoustical Society of America*, pp. 2499-2500, 1998.
28. **Williams, J.C.**, L.A. Mark, and S. Eichholtz. Partition and permeation of dextran in polyacrylamide gel. *Biophysical Journal* 75:493-502, 1998.

29. Stonehill, M.A., **J.C. Williams**, M.R. Bailey, D. Lounsbury, R.O. Cleveland, L.A. Crum, A.P. Evan, and J.A. McAteer. An acoustically matched high pressure chamber for control of cavitation in shock wave lithotripsy: mechanisms of shock wave damage in vitro. *Methods Cell Sci*, 19:303-310, 1998.
30. Bailey, M.R., R.O. Cleveland, O.A. Sapozhnikov, J.A. McAteer, **J.C. Williams**, and L.A. Crum. Effect of increased ambient pressure on lithotripsy-induced cavitation in bulk fluids and at surfaces. *J Acoust Soc Amer* 105:1267-1270, 1999.
31. **Williams, J.C.**, M.A. Stonehill, K. Colmenares, A.P. Evan, S.P. Andreoli, R.O. Cleveland, M.R. Bailey, L.A. Crum, and J.A. McAteer. Effect of macroscopic air bubbles on cell lysis by shock wave lithotripsy in vitro. *Ultrasound Med Biol*, 25(3):473-479, 1999.
32. **Williams, J.C.**, J. Woodward, M.A. Stonehill, A.P. Evan, and J.A. McAteer. Cell damage by lithotripter shock waves at high pressure to preclude cavitation. *Ultrasound Med Biol*, 25(9):1445-1449, 1999.
33. Saw, K.C., J.A. McAteer, A. Monga, G.T. Chua, J.E. Lingeman, **J.C. Williams**. Helical CT of urinary calculi: Effect of stone composition, stone size, and scan collimation. *AJR (American Journal of Roentgenology)*, 175:329-332, 2000.
34. Mark, L.A., J.L. Kaplan, and **J.C. Williams**. An exact solution to the electrostatic interaction between an ion-penetrable sphere and an ion-penetrable rod. *Journal of Colloid and Interface Science*, 229:102-106, 2000.
35. Saw, K.C., J.A. McAteer, N.S. Fineberg, A.G. Monga, G.T. Chua, J.E. Lingeman, **J.C. Williams**. Calcium stone fragility is predicted by helical CT attenuation values. *Journal of Endourology* 14(6):471-474, 2000.
36. Lokhandwalla, M., J.A. McAteer, **J.C. Williams**, and B. Sturtevant. Mechanical hemolysis in shock wave lithotripsy (SWL): II. In vitro cell lysis due to shear. *Physics in Medicine and Biology*, 46:1245-1264, 2001.
37. Williams J.C., K.C. Saw, A.G. Monga, G.T. Chua, J.E. Lingeman, J.A. McAteer. Correction of helical CT attenuation values with wide beam collimation: in vitro test using urinary calculi. *Academic Radiology* 8:478-483, 2001.
38. Monga, A.G., K.C. Saw, **J.C. Williams**, N.S. Fineberg, J.A. McAteer, J.E. Lingeman, and G.T. Chua. Effect of radiographic contrast media exposure on spiral CT attenuation of renal calculi. *Academic Radiology* 8:982-986, 2001.
39. Williams J.C., R.F. Paterson, K. Kopecky, J.E. Lingeman, and J.A. McAteer. High resolution detection of internal structure in renal calculi by helical CT. *Journal of Urology*, 167:322-326, 2002. (made cover of journal)
40. Sapozhnikov, O.A., V.A. Khokhlova, M.R. Bailey, **J.C. Williams**, J.A. McAteer, R.O. Cleveland, and L.A. Crum. Effect of overpressure and pulse repetition frequency on cavitation in shock wave lithotripsy. *J Acoust Soc Am*, 112:1183-1195, 2002.
41. Evan, A.P., L.R. Willis, J.A. McAteer, M.R. Bailey, B.A. Connors, Y. Shao, J.E. Lingeman, **J.C. Williams**, N.S. Fineberg, L.A. Crum. Kidney damage and renal functional changes are minimized by waveform control that suppresses cavitation in SWL. *J Urol* 168:1556-1562, 2002.

42. Paterson, R.F., D.A. Lifshitz, J.E. Lingeman, A.P. Evan, B.A. Connors, N.S. Fineberg, **J.C. Williams**, and J.A. McAteer. Stone fragmentation in shock wave lithotripsy is improved by slowing the shock wave rate: studies with a new animal model. *J Urol* 168: 2211-2215, 2002.
43. Paterson, R.F., J.E. Lingeman, A.P. Evan, B.A. Connors, **J.C. Williams**, and J.A. McAteer. Percutaneous stone implantation in the pig kidney: a new animal model for lithotripsy research. *J Endourol* 16(8):543-547, 2002.
44. Williams J.C., D.L. Rietjens, C.A. Zarse, and J.A. McAteer. Breakage of membrane vesicles by shock waves is independent of cavitation. *Proceedings 17th International Congress on Acoustics*, VII:182-183, 2002.
45. McAteer J.A., R.F. Paterson, D.A. Lifshitz, J.E. Lingeman, D.L. Rietjens, B.A. Connors, A.P. Evan, and **J.C. Williams**. In vitro model of shock wave lithotripsy (SWL) produces stone breakage equivalent to that seen in vivo. *Proceedings 17th International Congress on Acoustics*, VII:180-181, 2002.
46. Paterson R.F., D.A. Lifshitz, J.E. Lingeman, **J.C. Williams**, D.L. Rietjens, A.P. Evan, B.A. Connors, M.R. Bailey, L.A. Crum, R.O. Cleveland, Y.A. Pishchalnikov, I.V. Pishchalnikova, and J.A. McAteer. Slowing the pulse repetition frequency in shock wave lithotripsy (SWL) improves stone fragmentation in vivo. *Proceedings 17th International Congress on Acoustics*, VII:200-201, 2002.
47. McAteer J.A., R.O. Cleveland, R.F. Paterson, D.L. Rietjens, A.P. Evan, B.A. Connors, J.E. Lingeman, Y.A. Pishchalnikov, I.V. Pishchalnikova, and **J.C. Williams**. Evidence that cavitation and spall contribute to stone failure in an animal model of kidney stone fragmentation by shock wave lithotripsy (SWL). *Proceedings 17th International Congress on Acoustics*, VII:202-203, 2002.
48. McAteer J.A., R.O. Cleveland, D.L. Rietjens, Y.A. Pishchalnikov, I.V. Pishchalnikova, and **J.C. Williams**. Cavitation promotes spall failure of model kidney stones treated by shock wave lithotripsy in vitro. *Proceedings 17th International Congress on Acoustics*, VII:188-189, 2002.
49. Cleveland R.O., J.A. McAteer, and **J.C. Williams**. Correlation between the predicted stress field and observed spall-failure in artificial kidney stones treated by shock wave lithotripsy (SWL) in vitro. *Proceedings 17th International Congress on Acoustics*, VII:174-175, 2002.
50. Williams J.C., K.C. Saw, R.F. Paterson, E.K. Hatt, J.A. McAteer, and J.E. Lingeman. Variability of renal stone fragility in shock wave lithotripsy. *Urology* 61(6):1092-1096, 2003.
51. Kuo, R.L., R.F. Paterson, T.M. Siqueira, A.P. Evan, J.A. McAteer, **J.C. Williams**, and J.E. Lingeman. In vitro assessment of ultrasonic lithotripters. *J Urol* 170:1101-1104, 2003.
52. Pishchalnikov Y.A., O.A. Sapozhnikov, M.R. Bailey, **J.C. Williams**, R.O. Cleveland, T. Colonius, L.A. Crum, A.P. Evan, J.A. McAteer. Role of cavitation bubble cloud activity in the breakage of kidney stones by lithotripter shock waves. *J Endourol* 17(7): 435-446, 2003.
53. J.A. McAteer, **J.C. Williams**, A.P. Evan, L.R. Willis, M.R. Bailey, L.A. Crum, and R.O. Cleveland. Mechanisms of cell and tissue damage in shock wave lithotripsy. In: M.A.

- Andrew, L.A. Crum, and S. Vaezy, eds. Proceedings of the International Symposium on Therapeutic Ultrasound, University of Washington, Seattle, pp. 491-500, 2003.
54. Lingeman J.E., M. Delius, A.P. Evan, M. Gupta, K. Sarica, W. Strohmaier, J.A. McAteer, and **J.C. Williams**. Committee 8: Bioeffects and Physical Mechanisms of SW Effects in SWL. In: Stone Disease. 1st International Consultation in Stone Disease, J. Segura, P. Conort, S. Khoury, C. Pak, G.M. Preminger and D. Tolley. Paris, Health Publications: 249-286, 2003.
 55. Williams J.C., J.A. McAteer, R.O. Cleveland, Y.A. Pishchalnikov, and I.V. Pishchalnikova. Linkage of cavitation with spall failure in lithotripsy: in vitro and in vivo results. In: Nonlinear Acoustics at the Beginning of the 21st Century, O.V. Rudenko and O.A. Sapozhnikov, eds., Faculty of Physics, MSU, Moscow, pp. 391-394, 2003.
 56. Pishchalnikov, Y.A., O.A. Sapozhnikov, **J.C. Williams**, A.P. Evan, J.A. McAteer, R.O. Cleveland, T. Colonius, M.R. Bailey, and L.A. Crum. Cavitation bubble cluster dynamics induced by lithotripter shock waves at the surface of model and natural kidney stones. In: Nonlinear Acoustics at the Beginning of the 21st Century, O.V. Rudenko and O.A. Sapozhnikov, eds., Faculty of Physics, MSU, Moscow, pp. 395-398, 2003.
 57. Bailey, M.R., L.A. Crum, , A.P. Evan, J.A. McAteer, **J.C. Williams**, O.A. Sapozhnikov, R.O. Cleveland, and T. Colonius. Cavitation in shock wave lithotripsy. Fifth International Symposium on Cavitation (CAV2003), Nov 1-3, 2003, Osaka, Japan. Published online at <http://cav2003.me.es.osaka-u.ac.jp/Cav2003/Papers/Cav03-OS-2-1-006.pdf>.
 58. Bailey, M.R., R.O. Cleveland, T. Colonius, L.A. Crum, A.P. Evan, J.E. Lingeman, J.A. McAteer, O.A. Sapozhnikov, and **J.C. Williams**. The role of cavitation in tissue injury and stone comminution in shock wave lithotripsy. Proc. of IEEE-UFFC Ultrasonics Symposium (Honolulu, Hawaii, USA, 2003) 1H-2, 2003 (also published online at <http://www.ieee-uffc.org/archive/ul/proceed/2003/proceed/1H-2.pdf>).
 59. Kuo, R.L., R.F. Paterson, T.M. Siqueira, A.P. Evan, J.A. McAteer, **J.C. Williams**, and J.E. Lingeman. In vitro assessment of lithoclast ultra intracorporeal lithotripter. J Endourol 18(2):153-156, 2004.
 60. Zarse C.A., J.A. McAteer, M. Tann, A.J. Sommer, S.C. Kim, R.F. Paterson, E.K. Hatt, J.E. Lingeman, A.P. Evan, and **J.C. Williams**. Helical CT accurately reports urinary stone composition using attenuation values: In vitro verification using high resolution micro CT calibrated to FT-IR microspectroscopy. Urology 63(5):828-833, 2004.
 61. Zarse, C.A., J.A. McAteer, A.J. Sommer, S.C. Kim, E.K. Hatt, J.E. Lingeman, A.P. Evan, and **J.C. Williams**. Nondestructive analysis of urinary calculi using micro computed tomography. BMC Urology 4:15, 2004. [PMC544194] (<http://www.biomedcentral.com/content/pdf/1471-2490-4-15.pdf>)
 62. **Williams, J.C.**, S.C. Kim, C.A. Zarse, J.A. McAteer, and J.E. Lingeman. Progress in the use of helical CT for imaging urinary calculi. J Endourol, 18(10):937-941, 2004.
 63. Evan, A.P., J.A. McAteer, **J.C. Williams**, L.R. Willis, M.R. Bailey, L.A. Crum, J.E. Lingeman, and R.O. Cleveland. Shock wave physics of lithotripsy: mechanisms of shock wave action and progress toward improved shock wave lithotripsy. In: Textbook

- of Minimally Invasive Urology, R. Moore, J.T. Bishoff, S. Loening, and S.G. Docimo, Eds. Martin Dunitz Limiter, London, chapter 28, pp 425-438, 2004.
64. Paterson, R.F., S.C. Kim, R.L. Kuo, J.E. Lingeman, A.P. Evan, B.A. Connors, **J.C. Williams**, and J.A. McAteer. Shock wave lithotripsy of stones implanted in the proximal ureter of the pig. *J Urol*, 173:1391-1394, 2005.
 65. Adams, L.G., **J.C. Williams**, J.A. McAteer, E.K. Hatt, J.E. Lingeman, and C.A. Osborne. In vitro evaluation of canine and feline calcium oxalate urolith fragility via shock wave lithotripsy. *Am J Vet Res* 66(9):1651-1654, 2005.
 66. Kim, S.C., E.K. Hatt, J.E. Lingeman, R.B. Nadler, J.A. McAteer, and **J.C. Williams**. Cystine: helical CT characterization of rough and smooth calculi in vitro. *J Urol* 174:1468 –1471, 2005.
 67. Pishchalnikov, Y.A., O.A. Sapozhnikov, M.R. Bailey, I.V. Pishchalnikova, **J.C. Williams**, and J.A. McAteer, Cavitation selectively reduces the negative-pressure phase of lithotripter shock pulses *Acoustic Research Letters Online* 6(4):280-286, 2005.
 68. McAteer, J.A., **J.C. Williams**, R.O. Cleveland, J.V. Cauwelaert, M.R. Bailey, D.A. Lifshitz, and A.P. Evan. Ultracal-30 gypsum artificial stones for research on the mechanisms of stone breakage in shock wave lithotripsy. *Urol Res* 33:429-434, 2005.
 69. McAteer, J.A., M.R. Bailey, **J.C. Williams**, R.O. Cleveland, and A.P. Evan. Strategies for improved shock wave lithotripsy. *Minerva Urologica e Nefrologica* 57(4):271-287, 2005.
 70. **Williams, J.C.** Viewing windows do not alter Hounsfield units in CT scans. (Letter) *Urol Res* 33:481-482, 2005.
 71. Pishchalnikov, Y.A., J.A. McAteer, I.V. Pishchalnikova, S. Beard, **J.C. Williams**, and M.R. Bailey. Bubbles trapped at the coupling surface of the treatment head significantly reduce acoustic energy delivered in shock wave lithotripsy. *AIP Conference Proceedings* 829: International Symposium of Therapeutic Ultrasound (Boston, MA) 643-647, 2005.
 72. Matlaga, B.R., **J.C. Williams**, S.C Kim, R.L. Kuo, A.P. Evan, S.B. Bledsoe, F.L. Coe, E.M. Worcester, L.C. Munch, and J.E. Lingeman. Endoscopic evidence of calculus attachment to Randall's plaque. *J Urol* 175:1720-1724, 2006.
 73. Pishchalnikov, Y.A., J.A. McAteer, **J.C. Williams**, I.V. Pishchalnikova, and R.J. VonDerHaar. Why stones break better at slow shock wave rate than at fast rate: In vitro study with a research electrohydraulic lithotripter. *J Endourol* 20(8):537-541, 2006.
 74. **Williams, J.C.**, C.A. Zarse, M.E. Jackson, F.A. Witzmann, and J.A. McAteer. Variability of protein content in calcium oxalate monohydrate (COM) stones. *J Endourol* 20(8):560-564, 2006. [PMC155562]
 75. Pishchalnikov, Y.A., J.A. McAteer, R.J. VonDerHaar, I.V. Pishchalnikova, **J.C. Williams**, and A.P. Evan. Detection of significant variation in acoustic output of an electromagnetic lithotripter. *J Urol* 176:2294-2298, 2006.
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