NAME: Robert A. Fenton **AGE**: 51 **NATIONALITY**: British (lived in Denmark for 20 years)
WEB: https://biomed.au.dk/Fenton-lab/

ACADEMIC BACKGROUND:

2010- Professor of Cell Biology, Dept. of Biomedicine, Aarhus University (AU)
2005-2009 Ass. Professor and Marie Curie Intra-European Fellow, Dept. of Anatomy, AU
2001-2005 *Claude Lenfant* research fellow and postdoctoral fellow, NHLBI, NIH, USA
1996-2001 PhD in Physiology, University of Manchester, UK

RESUME and RESEARCH HIGHLIGHTS: I am internationally recognized as an authority in kidney (patho)physiology with my research advancing our understanding of kidney diseases and associated syndromes resulting in significant changes to flagship medical textbooks. My research is at the interface between basic and clinical science, with experimental approaches spanning from omics to translational research. Over 105 patents cite my work, emphasizing my influence in the field of innovation and ability to drive discovery of novel interventions.

2023 – 2026. *Pushing the boundaries of mass-spectrometry based proteomics to single-cell resolution to study kidney cell heterogeneity*. This provides a powerful approach for investigating kidney cellular dynamics in health and disease at the protein level. Only 3-4 groups nationwide have developed similar approaches to single-cell proteomics, creating a unique niche for our platform.
2013 – 2026. *Identifying novel mechanisms controlling the activity of cation-coupled cotransporters in the kidney and their role in hypertension or electrolyte disorders*. In studies spanning >40 articles, I helped to define the molecular basis of why high dietary potassium counteracts the bad effects of salt on blood pressure, improving cardiovascular health and having worldwide health implications.
2012 – 2026. *I pioneered using urinary extracellular vesicles (uEVs) to study kidney (patho)physiology*. Over 25 articles have substantiated their reliability in reflecting changes in the kidney and their application to biomarker discovery. Our work on standardizing approaches to normalize, quantify and characterize uEVs are widely accepted in the kidney community.
2006 – 2013. *Studies on the water channel aquaporin-2 (>40 articles) determined novel molecular mechanisms for how anti-diuretic hormone exerted its effects in the kidney*. These paradigm shifting observations uncovered new processes exploitable by pharmaceuticals for alleviating water retention disorders or nephrogenic diabetes insipidus, including the use of PGE2 receptor agonists or statins.
1999 – 2006. *I elucidated the importance of urea channels for water and electrolyte homeostasis*. I made textbook modifying observations (>15 research articles) clarifying several half-century old debates in the field. The work identified urea channels as viable pharmacological targets for new salt-sparing diuretics or anti-hypertensives (pursued in pharmaceutical research).

MAJOR GRANTS / AWARDS / RECOGNITION (selected):
Major awards: Board Member, American Physiological Society (APS, 10,000 members) (2025-2028); Chair of the APS Renal Section (2023-2025); Carl W. Gottschalk Distinguished Lectureship, APS Renal Section (2022); Novo Nordisk Foundation Distinguished Investigator (2021); APS Epithelial Transport Group Steven Hebert Award Lecture (2019); Danish Ministry for Higher Education and Science Elite Research Prize (2018); Lundbeck Foundation Young Researcher Prize (2015); APS Young Investigator Award for Excellence in Renal Physiology (2011); Anders Jahre Award for Young Scientists (2010); APS Renal Section New Investigator Award (2008); Young Elite Researcher, Independent Research Fund Denmark (2007); NIH Fellows for the Advancement of

Education in Science Research Award (2005)
Funding: Major funding providers (salaries, running costs, infrastructure, network activities): Novo Nordisk Foundation (2008-2028); DFF (2006-2025); Leducq Foundation (2020-2026): EU (2007-2022); Aarhus University Research Foundation (2011-2023); Carlsberg Foundation (2011-2025).

SUPERVISION / LEADERSHIP

- Mentored 38 postdocs, 22 PhD (7 as main supervisor), 22 Masters/research year students, and 14 visiting researchers (approx. 50% are female).
- Chair for Kidney Cardiovascular and Metabolic Diseases research theme (27 groups) at Dept. of Biomedicine, AU and Research Committee member, Dept. Biomedicine (2019–)
- Director, American Physiological Society (APS) (2025-2028). Chair of Renal Group (2023-2025)
- European Coordinator of a Leducq Foundation Transatlantic Network of Excellence (2018-2023)
- Management committee for the national Cell-X platform (2021–)
- Management committee for BIO-MS, a national protein mass spectrometry platform (2020 –)
- Recruitment committee member (tenure-track/tenure) for Dept. Biomedicine, AU (2018 – current)
- Coordinator of MCA International Staff Exchange and Research Training Networks (2013-2016)

CONTRIBUTIONS TO RESEARCH COMMUNITY

Peer Review. Associate editor of AJP: Renal (2020 – current). Editorial Board member of J Am Soc Neph (2015-); AJP:Renal (2008-). Previous editorial positions for 6 other journals.
Grant reviewing. ERC (2018-), Kidney Research UK (2008-), Diabetes UK (2010-), Heart Research UK (2012-), MRC UK (2010-), Fondazione Telethon Italy (2011-), FNRS Belgium (2012-).
Committees. Various American Physiological Society (APS) Committees, including; Chair of the Renal Section (2023 – 2025); Section Advisory Committee (2023 – 2025); Advisory Council (2024 – 2025); Advisory Council Organizing Committee (2024 –); International Physiology Committee (2012-2014); Epithelial Transport Group steering committee (2009-2018); Co-chair/chair of the Renal Section Awards (2012-2016); Perkins Memorial Fellowship Committee (2017-2020).
Chair. Chairman or examiner on 20 PhD thesis and 4 Doctor of Medical Sciences thesis
Infrastructure. Developed the widely used Proteomics Core Facility at Biomedicine, AU

CONTRIBUTIONS TO THE WIDER SOCIETY

Advocacy. As a board member of The American Physiological Society I helped initiate the "Physiology: The Science Life Depends On" campaign (1 mill USD invested, search web) to elevate awareness of physiology's crucial role in science and advocate for sustained research funding. As a Board we make formal position statements, send letters to Congress and make comments to federal agencies to advocate for policies that support ethical research, strengthen the scientific workforce and advance public health. Public engagement. I participate in "The Festival of Research" at AU, that creates a link between ourselves and the general public. I have contributed interviews with national media e.g. Berlingske, in areas of my expertise.

SCIENTIFIC PUBLICATIONS OVERVIEW

- 227 peer reviewed articles (36 first and 72 last authorships as corresponding author). Influential articles published in e.g. Nature Metabolism, Cell, Circulation, PNAS, JASN, JBC, Kid Int, JCI, EMBO, Phy. Reviews, Hypertension, J Clin Onc, J Cell Science, Ann Rev Physiol, Gastroenterology, Endocrine Reviews, JCI Insight.
- 16 chapters in established textbooks (13 are corresponding/senior authorships)
- Citations: >15,750; *h* index = 72 (Google scholar, September 2026).
- All articles: https://www.ncbi.nlm.nih.gov/myncbi/1XoIpVeM3d_k9/bibliography/public/.

Twenty Important Publications (spanning entire career)

Journal Impact Factor = IF

1. van Heugten, M. H., Beckmann, S. B., Salib, M., Curovic, V. R., Beernink, J. M., Faivre, A., Laverman, G. D., Wu, Q., Bjornstad, P., Hall, A. M., Rossing, P., **Fenton, R. A**. and Hoorn, E. J. (2026) Distinct proteomic signatures of urinary extracellular vesicles link to albuminuria and treatment responses in diabetic kidney disease. Kidney Int. doi: 10.1016/j.kint.2026.04.018. **IF=21.8**

2. AlZaim, I., Hassan, M. N., Schroter, M……**Fenton, R. A.**, N., Jessen, N., de Rooij, L., and Kalucka, J. (2026) Defining the vascular niche of human adipose tissue across metabolic states. Nat Metab 8, 722-740. **IF=27.5**

3. Poulsen, S. B., Murali, S. K., Thomas, L., Assmus, A., Rosenbaek, L. L., Nielsen, R., Dimke, H., Rieg, T., and **Fenton, R. A.** (2025) Genetic deletion of the kidney sodium/proton exchanger-3 (NHE3) does not alter calcium and phosphate balance due to compensatory responses. Kidney Int 107, 280-295. **IF=21.8**

4. Assmus, A. M., Odgaard, L. N., Garrelds, I. M., Danser, A. H. J., Matchkov, V., Welling, P. A., and **Fenton, R. A.** (2025) Excess dietary potassium raises blood pressure in male mice by an aldosterone-dependent increase in ENaC. Commun Biol 8, 1581. **IF=6.2**

5. Little, R., Murali, S. K., Poulsen, S. B., Grimm, P. R., Assmus, A., Cheng, L., Ivy, J. R., Hoorn, E. J., Matchkov, V., Welling, P. A., and **Fenton, R. A.** (2023) Dissociation of sodium-chloride cotransporter expression and blood pressure during chronic high dietary potassium supplementation. JCI Insight 8. **IF=8.8**

6. Grimm, P. R., Tatomir, A., Rosenbaek, L. L., Kim, B. Y., Li, D., Delpire, E. J., **Fenton, R. A.**, and Welling, P. A. (2023) Dietary potassium stimulates Ppp1Ca-Ppp1r1a dephosphorylation of kidney NaCl cotransporter and reduces blood pressure. J Clin Invest 133. **IF=14.3**

7. Neumann, C., Rosenbaek, L. L., Flygaard, R. K., Habeck, M., Karlsen, J. L., Wang, Y., Lindorff-Larsen, K., Gad, H. H., Hartmann, R., Lyons, J. A., **Fenton, R. A.**, and Nissen, P. (2022) Cryo-EM structure of the human NKCC1 transporter reveals mechanisms of ion coupling and specificity. EMBO J 41, e110169. **IF=10.6**

8. Wu, Q., Poulsen, S. B., Murali, S. K., Grimm, P. R., Su, X. T., Delpire, E., Welling, P. A., Ellison, D. H., and **Fenton, R. A.** (2021) Large-Scale Proteomic Assessment of Urinary Extracellular Vesicles Highlights Their Reliability in Reflecting Protein Changes in the Kidney. J Am Soc Nephrol 32, 2195-2209. **IF=9.7**

9. Poulsen, S. B., Cheng, L., Penton, D., Kortenoeven, M. L. A., Matchkov, V. V., Loffing, J., Little, R., Murali, S. K., and **Fenton, R. A.** (2021) Activation of the kidney sodium chloride cotransporter by the beta2-adrenergic receptor agonist salbutamol increases blood pressure. Kidney Int 100, 321-335. **IF=21.8**

10. Cheng, L., Poulsen, S. B., Wu, Q., Esteva-Font, C., Olesen, E. T. B., Peng, L., Olde, B., Leeb-

Lundberg, L. M. F., Pisitkun, T., Rieg, T., Dimke, H., and **Fenton, R. A.** (2019) Rapid Aldosterone-Mediated Signaling in the DCT Increases Activity of the Thiazide-Sensitive NaCl Cotransporter. J Am Soc Nephrol 30, 1454-1470. **IF=9.7**

11. Wu, Q., Moeller, H. B., Stevens, D. A., Sanchez-Hodge, R., Childers, G., Kortenoeven, M. L. A., Cheng, L., Rosenbaek, L. L., Rubel, C., Patterson, C., Pisitkun, T., Schisler, J. C., and **Fenton, R. A.** (2018) CHIP Regulates Aquaporin-2 Quality Control and Body Water Homeostasis. J Am Soc Nephrol 29, 936-948. **IF=9.7**

12. Poulsen, S. B., Kristensen, T. B., Brooks, H. L., Kohan, D. E., Rieg, T., and **Fenton, R. A.** (2017) Role of adenylyl cyclase 6 in the development of lithium-induced nephrogenic diabetes insipidus. JCI Insight 2, e91042. **IF=8.8**

13. **Fenton, R. A.**, Poulsen, S. B., de la Mora Chavez, S., Soleimani, M., Dominguez Rieg, J. A., and Rieg, T. (2017) Renal tubular NHE3 is required in the maintenance of water and sodium chloride homeostasis. Kidney Int 92, 397-414. **IF=21.8**

14. Olesen, E. T., Rutzler, M. R., Moeller, H. B., Praetorius, H. A., and **Fenton, R. A.** (2011) Vasopressin-independent targeting of aquaporin-2 by selective E-prostanoid receptor agonists alleviates nephrogenic diabetes insipidus. Proc Natl Acad Sci U S A 108, 12949-12954. **IF=9.5**

15. Pedersen, N. B., Hofmeister, M. V., Rosenbaek, L. L., Nielsen, J., and **Fenton, R. A.** (2010) Vasopressin induces phosphorylation of the thiazide-sensitive sodium chloride cotransporter in the distal convoluted tubule. Kidney Int 78, 160-169. **IF=21.8**

16. Moeller, H. B., Praetorius, J., Rutzler, M. R., and **Fenton, R. A.** (2010) Phosphorylation of aquaporin-2 regulates its endocytosis and protein-protein interactions. Proc Natl Acad Sci U S A 107, 424-429. **IF=9.5**

17. Moeller, H. B., Knepper, M. A., and **Fenton, R. A.** (2009) Serine 269 phosphorylated aquaporin-2 is targeted to the apical membrane of collecting duct principal cells. Kidney Int 75, 295-303. **IF=21.8**

18. Nielsen, J., Hoffert, J. D., Knepper, M. A., Agre, P., Nielsen, S., and **Fenton, R. A.** (2008) Proteomic analysis of lithium-induced nephrogenic diabetes insipidus: mechanisms for aquaporin 2 down-regulation and cellular proliferation. Proc Natl Acad Sci U S A 105, 3634-3639. **IF=9.5**

19. **Fenton, R. A.**, Moeller, H. B., Hoffert, J. D., Yu, M. J., Nielsen, S., and Knepper, M. A. (2008) Acute regulation of aquaporin-2 phosphorylation at Ser-264 by vasopressin. Proc Natl Acad Sci U S A 105, 3134-3139. **IF=9.5**

20. **Fenton, R. A**., Chou, C. L., Stewart, G. S., Smith, C. P., and Knepper, M. A. (2004) Urinary concentrating defect in mice with selective deletion of phloretin-sensitive urea transporters in the renal collecting duct. Proc Natl Acad Sci U S A 101, 7469-7474. **IF=9.5**