The UNIVERSITY CONSORTIUM

Dr. John Cherry

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John A. Cherry holds geological engineering degrees from the University of Saskatchewan and University of California Berkley, and earned a Ph.D. in hydrogeology from the University of Illinois. He joined the faculty at the University of Waterloo in 1971 for field research on the migration and fate of contaminants in groundwater and their remediation. He retired from Waterloo in 2006, where he held the Research Chair in Contaminant Hydrology, but he continues research as a Distinguished Professor Emeritus, and is also an Honorary Professor at the University of Hong Kong.

He co-authored the textbook "Groundwater" with R.A. Freeze (1979) and co-edited and co-authored several chapters in the book "Dense Chlorinated Solvents and Other DNAPLs in Groundwater" (1996). As a follow-up to that textbook, he initiated a project in 2017 involving more than 100 experts from 12 countries on five continents to create an online comprehensive groundwater textbook with supporting learning materials for global availability free of charge.

He has participated in the development of technologies for groundwater monitoring and remediation and co-holds several patents. He has received many awards and honors from scientific and professional organizations around the globe. In 2020, he was awarded the Stockholm Water Prize for discoveries that have revolutionized our understanding of groundwater vulnerability.

Other prestigious awards include the IAH Presidents' Award for "a member who has made outstanding international contributions to groundwater science and to furthering IAH's mission to promote understanding and management of groundwater resources for the benefit of human kind and the environment" (2019), and the Lee Kuan Yew Water Prize (Singapore) for "global contributions to groundwater science and technology" (2016), and is a Foreign Member of the U.S. National Academy of Engineering, Fellow of the Royal Society of Canada and holds an honorary doctorate from the University of Neuchatel. He was the Chair (2012-2014) of the Canadian Expert Panel on Environmental Impacts of Shale Gas Development (fracking).

He is an advisor to the Government of Singapore and is Co-chair of the International Scientific Advisory Committee (ISAC) Chinese Research Academy of Environmental Science (CRAES), which is part of the China Ministry of Environmental Protection.

His current research involves collaborative studies of:
1) the chemical evolution of natural and contaminated groundwater in unfractured and fractured aquifers and aquitards
2) advancement of engineered monitoring systems for groundwater flow and hydrogeochemistry
3) use of portable drills to create small capacity wells for safe drinking water in developing countries

Selected Papers

Quinn, P., Cherry, J. A., Parker, B. L. (2020). Relationship between the critical Reynolds number and aperture for flow through single fractures evidence from laboratory studies. J. Hydrol. 581.

Forde*, O.N., Cahill*, A.G., Mayer, K.U., Mayer, B., Simister, R. L., Finke, N., Crowe, S. A., Cherry, J. A., Parker B. L. (2019). Hydro-geochemical impacts of fugitive methane on a shallow unconfined aquifer. Sci. Total Environ. 690.

Manna*, F., Walton*, K., Cherry, J.A., Parker, B.L. Five-century record of climate and groundwater recharge variability in southern California. Sci Rep 9.

Manna F., Murray S., Abbey D., Martin P., Cherry J.A., Parker. B.L. 2019. Spatial and temporal variability of groundwater recharge in a sandstone aquifer in a semi-arid region. Hydrol. Earth Syst. Sc. 23.

Quinn, P., Klammer, H., Cherry, J., Parker, B. L. 2018. Insights from unsteady flow analysis of underdamped slug tests in fractured rock. Water Resour. Res. 54(8).

Forde, O. N., Mayer, K. U., Cahill, A. G., Mayer, B., Cherry, J. A., Parker, B. L. 2018. Vadose Zone Gas Migration and Surface Effluxes Following a Controlled Natural Gas Release into an Unconfined Shallow Aquifer. Vadose Zone J. 17(1).

Yu, R., Andrachek, R., Lehmicke, L., Pierce, A., Parker, B. L., Cherry, J. A., Freedman, D. 2018. Diffusion-Coupled Degradation of Chlorinated Ethenes in Sandstone: An Intact Core Microcosm Study. Environ. Sci. Tech. 52(24).

Pierce, A., Parker, B.L., Zimmerman, L., Hurley, J., Aravena, R., Chapman, S.W., Cherry, J.A. 2018. DFN-M field characterization of sandstone for a process-based site conceptual model and numerical simulations of TCE transport with degradation. J. Contam. Hydrol. Special Issue, 212.

Maldaner, C., Quinn, P., Cherry, J., Parker, B. 2018. Improving estimates of groundwater velocity in a fractured rock borehole using hydraulic and tracer dilution methods. J. Contam. Hydrol. 214.

Parker, B.L., Bairos, K., Maldaner, C.H., Chapman, S.W., Turner, C.M., Burns, L.S., Plett, J., Carter, R., Cherry, J.A. Metolachlor DNAPL source conditions and plume attenuation in a dolostone water supply aquifer. 2018. Geol. Soc. Lond. Special Publication "Groundwater in Fractured Bedrock Environments: Managing Catchment and Subsurface Resources", 479.

Parker, B.L., Chapman, S.W., Goldstein, K.J., Cherry, J.A. 2018. Multiple lines of field evidence to inform fracture network connectivity at a DNAPL-contaminated shale site. Geol. Soc. Lond. Special Publication, "Groundwater in Fractured Bedrock Environments: Managing Catchment and Subsurface Resources", 479.

Chapman, S.W., Cherry, J, Parker, B.L. 2018. Multiple-scale hydraulic characterization of a surficial clayey aquitard overlying a regional aquifer in Louisiana. J. Hydrol. 558.

Pierce, A.A., Parker, B.L., Ingleton, R., Cherry, J.A. 2018. Novel well completions in small diameter coreholes created using portable rock drills. Ground Water Monit. Remediat. 38(1).

Cahill, A.G., Parker, B.L., Mayer, B., Mayer, K.U., Cherry, J.A. 2017. High resolution spatial and temporal evolution of dissolved gases in groundwater during a controlled natural gas release experiment. Sci. Total Environ. 622-623.

Manna, F., Walton, K., Cherry, J.A., Parker, B.L. 2017. Mechanisms of recharge in a fractured porous rock aquifer in a semi-arid region. J. Hydrol. 555.

Cahill, A.G., Steelman, C., Forde, O., Kuloyo, O., Ruff, S.E., Mayer, B., Mayer, K.U., Strous, M., Ryan, M.C., Cherry, J.A., Parker, B.L. 2017. Mobility and persistence of methane in groundwater in a controlled-release field experiment. Nat. Geosci. 10.

Quinn, P.M., Cherry, J.A., Parker, B.P. 2017. Response to the Comment by Mesut Cimen on "Depth-discrete specific storage in fractured sedimentary rock using steady-state and transient single-hole hydraulic tests", J. Hydrol. 542.

Quinn, P.M., Cherry, J.A., Parker, B.L. 2016. Depth-discrete specific storage in fractured sedimentary rock using steady-state and transient single-hole hydraulic tests. J. Hydrol. 542.

Manna, F. Cherry, J.A., McWhorter, D.B., Parker, B.L. 2016. Groundwater recharge assessment in an upland sandstone aquifer of southern California. J. Hydrol. 541(B).

Klammer, H., Hatfield, K., Newman, M.A., Cho, Jaehyun, Annable, M.D., Parker, B.L., Cherry, J.A., Perminova, I. 2016. A new device for characterizing fracture networks and measuring groundwater and contaminant fluxes in fractured rock aquifers. Water Resour. Res. 52(7).