

Eric R. Henderson

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BACKGROUND

I received my Ph.D. degree (1984) in Molecular Biology under the tutelage of Dr. James A. Lake at UCLA. My research focus was the structure and function of ribosomes. I was a Damon-Runyon post-doctoral fellow with Nobel laureate Dr. Elizabeth Blackburn (1984-1987) at UC Berkeley. My research focus was the structure and function of telomeres. My current field of study is the use of self-assembling DNA nanosystems for diagnostic and therapeutic purposes.

CURRENT POSITIONS

Professor of Genetics, Development and Cell Biology, Iowa State University
Founder and CEO, Creodyne, llc
Managing Partner, Curated Growth, llc

PREVIOUS AND OTHER POSITIONS

Assistant & Associate Professor, Iowa State University (1987-1996)
Co-Founder, BioForce Nanosciences, Inc. (1994-2008)
Co-Founder, Aspera Corp.
Co-Founder, Hello Holdings, Inc.
Co-Founder, Henderprise, llc

PATENTS (9 US, international counterparts not displayed)

US 5,763,768; "Analytical Method Using Modified Scanning Probes"
US 5,935,339; "Decontamination Device and Method Thereof"
US 6,146,899; "Height Referencing Biochemical Cassette"
US 6,573,369; "Method and Apparatus for Solid State Molecular Analysis"
US 6,716,578; "Methods for Solid State Genome Analysis"
US 6,897,015; "Device and Method ... Detection and ... of Pathogens..."
US 6,998,228; "Method and Apparatus for Solid State Molecular Analysis"
US 7,008,769; "Nanoscale Molecular Arrayer"
US 7,060,448; "Evaluating Binding Affinities by Force Stratification and Force Panning"

REVIEWER

Acta Biomaterialia
Applied Physics Letters
Biochemistry
Biophysical Journal
Biochimica et Biophysica Acta
Chromosoma
Electrophoresis
Experimental Cell Research
Genes and Development
Journal of Membrane Biology
Journal of Biological Chemistry
Journal of Molecular Biology
Journal of Molecular Phylogeny and Evolution
Journal of Microscopy
Journal of the Royal Society Interface
Journal of Structural Biology
Nanomedicine

Nucleic Acids Research
New England Journal of Medicine
Plant Molecular Biology
Physical Review
PLOS One
Probe Microscopy
Proceedings of the National Academy of Science
Reviews of Modern Physics
Science
Science Advances
Scanning Microscopy
Surface Science
The Scientific World Journal
National Science Foundation
National Institutes of Health
Israel Science Foundation
American Cancer Society
Lawrence Livermore National Laboratory

PUBLICATIONS

1. Marquis, D.M., Fahnestock, S.R., Henderson, E., Woo, D. Schwinge, S., Clark, M.W. and Lake, J.A. (1981) The L7/L12 stalk, a conserved feature of the prokaryotic ribosome, is attached to the large subunit through its N terminus. *J. Mol. Biol.* 150, 121-132.
2. Lake, J.A., Henderson, E., Clark, M.W. and Matheson, A.T. (1982) Mapping evolution with ribosome structure: intralinear constancy and interlineage variation. *Proc. Natl. Acad. Sci. USA* 79, 5948-5952.
3. Henderson, E., Pierson, B. and Lake, J.A. (1983) *Chloroflexus auranticus* has 30S ribosomal subunits of the eubacterial type. *J. Bact.* 155(2), 900-902.
4. Henderson, E., Oakes, M., Clark, M.W., Lake, J.A., Matheson, A.T. and Zillig, W. (1984) A new ribosome structure. *Science* 225, 510-512. PMID: 6429855.
5. Lake, J.A., Henderson, E., Oakes, M. and Clark, M.W. (1984) Eocytes: A new ribosome structure indicates a kingdom with a close relationship to eukaryotes. *Proc. Natl. Acad. Sci. USA* 81, 3786-3790. PMID:6587394.
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7. Henderson, E. and Lake, J.A. (1985) Ribosomal collapse triggered by a DNA oligonucleotide., in *Proceedings of the 16th FEBS, Vnu Science Press, B.V. Utrecht, Netherlands.*
8. Oakes, M., Henderson, E., Scheinmann, A., Clark, M.W., and Lake, J.A. (1985) Mapping ribosomal RNA, protein, and functional sites in three dimensions. in *Structure, Function and Genetics of Ribosomes.* Springer-verlag Press, Spring Series in Molecular Biology.
9. Oakes, M., Clark, M.W., Henderson, E., Scheinmann, A. and Lake, J.A. (1985) Evidence for a specific phylogenetic relationship between the methanogens *Methanococcus thermolithotrophicus* and *Methanothermus fervidus*, and the sulfur respiring *Thermoproteus tenax*., *System. Applied Microbiol.* 351-356.
10. Lake, J.A., Henderson, E., Clark, M.W., Scheinman, A. and Oakes, M.I. (1986) Evolution mapped with the three dimensional ribosome structure. *Chemica Scripta* 26, 121-126.
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12. Oakes, M., Clark, M.W., Henderson, E. and Lake, J.A. (1986) DNA hybridization electron microscopy: ribosomal RNA nucleotides 1392-1407 are exposed in the cleft of the small subunit. *Proc. Natl Acad. Sci. USA* 83, 275-279.
13. Henderson, E. Hardin. C.W., Wolk, S. Tinoco, I., Jr. and Blackburn, E.H. (1987) Telomeric DNA oligonucleotides form novel intramolecular structures containing guanine.guanine base pairs., *Cell* 51, 899-908. PMID: 3690664.

14. Forney, J., Henderson, E.R. and Blackburn, E.H. (1987) Identification of the telomeric sequence of the acellular slime molds *Didymium iridis* and *Physarum polycephalum*. *Nucleic Acids Res.* 22, 9143-9152.
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21. Ahmed, S. and Henderson, E. (1992) Formation of novel hairpin structures by telomeric C-strand oligonucleotides. *Nucleic Acids Research*, 20 (3) 507-511.
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MEMBERSHIPS AND OUTREACH

PFF (preparing Future Faculty, ISU)

SciOPS (panelist)

AAAS

AARP-RIP

