

Curriculum Vitae

MICHAEL JOHN DALY, Ph.D.

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EDUCATION

Ph.D.	Genetics	University of London, U.K.	1988
B.Sc. (Hons.)	Molecular Biology	University of London, U.K.	1984
A-levels	Bio./Chem./Phys.	King's School, Canterbury, U.K.	1981

EMPLOYMENT RECORD

Associate Professor of Pathology, and Molecular/Cell Biology	2002-Present
Assistant Professor of Pathology, and Molecular/Cell Biology with Prof. Robert Friedman	1999-2002
Committee on the Origins and Evolution of Life, National Academy of Sciences	2003-Present
Planetary Task Group Member , National Academy of Sciences	1999-2001
Adjunct Associate Professor Birla Institute of Science, Pilani, India	1999-Present
Principal Investigator , Dept. of Pathology, USUHS	1996-Present
Research Assistant Professor , Dept. of Pathology, USUHS with Prof. Robert Friedman	1992-1999
NIH Postdoctoral Fellow - Michael Lichten's Group Laboratory of Biochemistry National Cancer Institute, NIH, Bethesda, MD	1988-1992
Ph.D. Student (Genetics) , University of London, U.K. Research Assistant The Genetics Institute, Cambridge, MA	1984-1988 1984
Intramural Research Student - Maxine Singer's Group Laboratory of Biochemistry National Cancer Institute, NIH, Bethesda, MD	1983
Intramural Research Student - Elliot Charney's Group NIDDK, NIH, Bethesda, MD	1982
AWARDS: University of London Drapers Foundation Prize United Kingdom Overseas Research Scholarship National Cancer Institute, Recognition Award Millennium Cover Story, US News and World Report Henry Wu Award, USUHS	1985-1987 1984-1987 1991 2000 2003

SELECTED PUBLICATIONS: Submitted and in press (1994-2003)

1. J. K. Fredrickson, J. M. Zachara, D. L. Balkwill, D. Kennedy, S. W. Li, H. M. Kostandarithes, **MICHAEL J. DALY**, M. F. Romine, and F. J. Brockman (2004) Geomicrobiology of High Level Nuclear Waste Contaminated Vadose Sediments at the Hanford Site, Washington. *Appl. Environ. Microbiol.*, (accepted).
2. A. Vasilenko, E. K. Gaidamakova, V. Y. Matrosova, D. Ghosal, M. Zhai, A. Venkateswaran, H. Brim, M. V. Omelchenko, H. M. Kostandarithes, K. S. Makarova, J. K. Fredrickson, and **MICHAEL J. DALY** (2004) High Intracellular Manganese and Low Iron Levels of *Deinococcus radiodurans* Facilitate Recovery from Ionizing Radiation (in preparation).
3. M. Sandigursky, S. Sandigursky, P. Sonati, **MICHAEL J. DALY**, and W. A. Franklin (2004) Multiple uracil-DNA glycosylase activities in *Deinococcus radiodurans*. *DNA Repair*, **3**(2): 163-169.
4. H. Brim, A. Venkateswaran, H. M. Kostandarithes, J. K. Fredrickson, and **MICHAEL J. DALY** (2003) Genetic Development of *Deinococcus geothermalis* for bioremediation of high temperature radioactive waste environments. *Appl. Environ. Microbiol.*, **69**, 4575-4582.
5. J. R. Battista, M. M. Cox, **Michael J. Daly**, I. Narumi, M. Radman, and S. Sommer (2003). The structure of *Deinococcus radiodurans*. *Science*, **302**, 567-568.
6. H. Brim, J. P. Osborne, A. Venkateswaran, M. Zhai, J. K. Fredrickson, L. P. Wackett, and **MICHAEL J. DALY** (2003). Facilitated chromate reduction by *Deinococcus radiodurans* engineered for toluene mineralization. *Appl. Environ. Microbiol.*, Submitted.
7. Y. Liu, J. Zhou, A. Beliaev, J. Stair, L. Wu, D.K. Thompson, D. Xu, A. Venkateswaran, M. Omelehenko, M. Zhai, E. K. Gaidamakova, K. S. Makarova, E. Koonin, and **MICHAEL J. DALY** (2003) Transcriptome dynamics of *Deinococcus radiodurans* recovering from ionizing radiation. *Proc. Natl. Acad. Sci. USA*, **100**, 4191-4196.
8. M. S. Lipton, L. Pasa-Tolic, G. A. Anderson, D. J. Anderson, D. Auberry, J. R. Battista, **MICHAEL J. DALY**, J. K. Fredrickson, K. K. Hixson, H. Kostandarithes, T. Conrads, C. Masselon, M. Markille, R. J. Moore, M. F. Romine, Y. Shen, N. Tolic, H. R. Udseth, T. D. Veenstra, A. Venkateswaran, K. K Wong, R. Zhao, and R. D. Smith (2002) Global analysis of the *Deinococcus radiodurans* R1 proteome using accurate mass tags. *Proc. Natl. Acad. Sci. USA*, **99**, 11049-11054.
9. J-I Kim, A. K. Sharma, S. N. Abbot, E. A Wood, D. Dwyer, A. Jambura, K. W. Minton, R B. Inman, **MICHAEL J. DALY**, and M. M. Cox (2002) RecA protein from the extremely radioresistant bacterium *Deinococcus radiodurans*: Expression, purification, and characterization. *J. Bacteriol.* **184**, 1649-60.
10. **MICHAEL J. DALY** (2002) The Quarantine and certification of martian samples: Appendix A: *Deinococcus radiodurans* as an analogue to extremophile organisms that may have survived on Mars. *National Academy Press*, Commission on Physical Sciences, Mathematics, and Applications, pp. 67-69 (<http://www.nap.edu/books/0309075718/html/151.html>).
11. K. S. Makarova, L. Aravind, Y. I. Wolf, R. L.Tatusov, K. Minton, E. V. Koonin, and **MICHAEL J. DALY** (2001) The genome of the extremely radiation resistant bacterium *Deinococcus radiodurans* viewed from the perspective of comparative genomics. *Microbiology and Molecular Biology Reviews* **65**, 44-79.

12. **MICHAEL J. DALY** (2001) The emerging impact of genomics on the development of biological weapons: Threats and benefits posed by engineered extremophiles. *Clinics in Laboratory Medicine* **21**, 619-629.
13. J. Nolling, G. Breton, M. V. Omelchenko, K. S. Makarova, Q. Zeng, R. Gibson, H. M. Lee, J. Dubois., D. Qiu, J. Hitti, Y. I. Wolf, R. L. Tatusov, F. Sabathe, L. Doucette-Stamm, R. L. Tatusov, P. Soucaille, **MICHAEL J. DALY**, G. N. Bennett, E. V. Koonin, and D. R. Smith (2001) Genome sequence and comparative analysis of the solvent-producing bacterium *Clostridium acetobutylicum*. *J. Bacteriol.* **183**, 4823-4838.
14. A. F. Cheng, B. C. Clark, **MICHAEL J. DALY**, E. I. Friedman, B. M. Jakosky, R. Y Morita, A.-L. Reysenbach, D. A. Stahl and L. W. Esposito (2001) Planetary Protection for Europa, Space Studies Board, National Research Council, National Academy of Sciences, Washington, D.C. (<http://www.nationalacademies.org/ssb/europamenu.htm>).
15. **MICHAEL J. DALY** (2000) Engineering radiation-resistant bacteria for environmental biotechnology. *Current Opinion in Biotechnology* **11**, 280-285.
16. H. Brim, S. McFarlan, L. Wackett, K. W. Minton, M. Zhai, J. Fredrickson, and **MICHAEL J. DALY** (2000) Engineering *Deinococcus radiodurans* for metal remediation in radioactive mixed waste environments. *Nature Biotechnology* **18**, 85-90.
17. J. K. Fredrickson, H. M. Kostandarithes, A. W. Li, A. E. Pyle, and **MICHAEL J. DALY** (2000) Reduction of Fe(III), Cr(VI), U(VI), and Tc(VII) by *Deinococcus radiodurans*. *Appl. Environ. Microbiol.* **66**, 2006-2011.
18. A. Venkateswaran, S. C. McFarlan, D. Ghosal, K. W. Minton, A. Vasilenko, K. Makarova, L. P. Wackett, and **MICHAEL J. DALY** (2000) Physiologic determinants of radiation resistance in *Deinococcus radiodurans*. *Appl. Environ. Microbiol.* **66**, 2620-2626.
19. K. S. Makarova, L. Aravind, **MICHAEL J. DALY**, and E. V. Koonin (2000) Specific expansion of protein families in the radioresistant bacterium *Deinococcus radiodurans*. *Genetica* **108**, 25-34.
20. O. White, J. A. Eisen, J. F. Heidelberg, E. K. Hickey, J.D. Peterson, R. J. Dodson, C. Zalewski, K. S. Makarova, L. Aravind, **MICHAEL J. DALY**, K. W. Minton, R. D. Fleischmann, K. A. Ketchum, K. E. Nelson, S. Salzberg, H. O. Smith, J. C. Venter, C. M. Fraser *et al.*, (1999) Sequencing and functional analysis of the *Deinococcus radiodurans* genome. *Science* **286**, 1571-1577.
21. J. Lin, R. Qi, C. Aston, J. Jing, T. S. Anantharaman, B. Mishra, O. White, K. W. Minton, **MICHAEL J. DALY**, J. C. Venter, and D. C. Schwarzst (1999) Whole genome shotgun optical mapping of *Deinococcus radiodurans* using genomic DNA molecules. *Science* **285**, 1558-1561.
22. R. C. Richmond, R Sridhar, and **MICHAEL J. DALY** (1999) Physicochemical survival pattern for the radiophile *Deinococcus radiodurans*: A polyextremophile model for life on Mars. *SPIE*, **3755**, 210-222.
23. K. S. Makarova, Y. I. Wolf, K. W. Minton, O. White, and **MICHAEL J. DALY** (1999) Short repeats and insertional elements in *Deinococcus radiodurans* and comparison to other bacterial species. *Res. Microbiol.* **150**, 711-724.
24. C. Lange, L. P. Wackett, K. W. Minton, and **MICHAEL J. DALY** (1998) Engineering a recombinant *Deinococcus radiodurans* for organopollutant degradation in radioactive mixed waste environments. *Nature Biotechnology* **16**, 929-933.

25. **MICHAEL J. DALY**, and K. W. Minton (1997) Recombination between a resident plasmid and the chromosome following irradiation of the radioresistant bacterium *Deinococcus radiodurans*. *Gene* **187**, 225-229.
26. J. D. Carroll, **MICHAEL J. DALY** and K. W. Minton (1996) Expression of *recA* in *Deinococcus radiodurans*. *J. Bacteriol.* **178**, 130-135.
27. **MICHAEL J. DALY** and K. W. Minton (1996) An alternative pathway for recombination of chromosomal fragments precedes *recA*-dependent recombination in the radioresistant bacterium *Deinococcus radiodurans*. *J. Bacteriol.* **178**, 4461-4471.
28. **MICHAEL J. DALY** and K. W. Minton (1995) Resistance to radiation. *Science* **270**, 1318.
29. K. W. Minton and **MICHAEL J. DALY** (1995) A model for repair of radiation induced DNA DSB's in the extreme radiophile *Deinococcus radiodurans*. *Bioessays* **17**, 457-464.
30. **MICHAEL J. DALY** and K. W. Minton (1995) Interchromosomal recombination in the extremely radioresistant bacterium *Deinococcus radiodurans*. *J. Bacteriol.* **177**, 5495-5505.
31. **MICHAEL J. DALY**, L. Ouyang, P. Fuchs and K. W. Minton (1994) *In vivo* damage and *recA*-dependent repair of plasmid and chromosomal DNA in the radioresistant bacterium *Deinococcus radiodurans*. *J. Bacteriol.* **176**, 3508-3517.
32. **MICHAEL J. DALY**, L. Ouyang and K. W. Minton (1994) Interplasmidic recombination following irradiation of the radioresistant bacterium *Deinococcus radiodurans*. *J. Bacteriol.* **176**, 7506-7515.