BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
A.C. Matin	Professor
eRA COMMONS USER NAME (credential, e.g., agency login) MATIN.A.C.	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YY	FIELD OF STUDY
University of Karachi, Karachi, Pakistan	B.Sc.	1960	Microbiology & Vet. Medicine
University of Karachi, Karachi, Pakistan	M.Sc.	1962	Microbiology
University of California, Los Angeles, CA	Ph.D.	1969	Microbiology

B. Positions and Honors

1962 – 1964: Lecturer in Microbiology, St. Joseph's College for Women, Karachi
1964 – 1971: Teaching or Research Assistant; Postgraduate Bacteriologist; Postdoctoral Research Associate, Department of Bacteriology, University of California, Los Angeles
1971 – 1975: Senior Lecturer, Department of Microbiology, State University of Groningen, Haren (Gr.), The Netherlands
1975 - Present: Assistant, Associate, Full Professor (Full since about 1992), Department of Microbiology & Immunology, Stanford University School of Medicine, Stanford, CA
1989 - 1998: Participating Faculty Member, Western Region Hazardous Substance Research Center, Stanford University
1990 – Present: Faculty Member, Program in Genetic and Molecular Medicine, Stanford University
2000 – Present: Faculty member, BioX Program, Stanford University
2005 – Present: Faculty member, Cardiovascular Institute, Stanford University
2005 – Present: Faculty member, Cancer Institute, Stanford University
2006 – Present: Faculty member, Woods Environmental Institute, Stanford University
2005 – Present: Faculty member, Institute for Immunity, Transplantation and Infection, Stanford University

1964-1971: Fulbright Scholar
1980-1982: Chair, Stanford Recombinant DNA Panel
1987 Environmental Protection Agency star Award
1990-1991: Board Member, Northern Branch of the Society for Industrial Microbiology
1991 Environmental Protection Agency star Award
1991-1993: American Society for Microbiology Foundation for Microbiology Lecturer
1992-1993: Review Committee of the Accreditation Board for Engineering and Technology (ABET)
1995: Elected Fellow, American Academy of Microbiology
June 1996, June 1997, May 2002: Study sections, Department of Energy
January 2001, July 2004: Study sections, NASA Biotechnology
July 2001, July 2003, November 2005: Study sections, NIH Special Emphasis Panel

2008- Study sections, Drug discovery and molecular pharmacology
1980-2005: Editorial Board, Annual Review of Microbiology
1988-1990: Editorial Board, Journal of Bacteriology
1998-present: Editorial Board, Journal of Microbiology
2008-present Editorial Board, Cancer Management and Research
2010-present Editorial Board, Journal of Molecular Imaging & Dynamics
2000-2002: Member, Stanford Biosafety Panel
2003-2006: Member, Stanford Human Subjects Panel
2004- Departmental Senator
2006- Member, Medical School Senate Steering Committee
2010 - Chair, Medical School Senate Task Force for Postdoctoral Affairs

C. Selected relevant Peer-reviewed Publications (the recommended 15 selected from 84 peer reviewed publications; **those directly related to cancer have bold font**)

Lomovskaya, O., F. Kawai, and **A. Matin**. 1996. Differential regulation of *MCB* and *EMR* operons: role of *MCB* in multidrug resistance. Antimicrobial Agents & Chemotherapy 40:1050-1052. PMCID: PMC163261

Park, C-H., M. Keyhan, B. Wielinga, S. Fendorf, and **A. Matin**. 2000. Purification to homogeneity and charcterization of a novel *Pseudomonas putida* chromate reductase. Applied & Environmental Microbiology 66 (5): 1788-1795. PMCID: PMC101413

Pandza. S., Baetens, M, Park, C-H., Au, T., Keyhan, M, and **Matin, A.** 2000. The putative G protein FLHF has a role in polar flagellar placement and general stress response induction in *Pseudomonas putida*. Mol. Microbiol. 35:414-423

Xiong, A. A. Gottman, C. Park, M. Baetons, S. Pandza, and **A. Matin**. 2000. The EmrR protein represses the *Escherichia coli emrRAB* multidrug resistance operon by directly binding to its promoter region. Antimicrobial Agents and Chemotherapy 44: 2905-2907. PMCID: PMC90178

Stone, G., P. Wood, L. Dixon, M. Keyhan, and **A. Matin**. 2002. Tetracycline rapidly reaches all the constituent cells of uropathogenic *Escherichia coli* biofilms. Antimicrobial Agents and Chemotherapy 46: 2458-2461 PMCID: PMC127323

Ackerley, D.F., C.F. Gonzalez, C.H. Park, R. Blake II, M. Keyhan, and A. Matin. 2004. Chromate reducing properties of soluble flavoproteins from *Pseudomonas putida* and *Escherichia coli*. Applied & Environmental Microbiology 70: 873-882. PMCID: PMC348923

Ackerley, D.F., C.F. Gonzalez, C.H. Park, R. Blake II, M. Keyhan, and A. Matin. 2004. Mechanism of chromate reduction by the *Escherichia coli* protein, NfsA, and the role of different chromate reductases in minimizing oxidative stress during chromate reduction. Environmental Microbiology, 6 (8): 851-860.

Gonzalez, C.F., D.F. Ackerley, S.V. Lynch, and A. Matin. 2005. ChrR, a soluble quinone reductase of *Pseudomonas putida* that defends against H_2O_2. The Journal of Biological Chemistry. 280(24): 22590-22595.

Yoram Barak, Stephen H. Thorne, David F. Ackerley, Susan V. Lynch, Christopher H. Contag, and A. Matin. 2006. New enzyme for reductive cancer chemotherapy (YieF) and its improvement by directed evolution. Molecular Cancer Therapeutics 5(1): 97-103.

Barak, Y., D. F. Ackerley, C. J. Dodge, B. Lal, A. Cheng, A. J. Francis, and A. Matin. 2006. Analysis of novel soluble Cr(VI) and U(VI) reductases and generation of improved enzymes using directed evolution. Applied and Environmental Microbiology 72(11): 7074-7082. PMCID: PMC1636143

S.V. Lynch, L. Dixon, M.R. Benoit, E.L. Brodie, M. Keyhan, P. Hu, D.F. Ackerley, G.L. Andersen, and **A. Matin**. 2007. Role of the *rapA* Gene in Controlling Antibiotic Resistance of *Escherichia coli* Biofilms. Antimicrobial Agents and Chemotherapy, 51(10): 3650-3658. PMCID: PMC2043260

Barak, Y., Y. Nov., D. Ackerley, and A. Matin. 2008. Enzyme improvement in the absence of structural knowledge - a novel approach. ISME Journal 2:171-179.

Benoit, M.R., Dirk Mayer, Yoram Barak, Ian Y Chen, Wei Hu, Zhen Cheng, Shan X Wang, Daniel M Spielman, Sanjiv S Gambhir, and A. Matin. 2009. Visualizing implanted tumors in mice with MRI using magnetotactic bacteria. Clinical Cancer Research 15 (16): 5170-5177.

Thorne S.H., Barak Y., Liang W., Rao J., Contag C.H., and A. Matin. 2009. CNOB/ChrR6, a new prodrug enzyme chemotherapy. Molecular Cancer Therapeutics 8(2): 333-341. PMCID: PMC2670992

Barak, Y., F. Schreiber, S.H. Thorne, C.H. Contag, D. deBeer, and A Matin. 2010. Role of nitric oxide in Salmonella typhimurium-mediated cancer cell killing. BMC Cancer 10: 146-152

Benoit, MR, Conant, C, Ionescu-Zanetti, C, Schwartz, M, and Matin, A. New device for high throughput viability screening of flow-bioflims. 2010. Applied and Environmental Microbiology 76 (13): 4136-4142.

Patents

Reducing chromium and/or uranium involves contacting them with a Escherichia coli nitroreductase polypeptide having amino acid alteration relative to wild-type enzyme, and produces enhanced enzyme kinetics for reduction of toxic metals Patent Number(s): **US2007254355-A1**

Cultivating magnetotactic bacterium, useful e.g. for enhancing contrast of magnetic resonance image, comprises obtaining isolated strain of magnetotactic bacteria, and cultivating the bacteria in growth medium comprising iron salt

Patent Number(s): **US2010135912-A1**

Nitroreductase enzymes Patent Number(s): **US 07687474**Reducing chromium and/or uranium involves contacting them with a Escherichia coli nitroreductase polypeptide having amino acid alteration relative to wild-type enzyme, and produces enhanced enzyme kinetics for reduction of toxic metals Patent Number(s): **US2007254355-A1**

Cultivating magnetotactic bacterium, useful e.g. for enhancing contrast of magnetic resonance image, comprises obtaining isolated strain of magnetotactic bacteria, and cultivating the bacteria in growth medium comprising iron salt

Patent Number(s): **US2010135912-A1**

Nitroreductase enzymes Patent Number(s): **US 07687474**