

## MARIA DOBOZI KING

Dept. Biological and Agricultural Engineering, Texas A&M University, MS 2117,  
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### A. Professional Preparation

#### Degrees held

Budapest University of Technology and Economics, Hungary      Biological and Chemical Engineering  
B.S., 1979  
Budapest University of Technology and Economics, Hungary      Biochemistry and Food Technology  
M.S., 1985  
Academy of Sciences, Berlin, Germany                              Biotechnology / Chemistry  
Ph.D., 1986

#### Postdoctoral research

Rutgers University (New Brunswick, NJ), Recombinant fungal systems,                              1989-1990  
Int. Centre for Genetic Engineering and Biotechnology (Trieste, Italy),                              1990-1991  
Cornell University (Ithaca, NY), Regulation of ACC synthase gene,                              1992-1993

### B. Appointments

Assistant Professor, Dept. Biological and Agricultural Eng, TAMU, September 2017-present.  
Research Associate Professor, Aerosol Technology Laboratory, Dept. Mech. Eng, TAMU, 2014 – 2017.  
Research Associate Engineer, Aerosol Technology Laboratory, Dept. Mech. Eng, TAMU, 2005 – 2014.  
Senior Research Scientist, Dept. Biochemistry and Biophysics, TAMU, TX, 2002 – 2005.  
Senior Research Associate, Dept. Agronomy and Range Science, UC Davis, CA, 2000 – 2002.  
Research Associate, Biotechnology, Seminis Vegetable Seed Research Center, CA, 1996 – 2000.  
Head of Dept. Biochemistry, Central Food Research Institute (CFRI), Budapest, 1993 – 1996.  
Senior Scientist, Head of Immunology Laboratory, Dept. Biochemistry, CFRI, 1986 – 1993.  
Research Scientist, Dept. Enzymology, Central Food Research Institute, Budapest, 1979 – 1986.

### C. Products (61 peer reviewed journal papers, 3 book chapters, 2 patents)

#### 1. Development of novel biosensing and bacterial diagnostic technologies

- a. Li, R., Goswami, U., King, M.D. and Rentzepis, P.M. (2018). In-situ detection of live/dead bacteria: A synchronous fluorescence, PCA study. PNAS, *in press; January 2018*
- b. Kish, L.B., Chang, H-C., King, M.D., Kwan, Ch., et al. (2011). Fluctuation-Enhanced Sensing for Biological Agent Detection and Identification. IEEE Transactions on Nanotechnology, 10(6): 1238-1242.
- c. Chang, H-C., Kish, L.B., King, M.D. and Kwan, Ch. (2009). Fluctuation-enhanced sensing of bacterium odors. Sensors and Actuators B (Chemical), 142, 429–434.
- d. Kish, L.B., Schmera, G., King, M.D., Cheng, M., Young, R. and Granqvist, C.G. (2008). Fluctuation-Enhanced Chemical/Biological Sensing and Prompt Identification of Bacteria by Sensing of Phage Triggered Ion Cascade (SEPTIC), Internat. J. High Speed Electronics and Systems. 18: 11-18.
- e. Dobozi-King, M., Seo, S., Kim, J.U., Young, R., Cheng, M. and Kish, L.B. (2005). Rapid nanoscale detection of bacteria: SENSing of Phage-Triggered Ion Cascade (SEPTIC). J. Biol. Chem. Phys. 5: 3-7.

#### 2. Development of the wetted wall cyclone collection technology

- a. King, M.D. and A.R. McFarland. (2012). Bioaerosol Sampling with a Wetted Wall Cyclone: Cell Culturability and DNA Integrity of *Escherichia coli* Bacteria. Aerosol Science and Technology, 46: 82–93.
- b. King, M.D. and A.R. McFarland. (2012). Use of an Andersen Bioaerosol Sampler to Simultaneously Determine Culturable Particle and Culturable Organism Size Distributions. Aerosol Science and Technology, 46: 852–861.

- c. McFarland, A.R., Haglund, J.S., King, M.D., Hu, S., Phull, M.S., Moncla, B.W. and Seo, Y. (2010). Wetted Wall Cyclones for Bioaerosol Sampling. *Aerosol Science and Technology*, 44(4), 241-252.
- d. King, M.D., Thien, B.F., Tiirikainen, J.S. and McFarland, A.R. (2009). Collection characteristics of a batch-type wetted wall bioaerosol sampling cyclone. *Aerobiologia*, 25(4), 239-247.

### **3. Environmental bioaerosol – nanoaerosol collection, tracking and analysis**

- a. Estrada-Perez, C.E., Kinney, K.A., Maestre, J.P., Hassan, Y.A. and King, M.D. (2018). Droplet Distribution and Airborne Bacteria in an Experimental Shower Unit. *Water Research*, 130: 47-57.
- b. Hoisington, A., Maestre, J.P., King, M.D., Siegel, J.A. and Kinney, K.A. (2014). Characterizing the Indoor Microbiome with Pyrosequencing: Impact of Sampler Selection. *Building & Environment*, 80: 1-9.
- c. Meng, F., King, M.D., Hassan, Y.A., and Ugaz, V.M. (2014). Localized fluorescent complexation enables rapid monitoring of airborne nanoparticles. *Environmental Science: Nano*, 1: 358-366.
- d. Kesavan, J., Schepers, D.R., Bottiger, J.R. King, M.D. and McFarland, A.R. (2013). Aerosolization of Bacterial Spores with Pressurized Medical Dose Inhalers. *Aerosol Science and Technology*, 47(10): 1108-1117.
- e. Kassab., A., Ugaz, V.M., King, M.D. and Hassan, Y.A. (2012). High Resolution Study of Micro- meter Particle Detachment on Different Surfaces. *Aerosol Science and Technology*, 47(4): 351-360.

### **D. Synergistic Activities**

#### Education:

Teaching: Three graduate courses in Molecular Biotechnology at Texas A & M University.

Committee membership: 36 graduate and undergraduate students; Co-chair or member on 85 graduate committees, including 6 Ph.D. students. Main professor for MS student graduated in May 2017.

#### Review activities:

Reviewer for 5 journals including *Aerosol Science and Technology (AS&T)*, *Journal of Applied Microbiology* and *Journal of Aerosol Science*.

2017 AS&T Outstanding Reviewer Award.

Reviewer for funding agencies including the National Science Foundation, USDA and DTRA.

Guest Editor: "*Environmental Nanotechnology*" in *Journal of Nanomaterials and Biosensors*.

#### Services:

Serving on several professional committees at different levels and organizations such as the AAAR conference committee and the European Biochemists' Society. Chaired/co-chaired several sessions in national and international conferences. Principal Investigator of the Aerosol Technology Laboratory and Director of Bio-Chem Air Quality & Mold Analysis Laboratory, helping the community with air quality testing.

#### Selected Other Experience and Professional Memberships:

1989 Member, American Society of Microbiology

2006 Member, American Association of Aerosol Research (AAAR)

2017 Member, American Association for the Advancement of Science (AAAS)

#### Honors:

2005 Michele Costato Award, Best Conference Presentation, UpON Conference, Italy

2005 Science and Technology: Screening for screams; *Bacteriology*. The Economist. London, 2005. 375(8422):81.

2012 Guest Editor, *Biosensors*

2014 "Professor of the Year 2013-2014" Texas A&M University Award

2015 Appreciation of Dedicated Service to the Professional Program in Biotechnology, Texas A&M

2016 Guest Editor, Special Issue "*Environmental Nanotechnology*" in *Journal of Nanomaterials*