



CITY OF NEWBURYPORT
OFFICE OF THE MAYOR
SEAN R. REARDON, MAYOR

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To: President and Members of the City Council
From: Sean R. Reardon, Mayor
Date: January 8, 2024
Subject: Appointment

I hereby appoint, subject to your approval, the following named individual as a member of the Water/Sewer Commission. This term will expire February 15, 2026.

Mark Spencer, PhD
129 Merrimac Street, Unit 5
Newburyport, MA 01950

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Curriculum Vitae for Mark Spencer

Mark Spencer, PhD
100 School Street
Andover, MA 01810
978-309-0703
mspencer@wateranalytics.net

Professional Experience

Water Analytics, Andover MA 2010 to Present

President and owner

- Established Water Analytics to hold assets of AquaMetrix
- Tripled revenue in 10 years.
- Revamped entire sensor and controller product portfolio.
- Authored textbook, *Water Quality Instrumentation, Principles and Practice*, (<http://www.wef.org/publications/publications/books/waterquality/>)
- Chair of Water Environment Federation Innovation Award Committee

Agiltron, Woburn, MA 2008 to 2009

Director of Technology

- Oversee over 20 SBIR (Small Business Innovation Research Program) projects from proposal writing to management to commercialization.
- Successfully assembled interdisciplinary team involving university and commercial partner for NIST \$8.5 million proposal.
- Wrote and won SBIR proposal with Army for standoff detection of chemical and biological explosives using infrared emission.
- Achieved over 50% winning percentage of several SBIR Phase I and Phase II proposals.

(Midlife Crisis) Carriage House Portraits, Andover, MA 1995 to 2008

Owner, photographer

- Started high-end studio to produce photographic portraits that would be displayed on a large scale and rival oil paintings in their level of artistry.
- Earned a reputation as the one of the country's leading exponent of classically oriented portraiture.
- Developed a unique hybrid film-digital workflow that provides an unmatched combination of resolution, color fidelity and archival longevity.

NASA Ames Research Center, Moffett Field, CA

1987 to 1995

Research scientist

- Measured the infrared absorption spectra of gases of atmospheric interest (mainly ozone and nitric oxide) to be used in conjunction with the HITRAN database to measure concentrations of atmospheric species.
- Created software model for extracting molecular parameters from high-resolution spectra. Several NASA groups adapted this software (*LeFit*) for analyzing spectra of molecules of atmospheric interest.
- Measured pressure-broadened line shapes of ozone and nitric oxide used in HITRANS database.
- Collaborated with research group of Professor Jeffrey Steinfeld of MIT and Robert Gamache of University of Massachusetts at Lowell to understand the relaxation pathways that underlie the broadened spectra of atmospheric gases as measured in the laboratory.

Physical Sciences, Andover, MA

Principal Scientist 1986 to 1987

- Spectroscopic analysis of lanthanum oxide electronic spectra needed for identification of re-entry vehicles.
- Development of three-wavelength temperature sensor that offered high temperature measurement capability.
- Initial development of technique for desorption of ice from cryogenic mirrors for use in space based imaging systems.

Education

- Massachusetts Institute of Technology, Mid-Career Acceleration Program, Experimental Atmospheric Chemistry 2008 to 2009
- NASA Ames Research Center, NRC Fellowship 1987 - 1989
- SRI International, Post-doctoral fellow 1984-1986
- Massachusetts Institute of Technology, PhD in Molecular Spectroscopy 1983
- University of Pennsylvania, Bachelor of Arts in Physical Chemistry 1978

Other Awards and Recognitions

- Board member of Merrimack Valley Habitat for Humanity, Memorial Hall Library, Andover Cultural Council, Mistral Music
- Rotarian of the Year 1996 and 2005
- Heritage Award for Community Service Award 2009
- Chabad of Merrimack Valley Annual Breakfast Honoree of the Year 2017