

BCA, INC.

BIODETERIORATION CONTROL ASSOCIATES
MICROBIAL CONTAMINATION CONTROL SERVICES

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Frederick J. Passman, PhD.

QUALIFICATIONS:

- Strong technical background combined with exceptional leadership and management experience.
- More than 45 years field and laboratory research and consulting expertise in bioremediation and controlling the adverse effects of microbial growth in process fluids and industrial systems.
- Internationally recognized expert in petroleum and metalworking fluid microbiology.
- Management and leadership skills have been honed while serving as Commanding Officer of six successive Naval Reserve Units, Laboratory Manager and Vice President of Operations for two commercial firms, and Business Manager at ANGUS Chemical.
- STLE Certified Metalworking Fluids Specialist.

EDUCATION:

Ph.D. - University of New Hampshire - Marine Microbiology
A.B. - Indiana University, Bloomington - Microbiology

CERTIFICATIONS AND RECOGNITION:

ASTM, Award of Excellence, Award of Merit (Fellow)
Fellow, STLE
ASTM, The George V. Dyroff Award of Committee D02 Honorary Membership
ASTM, Eagle Award
STLE, Certified Metalworking Fluid Management Specialist Fellow, STLE
STLE, Wilber Deutsch Memorial Award for the best article on a practical subject (1996 and 2011 Awardee)
STLE, P. M. Ku Award for meritorious contributions and service
STLE, Raymond L. Thibault Excellence in Education Award

EMPLOYMENT:

Biodeterioration Control Associates, Inc. 5/92 - present
PRESIDENT - Marketing, expert witness, and technical consulting services:
bioremediation; microbial contamination control in industrial process fluids and fluid

Page 1 of 4

handling systems, including fuel distribution and retail, metalworking fluids and cooling water; rapid detection of microbial contamination in fluids and fluid system surfaces.

Associate Editor for International Biodegradation & Biodeterioration (2012-present) and for Lubrication Engineering (1998-2005). Chair: ASTM D.02.14 Working Group on Microbial Contamination in Fuels and Fuel Systems (1996-present). Chair: ASTM E34 Occupational Health and Safety (2018-present). Chair: ASTM E34.50 Health and Safety of Metalworking Fluids Subcommittee (2012-present). Chair and principal instructor, STLE Metalworking Fluid Management Certificate Training Course (2004-present). Vice-Chair: ASTM D.02.14 Fuel Stability and Cleanliness Subcommittee (2002-present), Vice President: International Biodeterioration and Biodegradation Society (2019 to present), Chair: STLE Executive Committee on the Harmonization of Certification and Education Programs (2011-12), STLE Metalworking Fluid Certification Steering Committee (2006-07), Metalworking Fluid Education & Training Subcommittee (2004-2006), Education Committee (1999-2000), Education Course Chairs Committee (1997-1999), various STLE education courses (1997-present). Representative Clients include: Afton Chemical Corporation, Air Products Polymers, L. P., American Chemical Products, Bayer Corporation (now Lanxess), BASF, Burnet, Duckworth and Palmer; Chevron Marketing, Combe, Inc., Consolidated Freightways, Inc., Dow Chemical, ExxonMobil, FQS Group, Fuel Remediation Services, Inc., Ideas, Inc.; Instrumentation Laboratory, John W. Clark Oil Co., Lonza, Kline and Co., Magellan Midstream Partners, LP, Marathon Ashland Petroleum, LLC; Marathon Petroleum, LLC, Martin, Bacon and Martin; Milacron, Inc., National Biodiesel Board, NEW York City Transit Authority, Northwestern University, Rohm & Haas Company, Schülke & Mayr, GmbH, Southwest Research Institute, Trafigura Fuels Australia Pty Ltd, Troy Chemical and Union Carbide, United States Air Force, United States Navy.

ANGUS Chemical Company, Northbrook, Illinois 7/86 - 5/92 BUSINESS MANAGER, BIOCIDES - Responsible for industrial application market development and technical support.

Stewarded 1986 - 1991 biocide sales growth from \$4MM to \$12MM. Average ten technical papers and Society seminar presentations per year. Program Chairman, Eighth International Biodegradation and Biodeterioration Symposium, 1990. Member of Total Quality Management implementation team.

Charter BioLabs, Houston, Texas 11/84 - 7/86

VICE PRESIDENT, SECRETARY; OPERATIONS MANAGER - Developed laboratory and consulting services for clients in metalworking, waste stabilization and oil production industries.

Representative consulting clients included ANGUS Chemical, Continental Can Corporations, E & A Environmental Consultants, Reynolds Metals, Stroh's, and Water Science.

Frederick J. Passman, Consulting Microbiologist, Houston, Texas
5/82 - 11/84.

INDEPENDENT CONSULTANT - Provided consulting expertise on microbial problems in metalworking, petroleum production and municipal sewage sludge composting. Performed extensive application research and development on the HMB system for rapidly detecting microbial contamination in fluids. Developed two-piece aluminum

can industry as market for the HMB system; now a standard tool for monitoring microbial contamination at can plants.

Principal clients included Magnus Division of Economics Laboratories, Pillsbury Chemical Company, Rainwater Industries and KVM Engineering.

ERCO Petroleum Services subsidiary of Energy Resources Company, Houston, Texas 1/81 - 5/82

VICE PRESIDENT, PRODUCTION SERVICES - Designed, built and staffed chemistry, microbiology, petrographics, and radiotracer laboratories. Developed business plan, managed operations, directed research and performed consulting services.

Energy Resources Company, Inc., Cambridge, Massachusetts 5/77 -1/81

MICROBIOLOGY LABORATORY MANAGER - Directed mission-oriented research for commercial and governmental clients. Successfully marketed laboratory and consulting services.

Major projects included microbial population characterization in petroleum formations, biocide evaluations for tertiary oil production applications, composting oil spill clean-up wastes, USEPA sponsored Rural Drinking Water Survey.

SENIOR MICROBIOLOGIST - Supervised field research efforts.

Principal project was Bureau of Land Management's Benchmark Study of the North Atlantic Outer Continental Shelf. Coordinated round-the-clock, at-sea, microbiological studies during quarterly cruises. SCUBA diver/scientist for Marine Fisheries Services evaluation of the biological effects of oil platform discharges in the Gulf of Mexico.

University of New Hampshire, Durham, New Hampshire 9/73 - 5/77 GRADUATE RESEARCH ASSISTANT, DEPARTMENT OF MICROBIOLOGY

Conducted field studies (SCUBA) and laboratory research of interactions between heavy metals and bacteria in marine and estuarine environments.

United States Navy, Active Duty 6/70 - 9/73

DAMAGE CONTROL ASSISTANT, USS McKEAN DD784 - Electrical, Repair and Auxiliary Division Officer. Responsible for ship's structural integrity, electrical systems, auxiliary machinery and damage control readiness. Qualified as Command Duty Officer, Officer of the Deck (Fleet) and Surface Warfare Officer.

United States Navy, Selected Reserve Duty 9/73 – 10/98

Retired as CAPTAIN, USNR after 30+ years combined active and reserve service, having commanded six successive Naval Reserve units and received four Navy Commendation Medals.

PROFESSIONAL SOCIETIES:

- American Society of Microbiology
- ASTM International
 - Chair, E34 Occupational Health & Safety
 - Chair, E34.50 Health & Safety of Metalworking Fluids
 - Founding Chair, D02.14 Fuel Microbiology Working Group
 - Vice-chair, D02.14 Fuel Stability & Cleanliness

- Past, Founding Chair D.02.14 Fuel Corrosivity Task Force
- Technical Contact or task force member for approximately 65 ASTM Standards
- International Biodeterioration and Biodegradation Society
 - President
- Energy Institute
- International Association for Stability and Handling of Liquid Fuels
- International Biodeterioration and Biodegradation Society
- National Association of Corrosion Engineers
- Naval Order of the United States
 - Commander, Continental Commandery
- Society for Industrial Microbiology and Biotechnology
- Society for Tribology and Lubrication Engineering (Fellow)
 - Past Chair:
 - Education and Certification Harmonization Executive Committee
 - Education Course Committee
 - Education Committee
 - Metalworking Fluid Management Education Subcommittee
 - Metalworking Fluid Certification Steering Committee
 - Certification Board
- United States Naval Institute

PUBLICATIONS

Approximately 70 published articles, book chapters, peer-reviewed papers and technical society presentations. Bibliography available upon request.