



# Anthony James Bowman, Ph.D.

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- Assisted in design of heat exchanger experiments, sales support and efficiency software for Sentry Equipment Corporation
- Coordinated energy laboratory facility and resources for department energy faculty
- Primary CFD user/trainer for the College of Engineering at Marquette University

## Research Assistant

- Researched optimization of component designs through minimization of entropy production, including boilers, fan design and various types of heat exchangers.
- Co-

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- Developed an alternative front head insulation method. The new application resulted in reduced production time and maintained the Underwriters Laboratory listing.
- Developed an alternative manufacturing method for combustion air hood design, which resulted in a 20% decrease in manufacturing cost.
- Trained drafting personnel in 3-D parametric modeling software (Pro/E).

NASA, Glenn Research Center (formerly Lewis Research Center), Cleveland, OH

*Research center specializing in the development and testing of propulsion technology (turbine, rocket, nuclear and electric), space power generation, wind tunnel and vacuum chamber experiments.*

(formerly Space Station Freedom)

*A multinational project to develop and launch a permanent manned space station. The station would first serve as an orbiting laboratory, and eventually as support for manned moon exploration.*

Research Engineering Intern, Power Facilities and Test Branch of the Operations Division

*The responsibilities included the design update of high vacuum, cryogenic, and plasma test facilities for flight hardware.*

- Assisted in the facility development for the Plasma Contactor Test – a device developed to provide a grounding mechanism for the space station via the controlled expression of ionized xenon gas.
- Participated in the operation and development of the Photovoltaic Array-Plasma Interaction Test.
- Assisted in the complete build-up of the Beta Gimbal Test Bed. The test involved the high torque and frequency oscillations of the joint in a simulated near-earth-orbit environment.
- Operated and maintained the Nickel-Hydrogen Battery Life Test facility (used in the Iridium satellite communications project).
- Supervised the complete build-up of the Roll Ring Test Bed. The roll ring provides a non-arcng, high-power electrical contact across a rotating joint.
- Participated in the refurbishment of the Space Propulsion Facility. The facility is the world's largest vacuum chamber. Updated the high vacuum oil diffusion pumps, the cryo-panels, and the repressurization system.
- Assisted in the build-up and operation of the Thermal Energy Storage Test Bed as part of the Solar Dynamics Project. Thermal energy storage was achieved utilizing the heat of solidification of a lithium salt.

Park, H., Bowman, A.J., Kim, K.,



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