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### **A Physicist Role in Innovation within IBM Research**

WILLIAM GALLAGHER, IBM Watson Research Center

The broad and deep insight a physicist brings to the goings on in a large technology company lead to many varied and exciting opportunities. Examples in my own career include contributions to important understanding of new breakthroughs (understanding the basic anisotropy of high temperature superconductivity), bringing vital physics understanding to ambitious engineering projects (basic switching and noise margins in digital Josephson junction technology), and initiating and growing large applied projects based on fundamental physics breakthroughs (magnetoresistive random access memory – MRAM). Success at such undertakings within a large enterprise involves a number of factors. Always seeking out the best expert advice and the best collaborators in unfamiliar technical areas as new ideas develop is enormously helpful and not at all difficult within a large innovative organization. While being imaginative and optimistic, one must also remain brutally honest about the potential value of new endeavors, the hurdles ahead, and the likelihood of success. Always, however, there is no substitute hard work. I can attest that the results of efforts along these directions within a technology company can be very exciting and satisfying, and the process along the way a whole lot of fun.