



READING REPORT FORMAT	
<b>Student Name:</b> Said Jesús González Matuk	<b>Teacher name:</b> Merced Leodegario Urbina Diaz
<b>Semester:</b> 9 <b>Group:</b> ICO-26	
<b>Delivery Date:</b> 22/09/2025	
<b>Book title:</b> Nanoscale Science	
<b>Autor:</b> Paul S. Weiss	
<b>Main ideas found in the text:</b> Paul S. Weiss is a pioneer in nanoscience, focusing on the atomic-scale properties of materials and developing tools like the scanning tunneling microscope (STM). His early work involved moving individual atoms (like xenon) with an STM and discovering long-range chemical effects on surfaces, which are important for catalysis. He and his team created and studied molecular switches and motors, uncovering their mechanisms by controlling the chemical environment at the nanoscale. Collaboration with neuroscientist Anne Andrews led to applying nanoscience to brain research, developing sensors to measure chemical communication in neural circuits for the BRAIN Initiative. This work expanded into the Microbiome Initiative, using nanosensors to monitor biomarkers for health, such as oral bacteria or stress hormones. A major application is in medicine: his group developed an efficient, acoustofluidic method for high-throughput gene editing (for diseases like sickle cell anemia) and cancer immunotherapy by delivering payloads into cells. Nanoscience is also used to create advanced, plant-based scaffolds for growing "organoids" (3D tissue models), which can be used to test personalized cancer treatments and study disease.	
<b>I liked this book.:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <b>Why:</b> The interview format made complex scientific concepts very accessible. It was fascinating to see the direct connection between fundamental research (moving atoms) and real-world applications in medicine, neuroscience, and energy efficiency. Weiss's collaborative story and the clear explanation of his team's breakthroughs were particularly engaging.	
<b>This book gave me:</b> A clear understanding of how nanoscience is not just theoretical but is actively used to solve major problems in healthcare and technology. It showed the importance of interdisciplinary collaboration (physics, chemistry, biology, medicine) in driving innovation. The article demonstrated the practical steps of scientific discovery, from asking a question to developing a tool, and finally to creating transformative applications.	





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Student Signature

Teacher Signature

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