

Physics 002B

Assignment #1

Quantum Theory in Search of Reality

Thursday January 19

Seminar Topic: Getting Started

Seminar Break: Boccio

Readings for presentations:

Boccio ---- Chapter_01 Beginning Ideas and Thoughts

Readings for alternative views and other background:

Gribbin --- Chapter 01 and Chapter 02

Lindley --- Act I

Seminar will consist of:

- (1) Presentations by students**
- (2) Mini-Lectures by instructor to help with the understanding of more difficult ideas as they arise during the seminar**

Each student should become an **expert** in their own part of the readings so that their presentation(using a Document camera) can be both **informative and interesting**.

Everyone should do **ALL** the readings so everyone can **assume** that other seminar participants have at least read the material they will be presenting, even though they may not have fully understood it and/or put it into a general context.

The **goal** of each seminar is that everyone **fully understand** all the readings for each week, including all of the **implications and ramifications**.

Presentations:

Boccio --- Chapter 01

Sections 1.1-1.2(pages 01-06) How does the universe work? What is quantum mechanics?	_Brinn_
Section 1.3(pages 06-08, 13-18) The classical point of view	_Dornbush_
Section 1.3(pages 08-13) Mathematical Interlude #1 (see Professor for help)	_Zevallos_
Section 1.4(pages 18-23) Particles and Trajectories	_Gutierrez_
Section 1.4(pages 23-27) Classical and Quantum Physics Get Together	_Hagedorn_
Section 1.5.1(pages 27-33) Duality and the double slit	_Austin_
Section 1.5.2(pages 33-41) Wien, Planck, and Photoelectric Effect	_Portillo_
Section 1.5.2(pages 41-53) Interference and Diffraction Classical Ideas (see Professor for help with algebra)	_Krackow_
Section 1.5.2(pages 53-63) Particle or Waves?	_Pozos-Brewer_
Section 1.5.2(pages 63-68) deBroglie's Ideas	_Sepulveda_
Section 1.5.3(pages 69-71) Complementarity	_Talian_
Section 1.6(pages 71-74) Final thoughts About words	_Wu_