

Physics 002B

Assignment #1

Quantum Theory in Search of Reality

Wednesday January 18

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?	<u>_Brambila-Olmedo_</u>
Section 1.3(pages 06-08, 13-18) The classical point of view	<u>_Corbin_</u>
Section 1.3(pages 08-13) Mathematical Interlude #1 (see Professor for help)	<u>_Tomlinson_</u>
Section 1.4(pages 18-23) Particles and Trajectories	<u>_Eisenberg_</u>
Section 1.4(pages 23-27) Classical and Quantum Physics Get Together	<u>_Eisler_</u>
Section 1.5.1(pages 27-33) Duality and the double slit	<u>_Englehart_</u>
Section 1.5.2(pages 33-41) Wien, Planck, and Photoelectric Effect	<u>_Fortuna_</u>
Section 1.5.2(pages 41-53) Interference and Diffraction Classical Ideas (see Professor for help with algebra)	<u>_Fishman_</u>
Section 1.5.2(pages 53-63) Particle or Waves?	<u>_Liu_</u>
Section 1.5.2(pages 63-68) deBroglie's Ideas	<u>_Montoya_</u>
Section 1.5.3(pages 69-71) Complementarity	<u>_Parikh_</u>
Section 1.6(pages 71-74) Final thoughts About words	<u>_Umana-Gomez_</u>