INTRODUCTION

If the reader reads the material in this section, it will quickly become evident that contemporary scientific views dictate that this material should be under the heading of particle physics, not chemistry. The reason for this introduction is to explain and "justify" why this particular material should be considered under the heading of chemistry, not particle physics. There are two primary reasons why this material should be under the heading of chemistry.

Firstly, I personally do not agree with certain "subdivisions" that exist within science. It is my opinion that the theories of particle physics which are currently being developed by physicists should be developed by chemists. The rationale behind this is as follows. My own definition of chemistry entails the following. "Chemistry is the study of matter which is predicated upon the intense scrutiny of the atom." This definition would include not only the study of electrons and how they would behave under an enormous variety of circumstances, but the nucleus and its interactions as well. If one works within these parameters, that means that chemists should be pursuing the theories that particle physicists are working on. Chemists may object to this position by adopting the view that the effective study of the nucleus requires a theoretical framework that is beyond the scope of the chemist. For example, the effective pursuit of experimental particle physics requires a thorough knowledge of high energy physics and the fields associated with it (electromagnetism and special relativity in order to properly grasp the nature of particle accelerators). I am cognizant of these (potential) objections. Nevertheless, I still stand by my position for the following reason. Certain fields of science may *require* a background in another field of science in order to facilitate effective progress in the first field. An example of this would pertain to Einstein's general relativity. In order to ensure optimum comprehension of this field, it is most judicious to learn tensor calculus first. Another example would be the need for some basic biology to ensure (an aspiring) doctor's effective progress in medical school. In a similar way, should there be a need for a rudimentary grasp of special relativity and electromagnetism in order to comprehend particle accelerators, then any chemistry graduate student who wishes to specialize in "particle chemistry" should simply be taught about these other fields.

The argument as to whether current theories of particle physics should, or should not, be pursued by chemists can potentially become rather intense. Therefore, I will merely state that I stand by my definition of chemistry and, that in accordance with that definition, what is currently being pursued by particle physicists should be the domain of the chemist even if very high energies are involved in the pursuit of this field. Furthermore, it would be appropriate for me to mention the following.

The material that appears in this section (chemistry) was developed as a result of my own study of chemistry, *not* particle physics. In fact, at the time of the development of these theories, I was only cognizant of two particles from particle physics. Specifically, the neutrino and the muon. These theories were developed as a result of certain questions which were coming to mind during my study of chemistry. For example, why was the electron negative, the proton positive, and the neutron neutral? A variety of other questions (*as it pertained to my study of chemistry*) also culminated in the development of this theoretical work.

With this said, there should be one word of caution as it pertains to this work. There is material here which unequivocally does not pertain to the study of chemistry but is germane to physics. As one example, there will be the solution to an astronomy problem that is known as the missing matter/dark matter. Since I will be the first to acknowledge that theories of this nature do

not belong here, why *are* they here? They are here for the simple reason that they were developed as a result of my study of chemistry. Or, to be more precise, my study of the intensive scrutiny of the atom. Since some of these theories (which clearly belong in the study of physics or astronomy) were developed *as a result* of my theorizing in chemistry, they appear here even though they don't truly belong.

Therefore, one reason why this material, which from all outward appearances should be under the heading of particle physics, appears under the heading of chemistry is because I feel that anything which falls within the parameters of an intensive scrutiny of the atom *should* be studied by chemists not physicists. However, this is only one reason why this material appears here. There is a second (and far more critical) reason why it is best that these theories be assessed by chemists, not physicists.

Whenever an individual opposes "conventional wisdom" within any established field of human endeavour, that individual will always encounter substantial resistance from the established professionals within that field. Almost any particle physicist would find my work "unacceptably unorthodox". Although particle physicists may be amenable to some of my work (the electron is not elementary), they would find the vast majority of my work (on the atom) sufficiently different as to induce intense opposition to my theories. A cogent example of this pertains to the missing matter. There is a particular particle which I state is responsible for the dark matter. However, particle physicists (and astrophysicists), in their quest to ascertain what may constitute the missing matter, have ruled out this particle and insisted that it *cannot* constitute the missing matter. (The reader may feel that if this is the situation, then I must be a conceited ass whose theories are not worthy of consideration. However, the model of gravity that I will build at this web site, will substantially change our theoretical view of gravity. Although the model *will* incorporate the best concepts of Newtonian and Einsteinian gravity, there will still be substantial refinements to the model of gravity.) The entire physics community claims that this particle cannot comprise the missing matter, yet I state that it is the missing matter. Opposition is inevitable.

In order to illustrate just how reluctant I am to present these theories to the physics community, let me develop what was mentioned in the last paragraph (I have the solution to the missing matter) a little further. This is not the only major problem that I possess a solution to. There are theories of quantum gravity, the mechanism of high temperature superconductors, and the holy grail of physics, a grand unified theory. When I initially E-mailed professors (in the fall of 2000) to inform them of the existence of this web site, I never mentioned that there would be the solution to any of these problems. I merely informed them of my theory of the origins of the universe, the solution to the solar neutrino problem, and the most viable solution yet to the electron two-slit interference pattern. If the goal was to induce them to look at this web site, why didn't I mention these other theories. I didn't mention them because I knew my solutions were so unorthodox that they wouldn't be accepted by the physics community. In fact, I was giving serious consideration to not posting these theories at all because of the following. An individual's (valid) work may not be recognized if that individual develops some other concepts which are clearly foolish. An example of this would be Linus Pauling. In the latter years of his life, his reputation as an intellect was severely tarnished when he started to advocate taking inordinate doses of vitamin C. I myself recall purchasing a book many years ago on Jungian psychoanalysis with the full intention of familiarizing myself with Jungian psychoanalytic tenets. However, the introduction entailed a brief biographical sketch of Jung. It stated that Jung was a strong believer in psychic phenomena. When I read that, I chose not to read the rest of the book (the theories) as I questioned the rational thinking capabilities of anyone foolish enough to believe in psychic phenomena. In a

similar way, my theoretical work under chemistry is *so* unorthodox that it would be viewed as "crackpot". This would tarnish the view of my other work and impede the (potential) acceptance of my other work. My only hope is that chemists will be open minded enough to recognize my work. I would be lucky if even one in two hundred physicists accepted the theories outlined under chemistry. If the physicists I E-mailed looked at this web site hoping to find (for example) the solution to the missing matter, they would be disappointed and, in essence, feel "cheated" by the solution proposed, even though I firmly believe in the accuracy of my theory. They would then swear to themselves that never again would they pay attention to an unsolicited E-mail from someone unknown to them. All of this for the simple reason that my work is unorthodox.

When an individual opposes the "orthodox grain" in this manner, there is one of two types of people who would be capable of recognizing his work (assuming of course that the work is valid). One type of person would be a very open minded genius. The other would be an individual who is "on the periphery of the field", but still capable of rendering an effective analysis. I can draw an analogy to illustrate the meaning of the last statement by repeating the true story of how Houdini became a superstar in England (and subsequently Europe) at the turn of the century.

When Houdini focused on escaping from handcuffs, he gained some degree of popularity in America under the direction of the type of person who was previously mentioned (a manager who was a genius). When he journeyed to England, he proceeded with a whole scrapbook full of glowing reviews from America attesting to his act. However, in his first few weeks in London, he went from booking agent to booking agent and nobody was interested, despite the inordinate number of glowing reviews. Finally, he met a young agent who was impressed with the reviews and subsequent to personally having him tested, booked Houdini at London's most prestigious theatre. He became an instant smash and superstar. Why was he initially rejected by so many agents, and what quality was it pertaining to the agent who accepted him that enabled him to recognize the value of Houdini's act? He was rejected by so many agents because his act was unorthodox. Since he was a magician, agents would expect him to make things appear, disappear, levitate, etc. But a magician escaping from handcuffs? According to the agents, that's not magic, despite the scrapbook full of reviews from America. If this was the case, why did one agent accept him? At the time that Harry Day (the agent) saw Houdini, Harry Day was new to the entertainment industry and the whole agency business. He was also young. (I'm not sure how young, but Houdini was 26 at the time and Harry Day was younger than that.) As a result of these two factors, Harry Day had not been in the business for a sufficient period of time to become "brainwashed", one dimensional, and pedantic. Consequently, in his own mind he did not insist that a magician "had" to have a certain type of act. He was open minded and amenable to new types of magic. To be specific, he had not been exposed to the "orthodox" ideas of show business for a lengthy period of time thereby enabling him to recognize something new. Fundamentally, this would be the case in any field of human endeavour wherein there is an attempt to have unorthodox (yet valid) work recognized. An individual who is on the periphery of the field, yet still capable of implementing an assessment would be best. Such an individual has not been brainwashed into becoming pedantic and one dimensional.

By placing this scientific material under chemistry, I am hoping to achieve a similar effect. Specifically, chemists would obviously be capable of assessing any theory which delves into the intricacies of the atom. However, chemists do not think "day and night" of quarks, leptons, and gluons. Since these are *not* the parameters of their thinking, then I am hoping that they will be far more open minded and amenable to work which is not in precise accordance with these principles.

It does not bode well for me that contemporary particle physics is not the only field of physics which these theories oppose. If these theories are correct, then superstring theory is invalid. The rationale behind this is as follows. The foundation upon which the "edifice" of superstrings is built is that fundamental constituents of matter (such as the quark, electron, and neutrino) are comprised of a string which is oscillating in different dimensions. If this concept is incorrect, then all of superstring theory comes crashing down like a house of cards. Although my theories do not *prove* that this foundation is wrong, my theories are in contradiction to this underlying precept. As a result of this, there will be intense opposition from a small (or possibly even wide) circle of physicists. The reason for this concern is the following.

In 1998, I briefly met Leonard Susskind, a prominent string theorist from Stanford. I posed the following question. Historically speaking, it is my understanding that when special relativity was published in 1905, they were oblivious as to how they would test the theory. Despite this fact, it was my impression that there was an instinctive feeling that the theory was correct. In the same way, superstrings is completely untestable not only for now, but for the foreseeable future as well. Despite this fact, is there, like in 1905, any instinctive feeling as to whether it is the correct description of nature or not? His initial response was to state that the people working on it think it's correct. My response was that's obvious otherwise they wouldn't be working on it. He then asked, more broadly? I said yes, more broadly. After a moment's reflection he responded with the following. The world's leading theorists are working on this. Furthermore, there doesn't seem to be a strong voice of opposition to superstrings. Therefore, when the world's leading theorists are working on it without an effective voice of opposition, then there is a tendency to believe it's correct. If this is fundamentally accurate, then that will be an additional circle of opposition to my work. However, that circle of opposition will be miniscule in relevance to the ferocious opposition I can no doubt expect from *one* physicist. The leading superstring theorist in the world is Edward Witten. Not only is he the leading string theorist, he is one of the world's leading physicists. As has already been stated, if my work is correct, then superstring theory is automatically wrong. That means that all of the superstring papers written to date will, for all intensive purposes, have been for nothing. Witten is not going to take kindly to seeing years of work evaporate into thin air. No doubt, he will try to crush me like a bug. Since his voice carries tremendous weight within the physics community, he may succeed.

Let me point out three reasons why the physics community would not want to accept these theories outlined under chemistry.

1) Some of my work opposes Nobel prize winning physics.
2) The work is phenomenally unorthodox and in contradiction to existing theories of particle physics.
3) As far as I know, never in the history of science, (in *any* field of science), has any theory/set of theories asked the scientific community to give up as much existing theory as this work will ask the community to give up.

Each of these objections will be addressed in turn.

1) The progress of science should never be held back for the *sole* purpose of maintaining the "validity" of the Nobel prize. For example, what if the scientific community became absolutely convinced of the validity of a theory which opposed Nobel prize winning physics. Would we insist that we cannot accept the theory in order to "protect" the validity of the Nobel prize? Obviously

not. In a similar way, if my work proves to be the correct description of nature, we cannot oppose it *merely* because it opposes Nobel prize winning physics.

2) Although on the "surface" the theories are unorthodox, if one scrutinizes the situation a little more closely, they aren't quite as unorthodox as a "preliminary glance" would indicate. As an example, I have not truly put myself into direct opposition to Gell-Mann and Zweig on the theory of quarks. If one takes a *broad* view of what they did in 1964, they proposed that nucleons have a sub-structure. Not only have I not opposed that concept, on the contrary I am in complete agreement with the precept. I have merely modified certain details as to the nature of that sub-structure. Furthermore, in proposing alternatives to quantum field theory (QED, QCD, and the electroweak theory), I have already implemented this step in my paper on magnetism. I am merely building on the highly unorthodox material that was presented there and extrapolating the model to quantum mechanics.

3) I may very well be asking the scientific community to give up a great deal in regards to established theories of physics. However, there is inordinate "compensation" for this. Many problems in physics will be solved in "one fell swoop". There will be theories for many phenomena which the standard model cannot even begin to explain (even though physicists probably won't accept my theoretical work). Therefore, I may be asking physicists to give up a great deal, but I'm also giving back a great deal as well.

Therefore, why are these theories which, in principle, should be under the heading of particle physics under the heading of chemistry instead? Firstly, theories of this nature should be the domain of chemists, not particle physicists as chemistry is the study of matter which is predicated upon the intense scrutiny of the atom. Secondly, when material is unorthodox, it is most judicious to have individuals who are on the periphery of the field assess the material as they have not had sufficient exposure to the established principles to become pedantic and one dimensional in their thinking.

Although the above explains why this material is placed under the heading of chemistry, there is another overwhelming objection which *any* physicist (not just particle physicists) would have to this material (especially the work under The "Groundwork" for Answering Some of Physics Most Confounding Problems). Regarding the particular nature of this objection, physicists would, to one extent or another, be justified in their opposition. I myself am discontent with my material as a direct result of this objection. The precise nature of this objection is as follows. There is no quantitative analysis of the theories. Physicists would be fully justified in opposing this material as a direct result of this extreme shortcoming in my work. As has been stated, I myself am not content with my work as a direct result of this inordinate drawback. Consequently, one might be inclined to state that the following material is not worthy of incremental consideration. A preliminary analysis may indicate this. However, a slightly deeper analysis reveals the following.

Firstly, the mathematical framework required to implement a proper quantitative analysis of these theories (especially the work under The "Groundwork" for Answering Some of Physics Most Confounding Problems) doesn't exist. An entirely new mathematical framework will have to be created since we will be dealing with a many bodied problem with a few of the theories. Although this is one barrier to implementing the requisite quantitative analysis, a second barrier pertains to the inadequacy of my development of the *physical* aspects of the theoretical framework (at least in certain respects). In some of the work that is to be outlined in the chemistry section, much of it relies on the principles outlined in the paper An Examination of the Magnetic Field (under

physics). In that paper, it is stated that there are "holes" in the theory which *must* answered prior to the theory being considered complete. Until these questions are answered, an accurate mathematical analysis cannot be implemented.

Given these facts, the reader may be of the following view. Since there is no appropriate quantitative analysis, the material in the chemistry section should not be presented. On the one hand, this may be somewhat meritorious. However, consider the following.

Although it is impossible to implement a quantitative analysis (for the time being), that doesn't mean that the following material is completely useless. Even without a quantitative analysis, *our ignorance of certain physical problems will be largely eliminated*. As things stand, the problems for which I am presenting a deeper understanding have completely defied explanation to date. With the presentation of this work, our knowledge and understanding of these problems will be *dramatically* enhanced. Therefore, even without a quantitative analysis, this would be a major step forward for science (assuming, of course, that my theories are fundamentally accurate). The reader should not misinterpret what I am stating. The reader may feel that I am condoning a perspective of this nature (the presentation of physical theory without a quantitative analysis). I am *not* condoning this perspective. What I am stating is the following.

English is inherently imprecise when it comes to describing our physical theories. That is why we require the precision and unambiguous language which is presented by math. Until I am able to develop the appropriate mathematical framework (*and* answer certain questions as it pertains to the physical aspects of these theories) we are left with two alternatives.

1. The material is not to be presented at all until there is a quantitative analysis. This means that we will remain *completely* ignorant about some of the most confounding problems currently facing physics.
2. The material will be presented and given due consideration even without the requisite quantitative analysis. This, of course, means that the theoretical framework will be incomplete. Although the framework will be incomplete, we will emerge from the "wilderness of ignorance" as it pertains to certain problems and gain a much deeper comprehension of some of physics most confounding problems.

Both alternatives are very wrong. However, which is the lesser of two evils? In my opinion, the second alternative is, by far, the lesser of two evils. In other words, what position would be superior? For there to be no answers whatsoever, or to have imprecise answers (given the imprecision of the English language when compared to the precision of math)? Even though the second alternative completely contravenes the "philosophy" of physics, this will not be the first time that certain central tenets of physics will, in essence, be contravened. What is specifically being referred to is superstring theory.

Every physical theory requires experimental validation. Given the energies required to test string theory, it is completely untestable not only for now, but for the foreseeable future as well. Given this fact, there are some who will claim that superstrings cannot be viewed as acceptable physics. Since there are those who feel this way, why is string theory so avidly pursued? It is pursued since, independently of my work, it offers the most viable hope of quantizing gravity. As we all know, there is an overwhelming need to quantize the gravitational force.

There are correlating factors with my work. The solutions which I am proposing (which includes the quantization of gravity) are ardently sought after. If I can greatly enhance our

comprehension of these problems and largely eliminate our ignorance, this would be desirable even if there is no quantitative analysis. Furthermore, in the future I am confident that I will be capable of developing the mathematical framework and answering the questions that need to be answered in order to implement a quantitative analysis of this work.

An explanation of why this work is being presented despite the lack of a quantitative analysis can be summarized via three points.

1. When it comes to extraordinarily confounding problems within physics, imprecise answers are superior to no answers whatsoever.
2. Superstrings clearly exemplify the following. When it comes to ardently sought answers, although it is not necessarily acceptable (per se), it is "somewhat acceptable" to pursue a framework which is completely contradictory to the overall philosophy of physics. (Again, what is being referred to is the untestable nature of strings.)
3. What if I am not able to develop a quantitative analysis of a many bodied problem in my life time? What if this mathematical framework is not developed for another 100 years? If the reader feels that these physical principles should not be presented without the requisite quantitative analysis, then it is possible that the physical principles outlined in these papers will go with me to my grave. If that were to transpire, then the solutions to some of these problems could not be presented, even with (the eventual development of) a mathematical description of a many bodied problem.

Given these elements, the following can be stated. Although the presentation of this work (without a quantitative analysis) is not completely acceptable, it is justifiable.