

THE BIRTH OF SECTION-F

Paul Murad on the STAIF & HFGW Conferences

By Tim Ventura & Paul Murad, February 8th, 2006

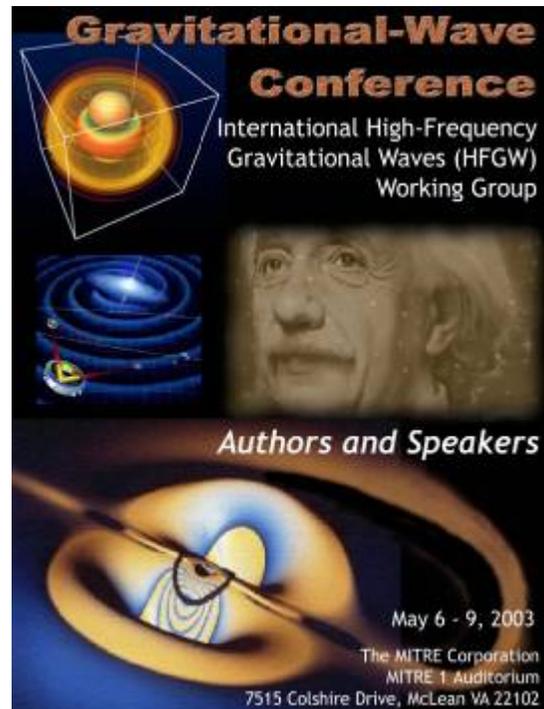
Section-F of the University of New Mexico's STAIF Conference has rapidly become the hottest venue for Antigravity & Breakthrough Propulsion researchers to learn about the latest trends in emerging space technologies. We join Conference Chairman Paul Murad for an inside look at what makes this forum so uniquely valuable, and what brought it all together in the beginning...

AAG: Things have been going pretty well for you lately -- as the chairman for Section-F of the STAIF Conference, you're in charge of the world's leading Breakthrough Propulsion Physics forum, featuring presenters from all over the globe and almost a rock-star reputation in the AG community. Can you tell us a bit about the situation at present, and how the conference is building & evolving?

Murad: First of all, thank you for the kind words. I find it hard to believe that I have 'rock-star' status concerning anything in life! Second, we try to bring fresh ideas to every new conference and leave it mostly up to the submitting authors regarding what subjects will be of primary concerns. Third, each conference tends to feed off of the ideas presented at previous conferences. For example, I presented two papers last year on warp drives. From my perspective, I was going to look at the subject as if it really had no place in such scientific investigations because it may be too far out there. I read about 50 technical papers on the subject and realized that many people took this subject up with great seriousness and had performed yeoman's work. Later, I had more than ample material to discuss these ideas in the first paper and then to identify certain problems and potential solutions in the second paper. Basically for warp drives or worm holes, you need negative energy and I left the topic with how do you produce negative energy? This year's conference has a paper on just this topic by Eric Davis. A similar thing occurred several years ago concerning the idea that gravity waves obey a law of optics and could essentially be focused which has interesting consequences. So one conference provides stimulation for the next conference and hopefully, this may be a never-ending process.



Paul Murad: The ISNPS STAIF Section-F Conference Chairman.



HFGW Conference: This 2003 Conference sponsored by Mitre is where it all started...

AAG: Given the impact that Section-F is making, it may be hard to believe that this conference almost didn't come together, but from what you've said, that was exactly what happened. Can you take us back to the beginning -- before STAIF & HFGW, and tell us a bit about your early days presenting your own papers at the AIAA & STAIF Conferences?

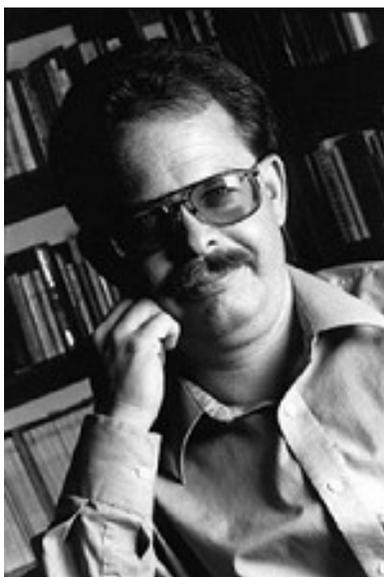
Murad: I presented papers at AIAA conferences for most of my career. In fact I once was laid-off because I had a paper accepted at an AIAA Conference. In the early nineties, I submitted papers on topics that focused around UFOs but I never mentioned the subject in the abstract. The reviewers accepted the papers on the basis of the abstracts. I remember one meeting where two papers were accepted. One was at night to a crowd of 30 people and I figured that this was not so bad. The next day, my second paper was in the afternoon and I was surprised to find that the room was filled with about 80 people. Amongst those in the audience during the evening presentation was Dr. Robert Forward who I will discuss later.

At an AIAA Space Mechanics Conference, I presented a paper questioning Einstein's premises in the theory of relativity and why there was a limitation on travel faster than the speed of light. Initially I saw 20 people in the room five minutes early and suggested that I should start. The moderator said to wait. When I eventually started, I found every seat in the room was filled and people started to line the walls in the rear and sides of the room. With over 120 people, I was wondering if all of these people may have made a mistake and went to the wrong room for the wrong paper?

When it was time for Q&A, a young man stated that he had studied the Theory of Relativity for over 10 years and this was the first time he had heard anyone question the theory of relativity or make such comments. With all of the problems that I identified, what did I intend to do about it? I looked pensively at the floor and said: "My generation", at that point I say some professorial types in the front row look at the ceiling recognizing that I was about to pass the buck. I continued: "My generation has done all that it could to extend the theory of relativity. We have taken the theory only so far and no further. Since you were smart enough to ask the question, then it is up to you and your generation to find the answers. I am sorry but you will have to find the answers."



Mission to Mars: Dave Lavery, NASA JPL, the STAIF 2004 Banquet-Event Speaker.



Dr. Eric Davis: Section-F panel review committee member.

There were no more questions. I later realized that what I did was unfair and I had taken advantage of the young man. I had to find the answers for myself. I spent 3 months going through the first half of Einstein's 1905 paper and I knew that you could not question the mathematics of an analysis unless you found a minus sign error; however, you could question the assumptions and the conclusions. Moreover, Einstein stated three times in his paper that based upon his assumptions: nothing goes faster than the speed of light. Why would he do this? If you tell a baby to stop, the child might listen the first time but if you tell it to stop three times, the baby would ignore you. Einstein, with lawyer-like precision, carefully stated his assumptions. However, when I looked at the assumptions, I realized that he had two reference systems, one stationary and one moving, and that the moving one was moving at sub-light speed. He never mentioned this. It was always inside of the pulse of light released by the stationary coordinate system when the two systems were closest. If the moving coordinate

system moves at super-light speeds, the mathematics are different but still hold and there was no theoretical reason why you could not travel at or faster than the speed of light. These findings were published at another AIAA and a STAIF conference.

I guess my point in these statements is that a large number of people, knowledgeable people with significant credentials, young and old, were interested in looking at 'hard' evidence concerning UFOs. They did not want to accept the status quo but wanted to look into problems that would challenge their thinking and make them reach beyond their intellectual grasp. They wanted to believe that maybe another more advanced civilization could travel back and forth amongst the stars and if so, then someday we too may want to do this. Maybe not in this generation but sooner or later, mankind will voyage across the heavens and maybe the genesis of that idea was at those meetings. In fact after those sessions, people started to look for and found super-light phenomenon especially with emissions from black holes.

AAG: So even back then, STAIF and the AIAA were accepting papers on BPP topics, but my understanding is that there was a stigma associated with these concepts in mainstream physics that always put them in the back seat to more conventional physics. Did you encounter any of this stigma against the "far-fetched" ideas of BPP in those conferences? It would be interesting to capture your memories of what it was like to publish & present their, and what the culture of that community really felt like.

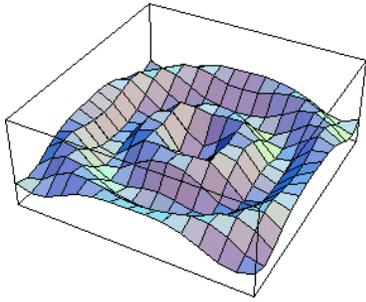
Murad: No one wants to lose credibility by talking about UFOs or going faster than the speed of light. AIAA reviewers started to scan my papers for any mention of UFOs and my papers would soon be rejected. Now this is unusual because I and my colleagues are not children. Why would we be afraid of such things as mentioning UFOs? I met Tony Robinson at the HFGW Conference and he mentioned that in some cases, management of various organizations would reject papers if you mentioned certain foreign authors. Remember what happened when a newspaper article hit the streets that Boeing was looking at the Podkletnov spinning disk experiment. It was accepted at Boeing as being a potential embarrassment and they immediately backed out of such activities because it was perceived that the publicity would endanger their subsonic transport market. Imagine what would happen if all of the aerospace companies were afraid to look at new ideas? That is one thought that not only would embarrass me but it scares me.



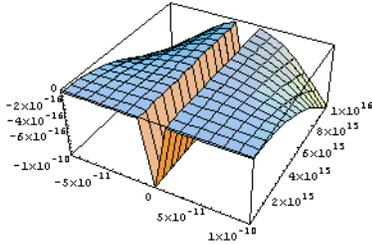
Rep. Walker: From the US Congress speaking at STAIF '04.



NASA Glenn: A STAIF 2004 exhibit for space-nuclear propulsion & power research.



Above: High-Frequency Gravitational Wave model.



Below: Nuclear vibration model in HFGW production.

The culture and the problem set had to change. The major problem was how could one simple person change these things and then I found that I was not alone in these beliefs and surrounded myself with several other kindred spirits with similar ideas. This included Dr. Bob Baker and Tony Robertson. My papers were then being rejected from both AIAA and STAIF because of much stricter selection criteria. For example, papers would only be accepted if I had somebody from academia as a co-author! At this point, going to these conferences were, at least in my view, quite boring. It was as if the technical community had shut down and would become bureaucratic, thereby losing its lust to resolve new and exciting technical challenges. Clearly the technical community was falling into a risk-averse paradigm and apparently there was no way out.

During the end of the nineties I started to attend the Weakly Ionized Physics Conferences and started to talk to Russian authors and started to complain about their style of presenting papers. I also found that American authors were literally afraid of asking the Russians hard questions. This was systemic to the problem that American Aerospace Industry was facing following the demise of several large technical programs to include NASP. Surprisingly, the Russians accepted my advice and their papers are of similar as if not better quality than ours.

AAG: In my opinion, I'd have to say that the real "beginning" of the effort was really the 2003 Mitre High-Frequency Gravity Wave conference, which you organized and chaired. Before HFGW, a few papers were showing up at STAIF & AIAA, but the HFGW conference was the first dedicated effort to focus on what we might call basically "how to manipulate gravity", right? Can you tell us about the inspiration for HFGW, and a little about the planning & organizational challenges that went into it?

Murad: I don't know how but I was introduced to Dr. Robert Baker on the Internet. I had used his textbook 40 years earlier as a graduate student at NYU and here I am interacting with the author. This was very unusual and it was strange why this would ever happen in the first place. However, Bob mentioned the need for such a conference and kept pushing me sending me one paper after another on the subject. He continually pushed me to have this conference and, although I never ran a conference or was a session chairman, this was a challenge that I accepted. Moreover, I rarely try to refuse people's requests especially when they want to support a noteworthy cause. I tried to get funding and, through a contact, ample funding would be provided with the conference at Mitre. This would include coffee, donuts, etc. as well as travel expenses for the foreign presenters. Bob somehow had amassed a collection of foreign colleagues and asked if they would be interested in such a meeting? Every single one thought such a conference would be a good idea and made a technical contribution. Baker did a magnificent job and coordinated all of the activities with some exceptions for the conference and me.



Dr. Robert Baker: HFGW & STAIF gravitational-wave expert.

AAG: Another interesting aspect of the HFGW Conference was that it really had an all-star cast -- including Eric Davis, Ning Li, Robert Baker, and several notable physicists. Can you

tell us a bit about the attendees -- how they became involved, what kind of backgrounds they brought with them, and how you were able to capture such great talent for the conference?



Dr. Hal Puthoff: Earthtech.org founder presenting in 2006.

Murad: Man, you missed a lot of other important people as well! Drs. Hal Puthoff and Bob Becker gave papers; Dr. Frank Mead, Marc Millis and Nick Cook were also in attendance. There were three Russian presenters and they were absolutely fantastic as well as Dr. Portilla from Spain and other papers from Germany, Italy, and many other countries. I personally went through each paper, especially the foreign ones, so that they read smoothly in English.

These individuals represented a very technically diverse cross-section with various levels of technical expertise that covered many disciplines. Part of my objective was to understand how seriously these people were involved in this subject. As is typical of Americans, during the coffee breaks, they would sketch a candidate idea for a gravitational wave detector at a given frequency x trying to impress a foreign presenter. The foreigner in one case shook his head and suggested it was a good design and then took out Polaroid pictures showing his test apparatus at frequency x , then y and finally z ! These were pictures of metallic hardware representing a gravity resonating cavity that was shock isolated and quite impressive. Clearly, the U.S. had ignored this technology and seriously, if there was any value to this work, we were sorely not even second best.

AAG: One notable point from the HFGW Conference notes was a supportive letter from the widow of Dr. Robert Forward. I've heard that he was really one of the founders for the concept of High-Frequency Gravitational-Wave theory, and I'm wondering how he fit into the conference, and how the letter became almost an introductory "statement of purpose" for the presentations?

Murad: Bob Forward passed away about a week before the conference. I had no real idea of how impressive he was. Mead had supported him when he looked at exotica such as anti-matter propulsion and tethers. I found that in a 1963 paper, he talked about controlling gravity with electric and magnetic fields, something that Einstein in his recently translated papers from 1920 said the same thing. Forward looked at gyroscopes about the same time as the Russian Kosyrev also investigated such effects.

I found that Bob was a mentor to such people as Eric Davis and many others. Earlier I mentioned that I gave a paper and during the evening presentation, this man with lots of gray hair and a bright red vest, got up and went to the rear of the



Dr. Robert Forward: Renowned physicist & early proponent of HFGW research efforts.

room walking back and forth. I immediately assumed this was one of the “Gods” and he was thinking of questions to ask me, sharpening his spears to run me through and through, that would show me the ‘obvious’ error of my ways. “What would he ask me?”

When it was time for Q&A, he went back to his seat and sat down. Two years later I met Bob at a conference in Huntsville and asked why he did not question me? He responded that he was surprised at what I was saying that he agreed with everything that I said. I don’t know of a higher complement one person could pass on to another. Bob, though this act, his achievements, and papers definitely had gained my respect.

AAG: Looking back on things, from what I've heard about the HFGW Conference I get this feeling of wonder at seeing such optimism about what at that time was really the beginning of a new realm of scientific exploration. Did you realize that this conference might have historic implications at that time, and how do you think history might speak about it in the future?

Murad: Personally speaking, I had no sense that it was historical in nature but more or less a collection of talented individuals interested in giving birth to a new technology and seriously demonstrating the technology’s use, potential, capabilities, and limitations.



Project Prometheus: NASA's nuclear-drive to Mars could triple a rocket's top-speed.

Regarding history’s retrospective view, the papers are entirely credible and it was a heck of a first start. What amazes me is that in three years, we have gained considerable knowledge in this discipline and I now feel that there is a tremendous potential in this field that could hold the key that would unlock the problems associate with many of the problems that plague mankind.

AAG: As I understand things, part of what makes the HFGW Conference special is that it was a singular, one-time event. At the time, though, weren't you planning to begin annual sessions? What happened to change your plans?

Murad: I would have preferred more meetings but the initial conference cost about \$60,000. Not to many people step forward with those kinds of resources. Recognizing that this would be slim or near impossible, I did the next best thing and that was to provide a similar forum at STAIF where this technology could grow and be nurtured by some of the brightest minds available, either locally or foreign. Look at the collection of presenters in gravitics alone. It goes from Woods, Baker, Woodward, Tajmar, to Hathaway. This is a very impressive list of players for anyone’s conference...



Marc Millis: NASA BPP team leader & aerospace engineer.

AAG: Basically, you jumped from HFGW in 2003 to become the chairman for the newly-created Section-F at the venerable STAIF Conference in 2004. Can you tell us how STAIF decided to add this new section and what its focus was?

Murad: Toward the end of the HFGW meeting, Marc Millis approached me and asked if I would be willing to run a

conference at STAIF on similar subjects. Tony Robertson was there and when I said yes, Tony agreed to be my co-chair. Baker, Chuck Suchomel, and Frank Mead also asked to help. Marc was asked to provide me with the paper selection criteria that he formerly used for STAIF.

I unfortunately looked at these criteria and recognized that it was way too restrictive. Papers would require co-authors from academia and other restrictions existed. In fact Einstein's 1905 paper would not be accepted because it did not have any references. Can you imagine being the individual that rejects Einstein's 1905 paper?

I did not want to run such a conference nor did I want the restrictions where the mere mention of UFOs or specific author's names represented an immediate rejection. In fact, I wanted a criterion where we would actually help the author, especially first-time authors, to put their papers together. The abstract and conclusion statements had to be clearly written with a strong bottom line or selling point that allows the reader to understand why they should spend time reading the paper. Moreover, it was my personal experience in dealing with high-level DoD managers; they only have enough time to read abstracts or executive summaries. If you do not get your point across by that time, then you have lost a golden opportunity. Tony and others agreed with this approach.

The lesson in this is that if you want to run a conference, do so. But you should recognize that each conference has to be treated in a unique fashion and you have to continually need to do things to make it interesting if you want to appeal across the technical spectrum.



Dr. Mohamed El-Genk: UNM ISNPS STAIF Conference Plenary (General) Chairman.



Lockheed Space: An ISS promo-display from STAIF '04.

AAG: Now the STAIF Conference general chairman is Dr. Mohamed El-Genk, who you'd worked with in establishing Section-F. As I understand things, there were some early questions about whether you could have it organized in time for the conference deadline, and even a cellular conference-call in your bathing-suit for a status meeting while you were on vacation at the beach. Can you elaborate a bit for us on the planning & prep stages?

Murad: Things were very dynamic at the time. Between Tony, Baker, Woods, Mead, Woodward, and others, we were really 'hustling' to get a successful conference going. It was almost like a second job with e-mails that had to be read and answered overnight as well as papers to be screened, reviewed, and interactions carried out with the authors.

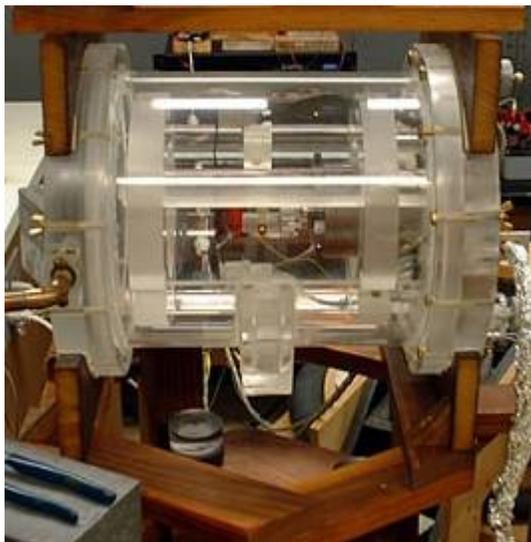
To set up for the first STAIF conference, we only had 2 months to get enough papers for 4 to 6 sessions at 4 papers per session. STAIF consisted of 6 separate conferences at that time and these other Conference Chairs/co-chairs had a year to populate

their sessions. Additionally, I was concerned that if we did not have a follow-on to the HFGW conference, we would lose extremely important momentum. This could be disastrous where you are at the birth of a technology only to later throw out the baby with the bath water. Momentum is extremely important.

AAG: Some of our audience might not see the connection between the HFGW Conference & Section-F, but it's really quite simple: didn't most of the attendees from HFGW simply transition to STAIF? Did you lose any presenters, and did the culture of this conference impact the presentations differently?

Murad: Absolutely. Bob Baker and Clive Woods each submitted numerous papers for several sessions. My friends at other conferences or colleagues were also asked to submit papers and to my surprise we were able to get more papers than we expected. As I mentioned, I went through each paper at HFGW, and I did the same here.

Regarding STAIF 2006, we lost some of the foreign participations because we could not offer payment for travel expenses during this last conference.



Mach-Lorentz Thruster: A remarkable reactionless thruster in STAIF Section-F 2006

AAG: Speaking of culture, I'd like to touch on attendance: STAIF is a big conference, and I've heard that at the 2004 session there were maybe 40 regular attendees, as well as the somewhat disturbing sight of Air Force officers quietly moving around in the back of the conference room. Can you tell us what the attendance was like in 2004, and if it increased to the 2005 Conference?

Murad: The overall STAIF conference in 2004 had up to 750 attendees and we held an audience of regulars for each paper. I am not concerned about military attendees. In fact I have many people from DoD and various government agencies as session chairs and co-chairs is useful because if funding were available, they would be knowledgeable about it. One individual, for example, helps us get funds to pay for foreign travel through his resources. This was the way I operated during past conferences. Unfortunately because of the war in Iraq, travel funds will not be available so we have to find other alternatives in terms of foreign presenters.



Dr. James Woodward: The man behind the MLT thruster.

The other major issue is that each year requires a different slant on the problem to keep things 'fresh'. This last year we invited several heavy-hitters and ran into some difficulties. One major problem was to get these authors to reduce their papers from 30 pages to 8. Another problem was to get authors to carefully craft their ideas in clear and concise language. Other problems occurred where these individuals did not want to accept some of the recommendations from reviewers or myself. This became somewhat of an 'ego' thing and unfortunately, we eventually in some cases, had to reject the submitted paper. In these situations, rewrites of papers always, without question, improve the paper's quality and 'value-added' comments raise issues that the original author may have never considered.

AAG: On the subject of attendance, I should note that you've been actively seeking international papers, and STAIF also has a discretionary fund to potentially pay the transportation & lodging for international speakers. Any comments about the international role of this conference, and maybe a wish-list of people that you'd like to see fly in to present or speak?

Murad: STAIF unfortunately does not have discretionary funds for foreign travel. I wish this was not the case but that is a painful reality. The international role always helps because it exposes American engineers and scientists to new ideas. Any growth on our part that makes us stretch our imagination is important to dislodge the 'not invented here' syndrome. We are no longer the leaders in many disciplines and technologies. We, in our humbleness, need to understand this and learn to grow. For example, when Podkletnov described his spinning disk experiment, everyone ran off and thought they understood what he did. No one asked about the dimensions or geometry of the disk or what was the process he used to manufacture or create the superconductor. I saw the same thing with the AIAA Weakly Ionized Gas conferences where the Russians were presenting unusual results. In the initial days, no American asked about the current or voltage levels required for the tests and, guess what? The Russians would not volunteer this information unless they were asked. In some cases, the authors hedged on their answers.



Northrop Grumman: A model of a nuclear-powered spacecraft from the STAIF 2004.

The overall impact of this is that we Americans have to put our feelings and egos aside and listen to what a foreign scientist has to say. They are no longer people learning from us but people that we can learn from; some do extremely excellent work that would 'cross your eyes'. Moreover, we need to carefully craft our questions and try real hard to understand the answers. If we don't, we should admit it and ask follow-up questions.

AAG: I'd like to ask about some of the other transitions from the 2004 to 2005 STAIF Conference - unlike the move from HFGW, were there any real challenges getting the new year's session ready, or were most of the presenters already familiar with the routine? Did anything change between the two years?



Dr. Clive Woods: HFGW & STAIF presenter on BPP physics.

Murad: One primary area was to get involved in some of the e-mail threads that some of the authors were involved in. Several years ago, these threads did not exist. This included the one thread with Paul March and Dr. Jim Woodward regarding mass fluctuation propulsion. Here, you learn to better understand the issues and ask pertinent questions to redirect people's thinking as well as make suggestions that may lead to future efforts. Right now, I would like to see them boost the thrust level from the level of ounces to pounds. In other cases, the process of globalization on the Internet allows for the

genesis and germination of ideas that definitely helps authors put together their ideas as well as complete a paper on this subject or not.

Let me give you an example. I was interacting with Prof. Dyatlov of Novosibirsk when I mentioned an idea. He responded that he would not talk to me for a week because he had to go outside to kill a bear! Now, I know some Russian climate conditions and regions are different from here in the U.S. and I guessed that it was totally feasible that a Russian would go out and shoot a bear! It must be some very tough country! Anyway, it was his way to say that he needed a week to right a paper based upon my suggestion. This is commonplace in a wireless world and we need to take advantage of it by forging new relationships and making technical progress.

To answer the question, however, I found myself more entrenched in the process of running a Conference. I also had to spend considerable time with new authors to see if we could develop new theories on things like the change in gravity that was influencing the two Pioneer spacecraft and if a new gravity law was really required or not. Some efforts were fruitful while others needed either rethinking or considerable refinement. It turns out that the effects were seen when the spacecraft sensors were turned off. The same amount of current was used; however, it was now expended heating-up a plate in the rear of the spacecraft where the radiated energy acted as a minor form of thrust which, if unaccounted for, looked like a change in the Newtonian inverse-square gravity law.



Dr. Giorgio Fontana: Italian physicist, BPP theorist, and HFGW Conference presenter.

As a flaw on my part regarding these Conferences, I should have delegated more of this responsibility to my other session chairs who were also getting involved in similar issues as well. This was because of my concern to maintain high quality as well as having authors present technically relevant information.

AAG: Historically speaking, I have to plead a bit of culpability for American Antigravity from 2005 forward -- we've been publishing the conference abstracts with links to the AIAA journal, and trying to build a library of interviews & research papers to try and support the STAIF effort. Do you think that any of this has been helpful, and does it bode well for the possibility of outside assistance in future conferences?



Lockheed Space: STAIF 2005 Nuclear Propulsion model.

Murad: Basically, the wider the distribution of papers, in my view, the better. Some of these papers have extremely unusual ideas that have long-term implications. Moreso, others focus upon the need for extensive research programs. One change in format was the hope to get more papers involved in experimentation and fewer papers on theories. However, this is sometimes outside of your hands because it all depends upon what authors will submit. This is something that you, as a conference chair, cannot predict. It requires sending out e-mails to different people to solicit contributions. Thus, a

Conference Chairman requires an extensive contact list where he could rely upon contributions.

AAG: Speaking of media, Jane's Defense Weekly Editor Nick Cook seems to have reported on both Section-F and the HFGW Conference, and American Antigravity is attempting to make an impact at the 2006 Conference by actually filming interviews. We've also heard rumors about the possibility of live broadcasting at future events, to help educate the larger aerospace community about this research. Can you comment at all on the media interest, and how do you see that interest growing in future conferences?

Murad: I think a live-feed at a conference, if it does not disrupt the proceedings themselves, would have extreme value as well as becoming a learning tool for the next generation of engineers and scientists. Giving a technical paper is not easy and requires quite a bit of effort. Bob Baker, because of his age, can give a paper almost at a moments notice. Others, such as myself, need to continually review a paper and memorize phrases and you also need to think about the types of questions that would be asked. You also need to consider how you would answer specific questions. Some people in the audience, which also includes reviewers, can raise extremely unusual points that may or may not cause your analysis to unravel almost instantly right before your eyes...

A live feed can prepare people for such outcomes. I remember giving a paper when the light bulb on the projector blew and there were no available spares. What do you do and still keep within your given time limit?



Nick Cook: Jane's Weekly editor & author – HFGW & STAIF attendee 2003 through 2005.

AAG: So we've only got a couple of weeks left until conference #3 gets underway on February the 12th. Given two successful sessions so far, and a 3rd nearly complete, what kind of trends are you seeing for this conference?

Murad: It is always difficult to estimate or predict what will happen at a conference. It can be amusing and a surprise. You may meet somebody that could, with a few words, give you a host of brand new ideas to think about. Last year, several people sat me down to talk about a potential paper for reviving the Single-Stage-to-Orbit concept that was cancelled with NASP. They presented an extremely interesting idea where the craft would use an Aneutronic reactor as a major component of the propulsion system. This is an exciting option and opens a whole host of new technology problems where the vehicle could deliver a large payload almost to the Moon... All in a single stage vehicle!



Boeing SNAP: A real-life nuclear reactor at STAIF '05!

AAG: Now as the presence of the STAIF conference expands, do you think that it will lead to additional funding for these projects?

Murad: Most definitely, yes! The exposure has got to make such an impression. It may not be obvious but several interesting situations have come about. In one case, an

individual made pitches in the middle of snow storms last year to various government laboratories and agencies. No one would fund him. The Chinese are now funding him! This is an American embarrassment but science must move on and people with funding authority need to understand that people such as Paul March who are spending far more than \$20,000 of their own funds to advance a dream into a concept such as mass fluctuation propulsion have brought this technology to a TRL of 4 all without any government funding. One paper describes a future experiment where a similar device will be placed in a vacuum chamber. This will raise the TRL to 7 or 8 and the thrust levels are an order of magnitude greater than ionic engines without any exhaust products. Imagine that these inventor/scientists have brought a concept together, made it work, and it exceeds ion thrust levels that have been developed over four decades! That is really exciting stuff! The Millis point of view of propellant-less propulsion is definitely a reality but funding is either minimal or non-existent.

AAG: On the subject of trends, I shouldn't neglect the research itself: how have things evolved since the days of the early AIAA papers? Has there been an evolution of ideas in the 3 years since the HFGW Conference? What would this say about the rate at which this research is moving forward in general, and is it an indicator of potentially larger social trends?



The Future: STAIF will continue to showcase cutting edge technology.

Murad: In my view, gravitics should become an acceptable technology. It has advanced considerably from its genesis during the HFGW Conference to the STAIF Conferences three years later. Unfortunately, most of this was also without any government funding. This, in my way of thinking, is not the “American” way. These people are doing good and honest work and should be rewarded for their efforts. Moreover, their contributions to National Defense and Security as well as commercial applications are obvious.

AAG: STAIF is a formal, rigorous peer-reviewed conference, but do you foresee any future presentations by the larger, less rigorous open-source community? Inventors often have a tough time writing formal scientific papers, but often have great ideas. Any way that they can be included in future conferences, or is that perhaps a venue for some type of post-conference gathering?

Murad: We welcome these individuals with open arms. We will even help them put their paper together giving value-added comments and judgments as long as a clear scientific methodology is used. The basic issue, however, is that the inventor has to understand and accept these changes. Once a paper is composed, it then goes through a peer-review. Here, the paper may get accepted or rejected.

I would also recommend that getting a college degree is also helpful. In one case an individual submitted a great abstract but the paper did not have any value. Later I found out that the author did not have a college education. He had to realize that putting something in a technical paper does not automatically mean it is true or is the truth. Certain things have to be included in papers from references and equations and a logic should be pervasive that is almost legal in nature. Interestingly, the interaction had convinced the individual to go back to college to get an education.

Paul Murad serves as the chairman for “Section-F” of the UNM ISNPS STAIF conference, dealing with advanced concepts in breakthrough propulsion physics. His formal education includes a Bachelor of Science in Mechanical Engineering (BSME) and a Master of Science in Aeronautical Engineering & Astronautics from the New York University School of Engineering.