

# SIGMA

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## PARSEC 2009 Winter Solstice

### Holidays Party



## Presidential Musings: Didactic Science Fiction

### Eric Davin

When Isaac Asimov was nine years old, in 1929, he worked in his father's Brooklyn candy store. The store also carried a lot of magazines, both slicks and pulps, many of a sensational nature. Isaac's father, Judah, did not allow Isaac to read such lurid material, as it was "cheap literature," and would rot his brain.

Then, one day in July of that year, Isaac noticed a new title among the magazines. It was the August issue of *Science Wonder Stories*, the third issue of Hugo Gernsback's new science fiction magazine. Isaac had never seen a science fiction magazine before this, and what caught his eye was the word, "Science." He knew, he wrote in his Introduction to *Before the Golden Age*, that "science was considered a mentally nourishing and spiritually wholesome study. What's more, I knew that my father thought so from our occasional talks about my schoolwork.... and the word 'science' gave me the necessary leverage.

"I picked up the magazine and, not without considerable qualms, approached my formidable parent.... I spoke rapidly, pointed out the word 'science,' pointed to paintings [by Frank Paul] of futuristic machines inside as an indication of how advanced it was....," and his father gave his permission to read the magazine, and others like it, as it obviously was *not* just cheap literature if it taught kids about "science."

In the beginning, that was also the belief of Hugo Gernsback, the founder of science fiction magazines. Hugo had long believed in science as the main, if not sole, means of human progress. In this, he was far from alone. By the 1920s Americans had fallen in love with science and that decade witnessed the beginnings of the exponential growth in American fascination with the subject. It thus became an age when Americans built museums of science which looked like cathedrals.

And it was an age when Americans also began turning dry and factual science books into bestsellers. Indeed, the first science book to make the *Publishers' Weekly* top ten bestseller list came in

1924 with Albert E. Wiggam's *The New Decalogue of Science*. It wasn't the sexiest title for a bestseller, but perhaps it attracted the interest of people like young Isaac's father.

Because of his own interest in science, Hugo had long published a factual science magazine called *Science and Invention*, which found a ready audience in that science-hungry decade and became quite profitable. Being somewhat of a missionary, Hugo also published proto-science fiction stories in his magazine, such as "The New Adventures of Baron Munchausen," written by himself. In place of the fantastic devices of the original Baron Munchausen stories, in these new ones the Baron used wondrous scientific inventions to achieve fantastic results. Hugo hoped by such means to interest young boys more in science and invention.

Such experiments in fictional science proved so popular that Hugo entertained the idea of publishing an entire magazine devoted to such "science fiction," as Hugo was to call it by 1929. Thus, in April, 1926, Hugo Gernsback launched the world's first "science fiction" magazine, *Amazing Stories*, for the express purpose of using "science fiction" to teach science. The experiment proved so popular, and profitable, that by 1930 even Hugo was coming to see science fiction primarily as a form of entertainment, rather than education by proxy.

But the didactic urge in the science fiction universe remained strong down through the decades. Thus, over the years, there have appeared anthologies which have sought to teach myriad topics via science fiction: anthropology, sociology, psychology, what have you. *Political Science Fiction*, edited by Martin Harry Greenberg and Patricia S. Warrick in 1974, was about, of course, political science.

Science fiction has also been used to introduce teens to self-knowledge, as with Bernard Hollister's 1976 anthology, *You and Science Fiction*. In it editor Hollister used science fiction to view the human condition and selected SF stories that explored four big questions: Who am I? How do I relate to others? What kind of society do I want to live in? And what kind of world do I seek?

Science fiction has even been used to teach history. "Alternative history" is now a sub-genre unto itself with acknowl-

edged classics, such as Ward Moore's 1955 alternative history of the Civil War, *Bring the Jubilee*. And there are myriad anthologies taking this pedagogic approach to history, such as 1973's *Transformations: Understanding World History Through Science Fiction* and 1974's *Transformations II: Understanding American History Through Science Fiction*, both edited by Daniel Roselle. And, as might be expected, there have even been college courses using science fiction to teach history, using anthologies such as those by Roselle.

Nor has science, the original pedagogical subject of science fiction, been neglected. In 1996 Isaac Asimov, still in love with science, presented us with *Isaac Asimov Presents the Best Science Fiction Firsts*, which included the first science fiction to describe battle tanks ("The Land Ironclads," by H. G. Wells, 1905), solar power obtained via satellites ("Reason," by Isaac Asimov, 1941), a home computer ("A Logic Named Joe," by Murray Leinster, 1946), and a collapsed star ("Neutron Star," by Larry Niven, 1966), among other things. Nor has this approach yet run its course, as shown by Robert Bly's 2005 book, *The Science in Science Fiction: 83 SF Predictions that Became Scientific Reality*.

And science fiction is also used to teach, but of course!, science itself at prestigious universities throughout the land. Carnegie-Mellon University, home to the Robotics (a word meaning the study and development of robots and coined by Isaac Asimov, as he was never reluctant to tell you) Institute, has also been the place where, for the past decade, physics professor Barry Luokkala has taught his course "Science and Science Fiction" to in-coming freshmen in the Mellon College of Science. This year he opened an expanded version of his course to students at every level – and this month Dr. Luokkala will bring his traveling road show on the course to us. Hugo Gernsback would be happy to know that, in the 21st century, science fiction is still being used to teach science. See you there!

Σ

*(Editor's note: due to my own Internet access problems these last couple months, not all of the articles have been able to make it into issues in the timely manner that they deserve. Apologies to all who have had to wait for their submissions to show up. I am working to resolve this situation.)*

## Announcements

### Important Income Tax Information

This is your official notice that all but \$2.00 of your dues, if you are a dues-paying member, can be claimed on your income tax (long form) as a donation. For instance, if you paid \$15 (one membership), you can claim \$13. If you paid \$18 (two members, same address), you can claim \$16, and so on.

### February Meeting Art Show Entries

Amongst other presenters, Lawrence C. Connolly will be giving a multimedia reading (like the one he gave at Confluence 2009) for the PARSEC art show. For anyone else wishing to participate as well and have their artwork featured in the February art presentation meeting, please contact Karen Lun-Lutz at 412-668-0873 or by email at [renaissancewomn04@yahoo.com](mailto:renaissancewomn04@yahoo.com).

### Short Stories Sold, Go Larry!

Larry Ivkovich's short science fiction story, "In Darkness Linger," is in the just-released *Abaculus III* anthology from Leucrota Press; his short dark fantasy, "About Face," will be in the soon-to-be-released Scottish anthology, *Raw Terror*; and his science fiction short story, "The Pilgrimage," will be in the January, 2010 issue of the e-zine, *Writing Shift*.

### New Treasurer

The only change in PARSEC officers "elections" this year was Sarah-Wade Smith uncontested as Treasurer. Σ

## DAMN THE NEUTRINOS, FULL STEAM AHEAD: 2012, The Men Who Stare at Goats.

Bill Hall

No surprises: *2012* is pure disaster porn. Even at this late date, if you're going to see it at all, you may need to get to a Super-Saver just so you can get the proper big screen effect. This is an essentially silly movie, and it will no doubt look even sillier on

the small screen, but in a theater you can at least enjoy its panoramic “Oh crap, are we ever screwed now!” impact. This movie ushers in a new horror: looking out at a horizon and seeing that horizon getting folded back overhead, ready to crash down on you. Of course, an inhabitant of a Gerard K. O’Neill habitat, roughly resembling Arthur C. Clarke’s Rama, or Babylon 5’s interior, might just snort “Ha! I live with all horizons rising high over my head all the time.” On the evidence of this movie, I suspect that may take some getting used to.

The cause of all this? Neutrinos from the sun are mutating into new particles which not only affect matter but are overheating our core. In other words, this is impossible, so breathe easy. Personally, I find the casting scarier than the premise. John Cusack as our action hero? Danny Glover as our President? I’m also peeved that He Who I Am Most Often Taken For, Oliver Platt, is stuck playing the evil mastermind bureaucrat behind the survival project. I prefer Platt out of his depth but still pleasant, like in *Executive Decision*. But at least he and others – Chiwetel Ejiofor, Thandie Newton, Woody Harrelson – get to pick up another check. Some may bemoan this movie, but I take the opposite view: it shows how insane scenarios ranging from creationism to Velikovsky really are. I think the more we see of this, the more we think “Ehhh ... now I’m not so sure.”

A subtler problem is *The Men Who Stare at Goats* from director Grant Heslov, perhaps best known as Omega Sector agent Faisal from *True Lies*. I was probably doomed to a mixed reaction from the outset, as this is based on a book by real-life journalist Jon Ronson, and I think I like Ronson. In an interview, Heslov claimed to be genuinely intrigued by the prospect of non-lethal warfare and said that while Ronson considers it to be all blarney, Heslov holds out some hope. My problem being, I wouldn’t guess any of that from the actual movie. Ewan McGregor plays our fictionalized Ronson as an intense wide-eyed naif clearly skewed by personal issues, and it gets on my nerves that there’s so much invocation of the word “Jedi” in the presence of the pre-Alec-Guinness Obi-Wan himself. Jeff Bridges and later George Clooney pioneer a secret Pentagon project which aspires to develop psychic super powers but

winds up simply subsidizing patriotic hippies. (Personally I think there's mild comedy to be mined from the Pentagon seriously pursuing a "hafnium bomb," but oh well.) I think it all gets sloppy by the end, as the movie runs together Kevin Spacey as someone singlehandedly trying to bring back the infamous MKULTRA studies and McGregor's own predestined role in somehow redeeming the project. I also find it odd that you could show this movie with *Three Kings* and have yourself a George Clooney Liberates Innocent Muslims double feature. So I was only mildly diverted, and yet in the audience and on the Net I've come across people laughing their butts off at this, so I give up, you weigh the data and figure out yourself if you're up for this. But what if mutant neutrinos from the sun could boost our psychic potential and give us the non-lethal super powers to survive 2012? Hmmm ...  $\Sigma$

## Annals of Anime. VII. Mobile Suit Gundam Seed Destiny.

Barton Paul Levenson

Admittedly, the "mecha" concept – human-shaped fighter aircraft, usually shooting at one another but sometimes fighting with swords – is really, really stupid. I can't imagine any real aerospace force ever using such idiotic machines.

Ignore that. This series shines, especially compared to the various rather childish manga. It follows an earlier series, *Mobile Suit Gundam Seed*. *Seed* tells the story of the first Bloody Valentine War, so named because it started with a genocidal February 14th attack. *Destiny* relates the second Bloody Valentine War. God help you if you come in in the middle, because you will never, ever figure out what's happening. The narrative is not incoherent. But it is so complicated, so sweeping, so epic, to use a much overused word, that you have to follow it from the beginning to understand it. It depicts not only battles but also politics, kidnappings, assassina-

tions, friendships, love affairs, and the struggle of several main characters to do the right thing in a brutal, cynical world – if they can only figure out what the right thing is.

I haven't seen all 50 episodes yet, so I don't have the whole picture myself. The action takes place, I would guess, around 2200 AD (“73 Cosmic Era”). The Earth Alliance is fighting ZAFT, the latter based in several huge space colonies. Another major player is the Orb Union, a small but powerful nation-state on several islands near New Guinea. Much of the fighting takes place on Earth; some Earth nation-states are ZAFT allies.

Three types of people are involved. Regular humans, called Naturals, mostly live on Earth.

Coordinators, bioengineered to be superior to humans in various ways, mostly inhabit the space colonies (known, for some reason, as PLANTs). The Alliance considers Coordinators unnatural and wants them wiped out.

Extendeds are children secretly drafted by the Alliance and subjected to surgery, drugs, and brainwashing to make them commandos and berserker mecha pilots. Extendeds who don't develop right or do well in training are killed.

I'll just describe one of the 17 trillion or so major subplots. Asuka Shinn is a young ace mecha pilot for ZAFT. Early in the series he rescues a teenage girl, Stella Loussier, from drowning. When mention of death makes her panic, Shinn swears to protect her. Unknown to Shinn, Stella is an Extended. ZAFT forces later capture her and discover that she is dying-she can't survive long without medical support she can only get in the Alliance. She attacks ZAFT soldiers and has to be restrained, but in restraints, reverts to being a scared teenage girl. Again Shinn promises to protect her.

ZAFT intends to let Stella die so autopsy can illuminate how Extendeds work. Shinn finds out, rescues her, and turns her over to the enemy, saying he'll give her up if they swear to take her to some neutral place out of the fighting. An Alliance officer, Neo Roanoke, solemnly promises to do so.

In the next episode, Shinn is in the brig. Stella is healed, and Neo promptly orders her to pilot an Alliance superweapon, GFAS

X-1 *Destroy*. He tells her that if she doesn't take out all her targets, "The scary things will come back and kill us all. Even you, Stella."

Stella goes into berserker mode, pilots the superweapon and destroys three Eurasian cities, including Berlin. Alliance forces want to punish this area for siding with ZAFT. Shinn is released to attack *Destroy*. He almost succeeds when Neo paralyzes him by telling him Stella is piloting it.

With *Destroy* damaged and menacing mechas approaching, Stella begins to decompensate. Shinn radios her and nearly gets her to stand down. But she flips out and powers up a major weapons system. Before she can fire, Yamato Kira, a pilot from a small independent faction, gets in close and totals *Destroy*.

Shinn finds Stella in the wreckage. She says she loves him, and dies in his arms. Shinn howls. In a long, heartbreaking scene in the next episode, he weeps uncontrollably as he brings Stella's body to a lake where no one will find it, and watches her sink, telling her she's safe now, and no one will ever hurt her or make her afraid again. He determines to find and kill Kira, a former friend.

You can see Shinn's point of view. He truly loved Stella and saw her, correctly, as a victim. You can also see Kira's point of view. Whatever her level of responsibility, Stella was slaughtering huge numbers of innocent civilians, and had to be stopped. This kind of tragic conflict is typical of the series, and one of the things that make it very much worth watching. Σ

## OVFF 25 Con Report (Part 2 - Sat. & Sun.). W. Randy Hoffman

*(continued from the previous issue)*

For me, Saturday morning was completely consumed by writing my entry for the "Reach for the Stars" songwriting contest, so I missed Margaret Middleton's Guest of Honor concert and the concert by Karen Anderson, Poul Anderson's widow. (Her concert was sponsored by the Interfilk fund, which has been flying filkers around the world to regions where they haven't been heard for a long time now.) I feel bad about that, but I just ran out of time; at

least I'd been able to pick up Margaret's great new CD earlier. The contest had fewer entries this year than usual, but they were high-quality, and I was very gratified to win.

Tom Smith and Luke Ski ably represented The FuMP members in a dedicated FuMP concert that followed. They sang not only their own material, but also songs by Worm Quartet, Baldbox, Devo Spice, and others; it was a great moment of rapprochement between old-school filk and the comedic fan music self-identified as "dementia" (for its affiliation with the Dr. Demento radio show), and I appreciate the OVFF concomm for making it possible. When they wrapped up, Guest of Honor Mary Ellen Wessels brought 14 people on stage for her concert, which (I think) is an all-time high and was a major coup for the sound crew to successfully wrangle. I missed most of that set, sadly, but I wanted to try to get some real food and make it back to the hotel before the Pegasus winners were announced.

This plan didn't work. Dave Wheeler and I chose a restaurant called the India Palace, which turned out to be in the same overwhelmed strip mall I'd visited the night before, and so did a bunch of other people at the con; the restaurant staff were utterly unprepared for that kind of business on what would otherwise have been a sleepy Saturday night, and we waited a solid hour from the time we placed our order until we were served. The lamb dish I had was very good, and Dave liked his entrée as well, but by the time we got back to the con, the Pegasus Banquet and the awards announcements were both over. Congratulations to the winners:

Best Filk Song: "The Wreck of the Crash of the Easthill Mining Disaster" by Brooke Lunderville

Best Classic Filk Song: "Still Catch the Tide" by Talis Kimberley

Best Performer: Heather Dale and Ben Deschamps

Best Writer/Composer: Vixy & Tony (Michelle Dockrey and Tony Fabris)

"A Little Bit Country" Song: "Stray Dog Man" by Bill Sutton

"A Little Bit Rock 'n' Roll" Song: "Six-String Love" by Vixy & Tony

Lots of people dressed up in their finery for the Banquet, some outfits being Halloweeny and some being just spiff. In particular, Duane Elms and his wife as an old-west sheriff and his missus were truly impressive.

The Interfilk auction came next, but I don't typically attend those, and I went looking for one of the open filks that were happening in various side rooms. I found one and joined in for about an hour, past the point at which it turned into a "theme filk" that was (IIRC) about "story songs." Eventually I moved to the hall filk, but it wasn't as good as it had been the night before; a lot of people had decided to participate in the open filk in the main programming room instead. Still, Saturday night's open filk contained the high point of the convention for me: Batya Wittenberg performing her amazing and heartfelt "nerdcore" rap "Creatures of Dream" for Luke Ski and the other folks who were still present at that point. That song, despite being a rap, just blows my mind and is almost certainly going on my Pegasus Best Song ballot next year.

At a little after 1:30 AM, I headed to another of the side rooms to be part of the audience for a video recording of a live performance of Renee Alper's autobiographical one-woman-in-a-wheelchair musical "Non-Vertical Girl", about the challenges she's faced in decades of coping with psoriatic arthritis and the aftermath of a terrible vehicle accident. One might think one would have to grit one's teeth to get through such a thing, but Renee's play is thoughtful without being maudlin, uplifting, and even highly amusing in spots. I salute her and I hope the recording turned out OK!

Sunday morning was another contest scramble, this time to finish my entry for the Iron Filker "Starstruck" songwriting contest. (They didn't give us the topic until we arrived at the convention.) I almost didn't finish in time; as it was, I had to ask them to bump me from the first performance spot to the last. My song "Splat," about a starship that gets a micro black hole stuck on its windshield, went over well but didn't win anything, and that's OK. I was very pleased that Peter Alway's entry won; he just gets better and better as a songwriter, and I'm thrilled to see him coming into his own.

The zany improv exercise "Whose Line Is It, Anyway?" followed, with Tom Smith, Seanan McGuire, Bill Roper, and others.

They were hysterically funny, but watching improv comedy gives me sympathetic nerves (because I just can't do improv, I guess), so I could only pop in for brief intervals. After that came the Farewell Jam, with huge numbers of instruments making music together; again, I'm not really suited for such things, but I did stop in long enough for major highlights such as Debbie Gates and S. J. Tucker leading a hyperextended and hyperenergized drum-centric number that literally rocked the house. Dave Wheeler and Ben Newman and I headed out to the Dead Dog Dinner afterward at BD's Mongolian Barbecue; it was delicious, with a wide selection of meats, noodles, veggies, sauces, and spices for grilling up on their giant hibachi. (Somehow, though, the idea of using "cheesy brats" in a Mongolian barbecue seems a bit, I dunno, nontraditional...)

The Dead Dog Open Filk started up soon after we got back; I chose to set up shop at the "official" location in what had been the dealers' room, but despite a brief interval in which Peter Alway set up his telescope in the parking lot for us to look at Jupiter and its moons (thank you, Peter!), most of the "real action" that night turned out to be at the hall filk, and it was a little disconcerting to watch people slowly slipping out and "defecting" to that locale. I was debating whether to break down and do so myself, but the sore throat I had had all day started getting much worse at that point, and I decided to bail on the con entirely and head for home, 12 hours early. I kept having to stop and sleep, so it took me until 5:30 AM to get home, but I made it.

On the whole, it was an astoundingly good con with too much going on for anyone to see and hear all of it. I think my only disappointment was the fact that the open filks seemed to be "unbalanced"; in large part, energy, enthusiasm, and memorable moments seemed to be distributed to certain groups and locations rather than others on a "feast or famine" basis. I realize this is partially just what naturally happens when open filks compete with each other for participants, but I noticed it more at this con than most others. That small concern aside, I'm eagerly looking forward to next year, and I hope the new hotel will give rise to a whole new set of great traditions!

## Book Review: The John Varley Reader: Thirty Years of Short Fiction

Ann Cecil

John Varley has a long illustrious career: 30 years of notable works, many award winners. He burst upon the SF scene with the *Ophiuchi Hotline* in 1977, a first novel that made it all the way to the Hugo list!

This collection, a retrospective featuring his best shorter work from 1974 through 2004, is a well-selected set, garnished with introductions that feature glimpses of his personal life as well as inspirations for the stories. While his introductions are not as mind-blowing as Ellison's, many of them relate interesting incidents from his life and give the reader a strong sense of his personal perspective. For instance, I had not realized Varley actually lived in San Francisco, on Haight-Ashbury no less, in the storied days of the Summer of Love. He moved to Oregon shortly afterward, seeing the downside coming.

The centerpiece of the book is "Press Enter" which won Hugo and Nebula awards. I always found it oddly unsatisfying, though it is unquestionably well-written. On the second read, I realized why: it is a very well-done evil ghost story, with the ghost dressed up as technology. It develops the characters memorably (though I have some trouble believing the Viet Nameese girl who has risen from the streets to become a respected computer guru). I could come up with suggestions for how the 'evil program' got into the computer – but the story clearly means you to see an evil presence, a rogue computer turned Satan and threatening the world.

Early Varley stories incorporate a good deal of stress on sex changing, the ways in which being able to switch genders will change our psyches and inevitably change some of the way we live and make decisions. Somehow the situations are more memorable than the characters, in many of these. The stories that stay with me, that are my favorites, are the ones that feature Anna-Louise Bach, the tough cop who lives on the Moon. I was amazed to realize that the first story, *The "Barbie Murders"*, was published in 1978. And I was pleased that this omnibus closed with a Bach story, written in

2004. I found her a memorable and admirable character, coping with a future that only barely resembles ours, and yet reacting humanly and perceptively to the challenges of Varley's less than pretty future (Humanity has been displaced, kicked off Earth and forced to make do with the Moon, Mars, and artificial habitats).

Varley, like most of the SF masters, tends to write in arcs, with stories connecting in theme and place, if not featuring the same characters each time. His strong sense of characterization carries the reader past some thinness in the science, though in general his stories are well grounded. One of the most interesting is his handling, in "Tango Charlie and Foxtrot Romeo", of what is essentially a 'no-win' situation: instead of turning it into a cause celebre, ala the "Cold Equations", he makes it a sweet and sad but realistic view of life and the choices we all face. It helps that the story features Bach, my favorite character.

The anthology was well worth buying, both for the additional insights into Varley's personal life and choices (since he doesn't attend conventions much, I've never met him in person), and for the collection of really good stories. Σ

## It's About Time

### Henry Tjernlund

In catching up on my reading backlog stack, I found an issue of *Scientific American* (July 2008) featuring an article on the structure of space "The Self Organizing Quantum Universe." The researchers of the article wrote a computer program to try and simulate the creation of a universe, or a very small portion of one. They had their program make pieces of space in the shape of triangles. (This is a technique often used in computer games – triangles being the simplest surface polygon. Gaming graphics hardware are sometimes rated in how many triangles that they can render per second.) The program then (I imagine in some quasi-random way) attached each newly created triangle to the tapestry of the previous ones. After running many simulations, they found that what generally came out was not a nice, well connected, flat space

continuum. Instead the results were often fractured and twisted in on itself, much akin to a crumpled ball of shredded paper. The is not at all like what we see in our Universe.

The article explains that when they made one very specific addition to the simulation the results changed. What they did was to add an extra item of information to each new triangle giving it a sort of “orientation.” When the program had to make sure that the orientations of the triangles had to match up, they started forming more well-connected and flattened structures. The researchers likened this extra alignment information to something like a “cause and effect” property. To me it seemed that the alignment property that they described was that of an “arrow of time.”

Is that maybe why the 4th dimension of time seems so different from the other dimensions of space? Does one dimension need to set an orientation so that there is a smooth uniformity to the structure of space-time? We can move so freely in the three spacial dimensions, but are relentlessly pulled along in the one dimension of time. We can't even stand still, let alone travel backwards, so far as we know, although some philosophers claim that the perception of the time is merely an artifact of our consciousness.

If this simulation has some bearing on the real Universe then why 4 dimensions with exactly one of them being oriented? Well, Nature tends to do things in a minimal way. Electrons in atomic shells tend to seek the lowest available level emitting photons of energy in the process. Water flows downhill where it needs less potential energy to stay. Heat moves from places where it is hotter to those where it is colder, increasing the overall entropy. Nature does with the least that it needs. So maybe 4 dimensions is the minimum that it needs as well to make a nice, neat fabric of space-time. Maybe only one dimension needs to be aligned to keep the structure of space-time smooth and well connected. Perhaps even one additional aligned dimension might make things too complex, or even make it go wrong somehow. So the optimal minimum is what we have, no more, no less, the Goldilocks’ “just right” amount. Interesting that maybe yet again, almost 100 years after Einstein's theories of relativity, an explanation of yet another phenomenon of Nature is based on an application of geometry.  $\Sigma$

# PARSEC meeting schedule

**January 9, 2010 – 1:00 PM to 4:45 PM**

Topic: Using Science Fiction to Teach Science, with Dr. Barry Luokkala, CMU.

**February 13, 2010 – 1:00 PM to 4:45 PM**

Topic: Artists' Show & Tell, with an All-Star Cast!

**March 13, 2010 – 1:00 PM to 4:45 PM**

Topic: Confluence Topics, led by Ann Cecil.

All meetings held at the Squirrel Hill branch of the Carnegie Public Library, unless otherwise noted.

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## SIGMA is published by PARSEC

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Cover photos by Karen Yun-Lutz.

Send articles & art submissions to [sigma@spellcaster.org](mailto:sigma@spellcaster.org)