

Stem Cell Medicine Jumps to Warp Speed: The Flight of the Phoenix II

By

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As a boy I was enthralled with the premier and run of the original visionary TV series “Star Trek” (1966-1969). Naturally I welcomed the spate of movies and the various incarnations such as “ST: Deep Space Nine” and “ST: Voyager.” Like many baby boomers, Gene Roddenberry’s optimistic science-fiction on-screen world inspired some aspect of my subsequent pursuits in the sciences. If you were similarly influenced, good for you!

Whether you are a fan of Star Trek or not, I hope you saw the movie, “Star Trek: First Contact” because it bears directly on what I am about to share.

For those who have only a nodding acquaintance with ST, the focus of this particular movie is on the launch and successful flight of the first warp (faster-than-light) space craft dubbed the “Phoenix” on April 5th, 2063. In the ST world, this ship is the brainchild of a maverick (and often inebriated) genius named Zefram Cochran, who pilots the inaugural flight despite a deep-seated dislike of flying.

Following its launch and achievement of warp speed, the Phoenix’s flight is detected by an alien (Vulcan -- remember “Mr. Spock”?) vessel which happens to be passing through our solar system on a routine scientific survey. The Vulcans trace the Phoenix to its launch site and wind up landing near-by and disembarking. This epochal “first contact” meeting, of course, decisively retires the notion that our species is alone in the universe and sets in motion societal and other changes that culminate in the birth of the “Federation of Planets”.

So what does this have to do with the price of corn? I’ll tell you.

In-a-nutshell: I have the good fortune to be involved with a group of stem cell researchers which is headed up by a sober version of Zephram Cochran, Chauncey B. Sayre. What Chauncey and his bench crew have basically come up with is the biological equivalent of warp drive. That is, he has pioneered literally revolutionary technology that truly is poised to send stem cell (regenerative/restorative) medicine into high orbit. These patent pending brainchildren of this modern day Dr. Cochran are now operational in Mexico, where the regulatory atmosphere allows warp trips much more readily than here stateside.

What makes this technology so unique? Of course, I cannot divulge proprietary information as this would “give away the store” to those who would capitalize on this work, most likely at the expense of those we at Weller Health Institute intend to benefit from it. But I can share the gist of these advances:

- ❖ Chauncey has pioneered a way to take various bone marrow stem and precursor cells including [Bone Marrow-isolated adult multilineage inducible \(MIAMI\) cells and other bone marrow derived multilineage cells](#) and program them to seek out specific tissues or organs in the human body and then take their cue from their environment (niche) and become neurons, heart cells, stomach cells, or what-have-you.
- ❖ He and his team have created a way to take liver or skin cells and transform them into pluripotent stems (“[induced pluripotent stem cells](#)” or iPS in technical parlance). Now, mind you, many major research centers have done this very thing, typically by activating specific genes in the liver or skin cell using viruses or what one might call “harsh chemicals” (Chemicals that can cause changes in the cell that might lead to it becoming cancerous). What makes Chauncey’s approach so different is that his method does not employ viruses or “nasty chemicals”.
- ❖ Chauncey invented a technologically innovative, sophisticated method for getting cells to replicate quickly but without “running wild” (as is the case with cancer). Weller’s patent attorney, who has 30+ years experience in the patent field and was a patent examiner with the [US Patent & Trademark Office](#) (USPTO) in Washington, DC for many years, stated that this technology is indisputably the most revolutionary he has ever seen.

Of course, these world class inventions are discoveries and the unique cells they give rise to are only part of the story. I, in my work as a biological theorist, provide input to Sayre and have helped tool together clinical protocols that complement what his technology has made possible. I tend to think in terms of systems biology and systems interaction – the interplay of physiology, genes, biochemistry, etc. with the disease-specific and targeted cells Dr. Cochran’s...eh...Chauncey’s technological brainchildren spawn. My objective is to ultimately help make target patient disease populations microniche or biological soil a healthy, supportive one for cell engraftment and proliferation.

These patent pending technologies and supportive regimens will ultimately be licensed to various clinics and hospitals, most likely in countries whose health regulatory agencies fast track getting discoveries from the lab into the clinical environment.

To me, this confluence of inventions, discoveries and complementary protocols constitutes the biological equivalent of Star Trek’s fictional warp speed technology. In honor of this, I dubbed this marriage of bench and clinical innovation the “Phoenix II.” In my mind’s eye, I can’t help but conjure up images from “Star Trek: First Contact” of the [Phoenix lifting off from its launch pad](#) and soaring into the heavens. And like the Phoenix of Star Trek: First Contact fame I see a crew of strapped into the cockpit of the warp ship – Chauncey Sayre, Weller Health Institute resident Larry Howard, and myself.

It is a quaint and perhaps even melodramatic bit of mental imagery, but I think the analogy holds up. What the Phoenix II stands to do for medicine – for turning the tables on many insidious and possibly later on even aging itself – is very real and no pipedream or fantasy. Have your doubts? Keep your eyes on what unfolds during the next two years or so. I fully expect skepticism to give way to unbridled enthusiasm and even astonishment in the not so distant future.

And just as the fictional Dr. Cochrane won acclaim and the highest awards available in science in the world of Star Trek, I fully expect to see his real life counterpart Chauncey Sayre standing on the podium in Stockholm on day to formally accept his due honors. He may even buy a flask, fill it with whiskey, and take a swig on stage as a salute to his fictional counterpart.

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<http://www.washingtontimes.com/news/2006/sep/21/20060921-085727-1546r/> - "Amazingly, at around the same time, 14-year-old Chauncey Sayre had a similar epiphany. When he thought about his father, who was much older than his mother, he wondered if the body might be able to repair itself to give people more time with their loved ones. He theorized that there must be a cell within the reproductive tract that would remain unaffected by the aging process. Otherwise, how else could humans give birth to normal, healthy children, even as they age? What he described in an essay at the time -- a treatise he still has to this day -- is a stem cell. More specifically, a germ-line stem cell."

Among Chauncey's many patents: 20070142781 - [Microinjector chip](#) -

<http://www.freshpatents.com/Microinjector-chip-dt20070621ptan20070142781.php>

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