

# FUTURE *takes*

*Your international platform for future related issues*

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## *Trade and National Security Implications*

### IPv6: the World's New Internet Protocol — Is America Ready to Defend its Leadership of the Internet Universe?

*Mr. Joel B. Coulter, President, Mobile Sciences Consortium, LLC*

*Dr. Samuel Lee Hancock, CM, President, Hancock International and Executive Director, The Eurasia Center*



*Hancock*



*Coulter*

Today's Internet is not an endless frontier. A new protocol, IPv6 is the next evolution, offering significantly improved security and interaction with mobile devices. This "new" protocol was actually developed several years ago to meet growing US and international needs for IP addresses as the proliferation of Internet-capable devices in Asia, India, Europe, and Australia shrinks the pool of available addresses. In addition to providing a substantial increase in IP address availability, IPv6

offers greater security, easier multicasting, interactivity with mobile devices, and the ability for new kinds of applications, including surveillance.

However, as a result of other investment priorities and general comfort with the current IPv4 Internet, the US Government and most US businesses have not assumed the leadership role for the next generation internet IPv6. This absence of leadership and

*See IPv6, continued on page 11*

As a member of the World Future Society US National Capital Chapter, you will receive **FUTUREtakes**, announcements of all chapter activities, and discounts at chapter-sponsored events. If you would like to join us, please contact:

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## *Air Force 2025 Shines Through Again!*

### The Future of Mainstream and Non-Traditional Religion

*By Dave Stein*

We're living in the "how to" age! One can readily find "how to" books on almost any subject these days, at least in the USA. (Readers from other parts of the world, please educate me on this point.) At the same time, many people are searching for something at a deeper level, as evidenced by the proliferation of New Age religious and spiritual paths, with a number of peo-

ple trying one after another in their quest for personal and spiritual fulfillment. In this, they are aided by the availability of information – perhaps information overload (sound familiar?) – and in many parts of the world, societies that support religious freedom. What does this era of rapid change hold for this quest – that is, for one's search for meaning and fulfillment?

*See Religion, continued on page 7*

# from the CHAPTER PRESIDENT

*Dear Members of the World Future Society, US National Capital Region and friends around the World,*

I wish to congratulate Editor-in-Chief David Stein and his entire staff for another great edition of **FUTUREtakes**.

As I stated in my very first President's Message, "I am an amateur futurist." What exactly does this mean? And does it mean exactly the same to all amateur futurists in our ranks? Let me know by replying to me via my contact email on our website.

My impression of being an amateur futurist is first that I did not attend a university to study futurism nor have I even taken any independent classes on the subject. Secondly, I don't work as a futurist. Yes, I do strategic planning and goal setting as part of my job. It is, however, not enough of my job to label me a strategic planner and certainly not as a futurist.

I do attempt to understand how my present day actions will result in intended or unintended future events. I analyze and work through multiple alternatives. I am a holistic system-wide thinker. I would also say that while I do tactical managing I do predominantly view research, analysis and problem solving for their future impact and not for "today's fires."

Is this a good thing? I think so. But then solving problems for today is also important. As president of the WFS, US Capital Region, I must enable and hopefully lead our board of directors in dealing with current as well as future issues. We, as a board, deal with many day-to-day issues such as preparing the last-minute details for an evening program, a lunch event or a workshop. We monitor our finances and membership numbers; always attempting to improve our bottom line. We need to also manage our chapter strategically. We deal with our chapter's future success by coordinating our program offering over a multiple year

span. This way, we will not bore you with the same programs, but always give you a reasonable variety of programs while remaining on the cutting edge on topics of current interest to futurists.

Currently, we have investigated expanding our board of directors and its support staff. This is being done to improve our current offerings to you while greatly improving our future value added to you our members. Over the next few weeks, our website will display a series of volunteer staff support positions that we hope to fill. A description of why these positions are important will also be included. We ask that you seriously consider volunteering. We need your help.

Here is one example of a volunteer need. Our **FUTUREtakes** magazine has an editor-in-chief who leads his staff by setting the overall vision and direction. The assistant-editor-in-chief assists him with overall planning and goal setting. The managing editor approves the layout and produces the magazine. Currently, **FUTUREtakes** has almost 20 editors including international editors. We are also working on harnessing the energy and insight-



Russell Wooten

fulness of student editors.

It wasn't always this way and **FUTUREtakes** wasn't always as good as it is now. Dave Stein started with only Dave Stein. We struggled with good editors but a short supply of them. We questioned if we would ever be confident of sustaining an adequate content for **FUTUREtakes**. As Dave increased his staff, he was able to more fully concentrate on his strategic vision of **FUTUREtakes**. That of course, included bringing in the proper day-to-day support to make it all happen. Now it is time for our chapter to grow and bring you more value. If you help, we can all do this together.

Thanks,

**Russell Wooten**

## Future (Re) Takes

By Russell Wooten  
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The May-June 2003 issue of *The Futurist* featured an article by H. Paul Shuch, titled, "The Search of Extraterrestrial Intelligence." Here is a short review of that article and an update.

In 1959, a young radio astronomer, Frank Drake, hit upon a seemingly ludicrous idea. Why not search for intelligently generated signals from the stars? He cautioned himself to do so quietly; this science fiction search might well be professional suicide. He

assembled a crude one-channel listening station and began his search on two nearby sun like stars. Also in 1959, two Cornell professors, Giuseppe Cocconi and Philip Morrison, proposed the very same search in the scientific journal *Nature*.

Frank Drake's first detection of intelligent life from other space was a classified military aircraft. Intelligent, extraterrestrial – you decide!

Today, the search for extraterrestrial intelligence (SETI) has emerged from the fringes to the scientific mainstream. In 40 years, thousand of people have conducted hundreds of searches for our cosmic companions, scanning billions of microwave and

See *Future (Re) Takes*, continued on page 17

# FUTUREtakes

**FUTUREtakes** is a publication of the World Future Society US National Capital Chapter, based in Washington DC, USA. In addition to the local chapter, **FUTUREtakes** serves other interested professional societies in the greater Washington DC metropolitan area as well as other chapters of the World Future Society worldwide.

**FUTUREtakes** welcomes contributed articles that serve one or more of the following objectives:

- Contribute to a reasoned awareness of the future and the importance of its study,
- Advance serious and responsible investigation of the future,
- Promote the development of methods for the study of the future,
- Increase public understanding of future-oriented studies,
- Facilitate communication and cooperation among organizations and individuals in studying or planning for the future.

In addition, **FUTUREtakes** publishes book reviews, future studies exercises, discussion threads, letters to the editor or equivalent correspondence, and summaries of chapter programs. All published material will normally follow the guidelines delineated herein for contributed articles.

To promote free dialog and the exchange of ideas on matters concerning the future, **FUTUREtakes** does not align itself with political entities including but not limited to political parties, political action committees, or political platforms. In addition, **FUTUREtakes** does not advocate particular ideologies or political positions.

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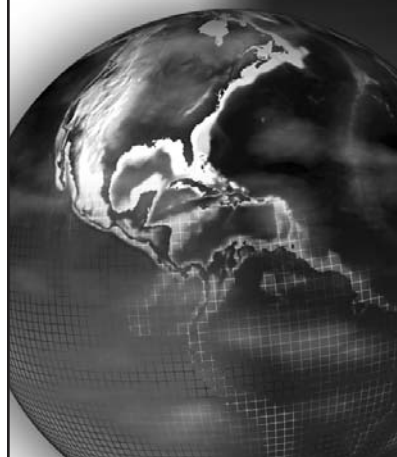
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## Give Us Your Perspective on the Future



We are looking for people with vision in any area of interest or expertise to write a future-oriented article for **FUTUREtakes**. Your vision may come from personal experience, reading, lecture notes, or a topic that in your view is important for the future. Please share your thoughts with our chapter members, preferably in 1000 words or less. Send your contribution to [futuretakes@cs.com](mailto:futuretakes@cs.com)

# Looking Forward...and Backward

By Jay Herson

Essays looking to the future are as common a January occurrence as the appearance of storefront tax preparation services. Writers looking 50-100 years hence are typical but *Harper's New Monthly Magazine* once published an essay that looked forward 1144 years. Even more amazing, the essay was published in January of 1856. It is appropriately titled "January 1, A.D. 3000". Reading this essay today teaches us as much about antebellum America as it does futurism at that time.

The narrator wakes up in 3000 A.D. and is told that he is in the world capital, Peerless City, Isle of Borneo. National divisions were eliminated many years ago. What used to be the United States of America is now called the Republic of United Interests, a region devoted entirely to the financial services industry. By contrast France makes the gloves, Timbuktu has the monopoly on tailors and milliners. In Peerless City the shoemakers, tailors, painters, bakers, bankers, lawyers and doctors all have their own neighborhoods where they live and work. All houses are identical.

One of the USA's last glorious acts was conquering China in 2207 and Russia at about that time. The Emperor of China was made a Regional Postmaster and that of Russia was given a position in the Customs Office. During periods of war Paris was destroyed although there is still considerable evidence that it was a grand city.

For transportation people take the bomb ferry for shorter commutes. For long hauls they take the steam balloons. Peerless-New York in 1 hour 32 minutes, Peerless to Peking in 47 minutes. Railroad expansion became so prevalent that there was not enough room for agriculture so subterranean railroads became popular and were still in vogue in 3000 A.D. In most industries, like steam balloons, there are many competitors at first. Then companies pay people to use their service. Eventually only the competitor with the most money remains and a monopoly is formed which our 3000 A.D.

descendants found to be the most efficient form of business.

Alcohol, tobacco and certain foods had been outlawed for ages having been found to be "injurious to the human frame". At a restaurant the narrator finds 67 kinds of bottled water on the menu—spring water, rain water, water filleted by charcoal, stone or gravel, etc. He gasps when a bill for \$7.27 arrives for two bottles of water, padded by labor costs. Infant mortality had been reduced from 80% in 1856 to "only" 57% in 3000 A.D. This was accomplished by strict diets and specialized care for the first 15 months of the newborns life. At that time the infant's trade or profession is decided.



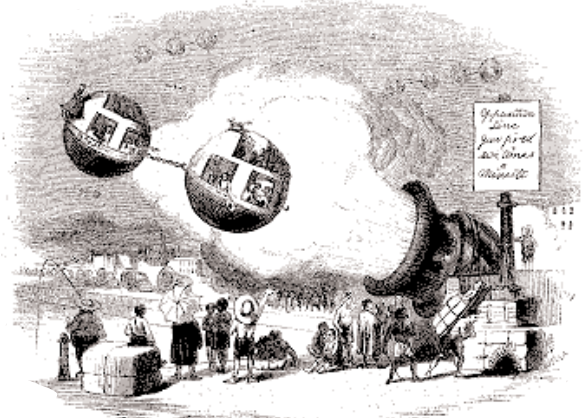
Herson

Marriage is arranged, not by families, but by the Secretary of the Marriage Department. For people concerned about their appearance surgeons can adjust the appearance of the nose and reduce waist size by as much as 32 inches.

A Universal Education Act ensures that all children get a complete education. There is some concern that college classes are still taught in Tibetan even though the language has been scarcely used since 2000 A.D.

Among the technology admired by the narrator—pipes for electric telegraph, heat, light, water and fresh air coming directly into every home; knives, forks and decanters all do their work "without human attachment"; coal is easily transformed to diamonds; time is instantly accessible from a ring worn on the little finger.

The main newspaper on Earth is the Everlasting Word which appears and replaces itself on paper continuously providing 3 miles of reading matter every 24 hours. The Word covers every possible subject and is now the main distribution channel for books. Photographs of a scene 10,000



Passengers in 3000 A.D. awaiting the arrival of a bomb-ferry.

miles away are instantly transformed to paper in the subscriber's home.

It is interesting what the writer could envision without knowing about electronics apart from the telegraph—mass transit, government intervention in health, robotics, plastic surgery, bottled water, China and Russia as world powers, and even internet-like news. Even the new railroad industry is seen to eventually move toward monopoly although this seems to strike the writer's fancy. There is much information about what the pre-Civil War writer does not write about—the environment, occupations other than shoemakers, tailors and painters, telecommunications (including television, movies), interplanetary travel, chronic disease and medical progress that can only reduce infant mortality to 57%. He/she is obviously affected by growing sectionalism which causes him/her to see a world without war and where every country has its role in the world order. The last holdout in ending nationalism is said to be South Carolina, curiously the first Southern state to secede six years before the essay's publication. Like many Utopians the writer fails to see that a world without problems is itself a problem.

Do any of our readers want to take a stab at life in 3000 A.D.? You can send your ideas/essays to [futuretakes@cs.com](mailto:futuretakes@cs.com).

The complete essay "January 1, A.D. 3000" can be found at <http://harpers.org/AD3000.html>.

Jay Herson is Managing Editor and a frequent contributor to *FUTUREtakes*.

# The “Rush Hour” is Neither – Will It Ever Be? The Future of Transportation in the Washington D.C. Region in 2030

*Synopsis of the May 24, 2005 dinner presentation, presented by a panel consisting of Ron Kirby, Gary Maule, Michael Huerta, and Patricia Nicoson (moderator) and hosted by the Greater Washington Board of Trade; summarized by Dave Stein*

Once again, the greater Washington DC region has distinguished itself by winning the “bronze medal” (third place) for worst congestion in the United States this year. The ever-lengthening commutes exacerbate the challenges of living in what is already a “not enough hours in the day” society, especially in large metropolitan areas. Not surprisingly, the Greater Washington Board of Trade, government officials, private organizations, and corporations around the region have made transportation their issue for the present in order to manage what is already proving to be a difficult future. A panel representing both government and industry shared their findings, insights, and projections on transportation in the local area at the chapter’s May 2005 dinner program.

## TOMORROW’S TRAFFIC JAMS – COMING SOON TO A HIGHWAY NEAR YOU!

The National Capital Region Transportation Planning Board (TPB) is preparing a 30-year transportation plan for the region, which is approximately 3,000 square miles and includes 4.5 million people and 2.8 million jobs, began Ron Kirby. The plan takes into account the historical trend of employment growing faster than the local population, with the consequence of jobs being filled by people who live progressively further from the region. From 1970-2000, population has grown 50% (from 3 million to 4.5 million), but employment has grown 87% (from 1.5 million to 2.8 million). The forecast from 2000-2030 continues this relative growth.

To accommodate the ever-increas-

ing number of commuters, planned improvements include construction of new roads, widening or other improvements of existing roads, and interchange upgrades, as well as new rail stations and other rail transit improvements. However, said Kirby, regulations prohibit planning that assumes that a given highway or other expanded capacity will be in place, if there is not a reasonable expectation of funding. As a result, only limited new road capacity is predicted. Furthermore, approximately 77% of the transportation funds are needed for maintenance, leaving only 23% for new road and rail capacity. With added pollution being another consequence of increases in commute times and number of commuters, Kirby also pointed out that pollution predictions are pessimistic, because when the planning office predicts auto pollution 30 years from now, they must assume today’s technology.

Added Kirby, the highway system won’t keep pace with growth. The projected increase in daily vehicle miles traveled, from 2000-2030, is 37% (from 109 million to 150 million). For freeways and arterial lanes, a 16% growth (from 15,300 to 17,600 miles) is forecast. This period will see a substantial increase in the “stop and go” bottlenecks on the beltway. Kirby also noted that large cities do not change their relative congestion rankings appreciably – it’s just that all cities get worse together!

The Metropolitan Washington Council of Governments has done a study of “what if?” scenarios. The specific questions: What

if job and housing growth were shifted? What if new roads or transit were built? How would travel conditions be different in 2030? Also, what are the key issues that land use scenarios might address?

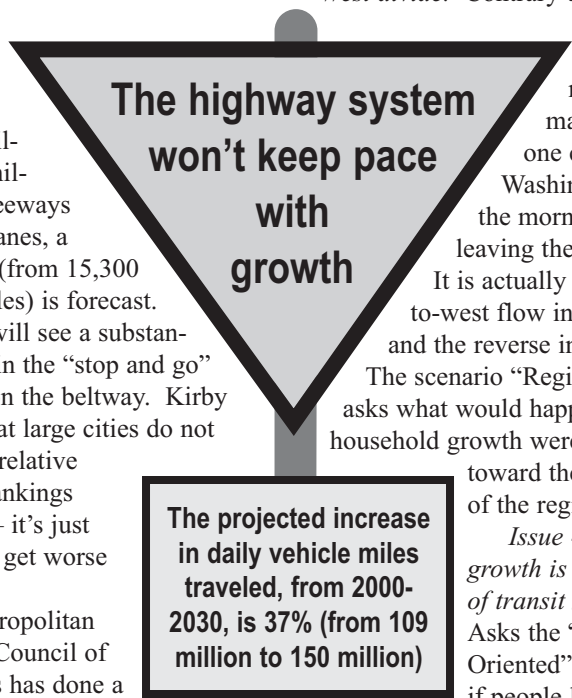
*Issue 1: Job growth is outpacing household growth.* As a consequence, the region must “import” workers from other states such as West Virginia and Pennsylvania. Asks one alternative scenario, “More Households,” what if more people who worked here lived here? In this scenario, growth in the number of households occurs in “regional activity clusters.”

*Issue 2: Workers are living further away from their jobs.* Most job growth is in the inner jurisdictions, whereas the growth in the number of households is primarily in the outer jurisdictions. Another scenario, “Households In,” explores the possibility of people living closer to their jobs. In this scenario, household growth is shifted toward the innermost jurisdictions. A variant of this scenario, “Jobs Out,” asks what would happen if jobs were located closer to workers’ homes. This scenario moves the job growth to the outer jurisdictions, closer to new housing.

*Issue 3: The divide is an East-West divide.* Contrary to popular belief, the congestion is not primarily a matter of everyone converging on Washington DC in the morning and then leaving the area at night. It is actually more an east-to-west flow in the morning and the reverse in the evening.

The scenario “Region Undivided” asks what would happen if job and household growth were shifted toward the eastern half of the region.

*Issue 4: Most growth is located outside of transit station areas.* Asks the “Transit Oriented” scenario, what if people lived and



## Transportation

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worked closer to metro rail, commuter rail, and bus stations?

Continued Kirby, the study then explores what would happen if land use changes are combined with better transit including bus rapid transit and light rail transit? The most dramatic changes in the study resulted from combing new transit with higher growth in households. The 16% increase in transit trips and 18% increase in pedestrian and bicycle commuting were accompanied by a 9% reduction in vehicle miles of travel per person and a 5% decrease in miles of morning congestion. However, the most recent baseline forecasts indicate an even greater imbalance between jobs and housing. To balance job growth in 2030, 2.9 million more households are needed. With 2.4 million more households projected for the greater Washington DC region, the shortfall is 480,000. The imbalance is greater in specific areas such as Reston and Tyson's Corner.

### **"WE'VE GOT ROOM FOR JOBS, BUT NONE FOR NEW HOUSING"**

So where will the workers come from, if not from the next ring of suburbs? Kirby discussed several possibilities. One would be more workers per household, but that number (presently 1.57) is now decreasing. Another possibility is an increase in the number of households within the Washington DC area and the surrounding suburbs. However, as he indicated, 72% of the households forecast for 2030 have already been in place since 2000, and another 13% will be in place by 2010 – leaving only 15% affected by the scenarios. Asks Kirby, what is the potential for redevelopment of the 72% – that is, converting dilapidated areas to new high rises? At the same time, he discussed the role of local jurisdictions in exacerbating the imbalance. Local governments are generally interested in attracting employers, thereby increasing the tax base, but they usually limit housing developments since they have less value from a tax base standpoint – and often one

reason given for limiting housing is an interest in preserving green areas!

### **BETTER LIVING THROUGH TECHNOLOGY**

Kirby concluded his portion of the program with a discussion of possible technology impacts. For example, he suggested that telecommunications can reduce the need for trips not related to working, such as banking, shopping, and schooling (perhaps even dating, he suggested half-jokingly). He further noted that offshore workers do not contribute to traffic jams. Turning to the demand side, Kirby discussed better demand management via electronic tolling. In this concept, tolls and transit fares can vary by congestion levels, time of day, and even vehicle type. There is the additional promise of new forms of transportation, noted Kirby, such as "smart cars," magnetic levitation transit (maglev), personal rapid transit, and the "driverless automatic taxi." Observed Kirby, one result of mitigating road congestion will be a reduction in the number of accidents.

But in addition to congestion, technology impacts highway safety and transportation finance, explained Michael Huerta. Presently, traffic fatalities are the leading cause of death in children and in young adults, and they cost \$230.6 billion per year. Furthermore, two types of accidents, intersection collisions and running off the road, account for half of the traffic fatalities.

The vehicle integration initiative, a cooperative research program among the automotive industry, the US Department of Transportation, and state departments of transportation, has as its goal the reduction of the number of fatalities from intersection-related incidents. It does this with three kinds of communication – infrastructure to vehicle, vehicle to infrastructure, and vehicle to vehicle. This communication is based on the same wireless technology that is used in electronic toll collection, but it also uses the Global Positioning System (GPS).

Infrastructure-to-vehicle communication can provide warning if another vehicle is entering an intersection,

thereby helping to avoid collisions. In addition, it can warn of road conditions such as work zones, potholes, and accidents. Even dynamic navigation, to suggest alternate routes if the intended route is congested, is possible, as are adaptive headlights. Infrastructure-to-vehicle may be a warning system or may even be an automatic control system.

Vehicle-to-infrastructure communication, already enabling electronic toll collection, can support intelligent traffic signals (to sense traffic cueing and optimize the traffic flow) and intelligent on-ramp metering (to facilitate traffic merging). An additional possibility is automated bypass of inspection and weighing stations for trucks that have pre-established safety record. There is also the possibility of signal pre-emption by emergency vehicles. Vehicle-to-vehicle communication can warn of road conditions and blind spots. In addition, it can support adaptive cruise control (to optimize inter-vehicle spacing) and even wrong way driver warning – for example, if an intoxicated driver is going the wrong way on the highway.

Elaborating further on electronic toll collection technology, Huerta emphasized that it provides a way to manage demand and provide a guaranteed level of service. The idea behind managed lanes is to sell excess HOV lane capacity to paying motorists and then build high occupancy toll (HOT) networks. Under a managed lanes system, a variable message sign tells the driver the toll that he/she will pay for that time of day. The sign replaces toll booths, and the system works for vehicle speeds up to 120 miles per hour. The idea is gaining acceptance, and managed lanes are now operational in San Diego, Houston, Minneapolis, and also in Orange County, California. Maryland is looking at the possibility of managed lanes on I-270 and I-495 (the Capital Beltway). At the same time, Virginia is looking into the possibility of managed lanes on its part of the Capital Beltway and also on I-395.

In Huerta's view, technology will continue to drive improvements in all

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modes of transportation. At the same time, it will make the road network safer and make the most effective use of existing capacity.

### THE BUCK STARTS HERE!

Impressive as these possibilities are, continued Huerta, there are deployment barriers. One such barrier is the cost and the issue of who pays. The position of the automotive industry is to install the systems on vehicles only if there is consumer demand – although seed money may be a possibility. In all likelihood, says Huerta, the public sector would most likely pay for the infrastructure. There are also the issues of privacy and data ownership, specifically that the technology can enable “Big Brother” government to know where one has been. Even the matter of liability – that is, who pays if one’s vehicle control system malfunctions to cause an accident – needs to be addressed.

Turning to traffic congestion,

Huerta quantified the economic impact at \$63.1 billion per year. With travel time reliability becoming an increasing problem, Huerta stated that the nationwide average annual peak period delay per traveler was a whopping 47 hours in 2003, in contrast with a mere ten hours in 1982. At an average annual peak period delay per traveler of 69 hours, Washington DC ranks as the third worst area nationwide, exceeded only by Los Angeles and San Francisco. Baltimore comes in 17th at 50 hours. Furthermore, noted Huerta, the number of vehicle miles traveled is projected to increase by 50% over the next 20 years. Bottlenecks, an issue of baseline capacity, account for 40% of these traffic delays, followed in turn by traffic incidents (25%), delays due to weather (15%), work zones (10%), poor signal timing (5%), and special events (also 5%).

However, new highway capacity is expensive, and there are socioeconomic and environmental issues. In the near term, the only major new capacity project in the greater Washington DC

area is the proposed inter-county connector (ICC) in Maryland.

So who pays? Huerta told the audience that at present, the primary revenue is a gallon-based fuel tax and that current revenues are not enough to meet the projected costs of maintenance alone. Moreover, there are concerns that this revenue base is becoming eroded, because of political reluctance to increase the gasoline tax, loss of purchasing power, and (ironically) increased fuel efficiency. Projections show revenues can erode by 15% or more in 20 years.

A new mileage-based system is being examined, continued Huerta. Under this system, the tax is based on the miles driven. A pilot project in Oregon imposes a per-mile charge based on the miles of travel within a given zone, the miles driven in state vs. out of state, and the time of day (whether rush hour or not). The cost is 1.25 cents per mile. The system requires that vehicles be equipped with electronic odometers plus a GPS

See *Transportation*, continued on page 13

## Religion

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### SCENARIO-BASED ANALYSIS

To address this question, a scenario-based methodology involving alternative future worlds may be a useful starting point. For now, it is useful to consider six hypothetical alternative future worlds, roughly akin to the alternative worlds considered in *Air Force 2025*<sup>1</sup>:

- “Business as Usual”
- “Overdrive”
- “Nation Be Gone!”
- “Zero Sum”
- “King No More”
- “Autonomous Villages”

(all my own names). The first five worlds are roughly akin to, and draw inspiration from, the *Air Force 2025* worlds “2015 Crossroads,” “Digital Cacophony,” “Zaibatsu,” “Halves and Half-Naughts,” and “King Khan” respectively.<sup>2</sup> “Autonomous Villages” is roughly akin to “Byte!,” another alternative future world considered in

*Air Force 2025* but not used in the final study.<sup>3</sup> It is important to note that these worlds are not mutually exclusive and that elements from more than one of these worlds can coexist in the future that eventually emerges.

### TOO MUCH OF A GOOD THING

“Business as Usual” represents a comparatively evolutionary world, in which technology and the economy are the key drivers and operative “deities,” reinforced by an “instant gratification” mindset at least in some parts of the world. If socioeconomic polarization is disregarded for now (that is, deferred to “Zero Sum”), this seemingly benign world offers continued satisfaction from material prosperity, possessions, consumerism, diversion, entertainment, and other trappings of mainstream success such as status. In this world, various people will at some point experience an emptiness that the “good things in life” cannot fulfill, and this emptiness will set them on a search for fulfill-

ment beyond the material world and physical senses. However, many others will have less of an interest in – or at least will place less priority on – personal and spiritual growth above and beyond that which serves their material, career, and related life goals, especially given the “instant gratification” mindset and the “chronological challenge” of living in a not-enough-hours-in-the-day society with its working lunch, eat-at-your-desk, and even uncompensated overtime routines to boot. Contrast this with the hunter-

See *Religion*, continued on page 8

<sup>1</sup> Although numerous people including warfighters, scientists, acquisition professionals, logistics officers, and futurists pioneered the methodology, full details can be found in the following two references:

a. J. A. Jackson et al., “Air Force 2024 Operational Analysis,” *Military Operations Research* V3, N4, 1997, pp. 5-21.

b. *Air Force 2025 Final Report Homepage*, [www.au.af.mil/au/2025](http://www.au.af.mil/au/2025), accessed November 8, 1996.

<sup>2</sup> *Ibid.*

<sup>3</sup> *Ibid.*

## Religion

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gatherer days, in which people allegedly had more time to gaze at fires or at stars in contemplation!

Of those who do seek personal and spiritual growth, the temptation to try several paths in succession, without giving any one of them a fair chance to yield results, will be strong in the “instant gratification” or “quarterly earnings statement” cultures. On the average, they will be drawn to paths (and in some cases, cults) that promise quick results as opposed to slow, steady growth. In like manner, this behavior is presently found in other areas of human activity, for example, when one jumps from one weight loss plan to another without giving any one of them a fair chance. Yet, there are those who will make a commitment to a particular spiritual path, be it a mainstream religion or a non-traditional one.

### THE ONLY THING THAT DOESN'T CHANGE IS ...

“Overdrive,” like “Business as Usual,” represents a world of general prosperity. To the extent that people experience this prosperity, the analysis for “Business as Usual” is applicable. In “Overdrive,” however, the explosive rate of change puts at risk one’s safety nets, underpinnings, and even identity in ways that lead to discontent for many. Economic growth is at an explosive pace and is accompanied by rapid growth and proliferation of technology – for example, pervasive information technology (IT), biotech, and nanotech. This exponential growth and proliferation of technology empowers the individual as well as small groups, good and bad. Even if one disregards individuals and groups with malevolent intentions, the empowerment leads to decreasing order and authority. Additional possible consequences include social isolation as well as a surveillance society that trades some privacy for safety and security.

Then there is explosive change itself – change that puts at risk the stable reference points to which many people are generally accustomed. Taken to the extreme, nothing can be

counted on anymore – one’s employment, retirement, financial security, lifestyles, friends (personal relationships), national boundaries, and alliances. Indeed, elements of this alternative future world (and of the others postulated herein) are present even today. Even the possibility of



Stein

electronic democracy (direct voting by citizens on all matters) can be envisioned in “Overdrive,” such that government itself becomes as fickle as the polls! For its part, technology itself might lose its place in the pantheon of *de facto* gods if it fails to solve social problems – or worse yet, if it is perceived as creating more problems than it solves. A Luddite backlash, anyone?

In “Overdrive,” empowerment might at some point lead to disempowerment or to empty, non-fulfilling empowerment. This, plus social isolation and the fear and anxiety resulting from the lack of a stable reference point, will tend to cultivate fatalism among some and a survivalist mindset among many more, even though some will prosper initially. As more people find themselves living lives of maintenance, there are correspondingly fewer opportunities for self-actualization, and “instant gratification.” In “Overdrive,” many will search for any stable reference point and identity that they can find (assuming that humans themselves do not change beyond a need for stability and identity), perhaps starting with one’s family (assuming that families as we know them still existed), one’s “tribe” (ethnicity), or one’s country (again, provided that the nation-state still existed). Even today, the “tribe” provides an identity that puts a value-based veneer on interest-based conflicts and that in some cases is itself a basis for conflict, and extreme identification with one’s tribe typically leads to rampant nationalism, racism, and xeno-

phobia. Likewise for religion when it serves as a label or identity in an “us-them” sense.

However, some will turn to religion and to spiritual paths for reasons transcending identity, specifically to seek meaning, fulfillment, and inner peace beyond everyday life. With some of the mainstream religions themselves being tested by rapid change even today, there will be considerable interest in the non-traditional ones, although a resurgence of some of the traditional religions is not beyond possibility. Of course, cults also tend to capitalize on discontent and disillusionment with everyday life.

The third hypothetical world, “Nation Be Gone,” presents similar challenges. In this world, the nation-state, heretofore a relatively stable reference point, becomes less relevant, primarily as the result of new geostrategic actors – alliances, trade blocs, multinational corporations, transnational ethnic groups, transnational cause-oriented groups (benevolent as well as malevolent), and the media – themselves empowered by new technology. Here, too, a feeling of marginalization as well as powerlessness becomes pervasive, possibly accompanied by a loss of confidence in governments in general. One might envision the search for meaning, fulfillment, and a stable reference point to proceed as in “Overdrive.”

### IT ALL ADDS TO NOTHING

“Zero-Sum” represents a world that is highly polarized (haves vs. have-nots), in which the polarization is exacerbated by ethnic, cultural, religious, or other demographic clashes. The rampant resentment leads to war, revolution, and terrorism – challenging enough – and this strife and conflict in turn will displace large numbers of people into refugee camps that lead to further challenges including nationalistic backlashes as well as disease spread risk. Accompanying the conflict and displacement will be ethnic strife, tribalism, and xenophobia.

In this “Zero-Sum” world, one will find interest-based conflicts – that

See Religion, continued on page 9



## Religion

*continued from page 8*

is, conflicts over habitable land, food, water, healthcare, and the other necessities of life – as the have-nots struggle to survive. A value- (identity-) based conflict component will also manifest because of resentment. The competition for resources and rampant conflict itself will stress the environment to its limits, resulting in further loss of habitable land and (at least, for the have-nots) access to the necessities of life, reinforcing the zero-sum mindset. Resource conflict feeds on itself, leading to more refugees and in turn more conflict in a vicious circle sense. Even some of the haves see a lower standard of living. In the extreme, the environmental degradation assumes proportions that are more ominous, such as a loss of biodiversity (with its own further consequences to the environment and the availability of foods and herbs), a “neo-Atlantis” (that is, submergence of coastal regions), and increased incidence of skin cancer if the ozone layer is compromised.

What does this mean for the people, especially the have-nots? Anxiety and fear. A sense of powerlessness, fatalism, despair, and marginalization. Among haves and have-nots alike, a survivalist mentality – indeed, a zero-sum mindset – coupled with a general loss of confidence in governments to preserve order. On the one hand, the survivalist mentality will tend to keep people focused on the lowest levels of Maslow’s hierarchy of human needs, and in any event, one might expect to find fewer opportunities for self-actualization outside of conflict and demagoguery. At the same time, there are those who seek meaning, fulfillment, and contentment beyond the physical realm of “everyday life” (if one can call it living). Furthermore, in this world, like “Overdrive” and “Nation Be Gone,” there will be the tendency for people to search for a stability and identity reference point, be it the family, the tribe (ethnic group), the nation, one’s culture, or a religion or spiritual path. To this end, the tribe, culture, or nation – or even a mainstream religion – might

initially be attractive to large numbers of people, but over-identification there-with will fan the flames of conflict. At some point, there is the possibility that those who survive are drawn to a “non-binary” spiritual path (that is, a path that recognizes and accepts other paths, as opposed to one that is based on us-versus-them duality).

“King No More,” roughly akin to “King Khan” of *Air Force 2025*,<sup>4</sup> is a world characterized by the loss of US superpower status and Western cultural preeminence. This loss of superpower status is coupled with a weakening economy, in a vicious circle sense, as well as with a loss of *de facto* linguistic dominance. In this world, individual and organizational (corporate) survival might necessitate the mastery of other languages and the capability to adapt to those cultures on the rise. Simultaneously, there is a decline in the relatively high standard of living in various nations. This standard of living decline will motivate a search for fulfillment beyond the everyday world. Additional factors include, as before, fewer opportunities for self-actualization and fulfillment, the possible loss of confidence in the government (which is actually a reflection of its people), and the search for a stable reference point.

The final world considered is “Autonomous Villages,” a relatively benign world in which there is at least the possibility of lifestyles that are relatively balanced as well as interpersonal relationships that are more meaningful – as one might infer by comparing small, mid-size, and large cities in the contemporary US. In this sense, perhaps there is a tribal mindset in nearly all of us, as it is generally easier to relate to small groups than to larger, impersonal ones. In this world, there is correspondingly less marginalization and alienation. But this world itself has two possible trajectories. On one, “Autonomous Villages” provides material happiness and diversion similar to that available in “Business as Usual,” in which case the analysis of that world is applicable. The other trajectory leads to a world in which meaningful personal relationships provide a

dimension beyond contemporary cut-throat, fast-paced mainstream life and where balanced lifestyles motivate and provide more time for introspection.

## PRELIMINARY CONCLUSIONS

While neither this mini-analysis nor the set of alternative future worlds used therein is exhaustive, it identifies phenomena that can influence the general interest in spirituality and religion. They are as follows. First, for many people, material fulfillment, material success, and diversion tend to lessen interest in introspection, religion, and spirituality. The countervailing factor is that at least for some people, the material-and-diversion (“MAD”?) happiness eventually proves empty, at which point they seek fulfillment beyond their next promotion, next major purchase, or entertainment.

Secondly, an “instant gratification” culture tends to weaken the concept of long-term commitment to anything, including a religion or a spiritual path, on the average.

Third, in this era of rapid change, one can readily lose his/her underpinnings, and there is then the tendency to seek a stable reference point. Some of these “stable” reference points can themselves lose their stability, while others (for example, one’s ethnicity, culture, religious label, or other “us-them” descriptor) can ignite or exacerbate conflict. However, a truly spiritual path can provide a stable reference point that (at least, for its follower) is above and beyond the storms of “everyday life.”

Furthermore, a survivalist mindset tends to shift one’s focus to the lower levels of Maslow’s hierarchy of needs. Although many people will focus there, there are those who will seek meaning, fulfillment, and inner peace beyond the material world.

For their part, alienation and marginalization can lead in two directions – one the one hand, toward strife and conflict, and on the other, to a search for a new source of meaning and identity.

*See Religion, continued on page 10*

<sup>4</sup> *Ibid.*

## CHAPTERS' CORNER

*It is my honor and privilege to feature the Minnesota Futurists and its distinguished Founding President, Dr. Earl Joseph. (Dave)*

By Earl C. Joseph, Futurist, MN Futurists Coordinator, and **Futurics** Editor

The Minnesota Futurists, the first Chapter of the World Future Society, was formed in 1967 by its cofounders Earl Joseph, Brian Toren, and William Bergen. We now meet every Saturday morning for two and a half hours. On the first Saturday of any month, we hold a class on future studies; on March 4, 2006 we held our 62nd class. Its topic was Postmodern Forecasting. On the other Saturdays, we conduct Special Interest Group meetings (SIGs).

During the second Saturday of a month the SIG topic area deals with alternative long-term economic futures. In February, 2006 the topic was GDP futures. The third Saturday covers Science and Technology alternative futures. In March, 2006 the topic was Physics Futures. The fourth Saturday deals with Society, Management, or Education alternative futures. The February, 2006 topic was Peter Drucker's Legacy for the Future. If a month has five Saturdays, the fifth-Saturday discussion deals with Peace Futures. For April, 2006 the Peace SIG topic is Peace Strategies and Best Practices.

Members decide the topics to be discussed on a quarterly basis, and they are announced on our Web site, <http://www.mnfuturists.org> by Brian Toren, our Web master. We have found that by meeting every Saturday, the attendance has been more stable and larger than when we were meeting once a month in the earlier days of our chapter. Sperry Univac (now Unisys) funded the first 15 years of our existence. They provided a meeting place, edited, printed, and mailed our newsletter, **Future Trends** (now published on the Web) and our journal. Our international refereed journal, **Futurics**, is in 2006 its 30th year of publication. Since its

## Minnesota Futurists

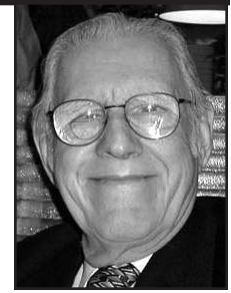
inception, the subscription rate pays for all activities of the Minnesota Futurists.

To recap and answer the question, "Why has the Minnesota Futurists been successful?," consider the following top ten most important factors:

1. Obtain early support and funding from a corporation.
2. Do "marketing" to gain members and maintain a large mailing database of people interested in the future.
3. Have a few dedicated people who keep the chapter going over the long-term and who are able to present or find speakers on interesting topics about alternative possible futures.
4. Produce and mail out a newsletter. The Minnesota Futurists published **Future Trends**, which was also our marketing tool that contained many articles on future studies.
5. Start with monthly meetings and move to weekly meetings relatively soon.
6. Have a product or service that produces funds. In the Minnesota Futurists case, it is the International Journal **Futurics**.
7. Encourage members to participate locally to improve the community's future. The Minnesota futurists worked with the local city councils, legislators, schools, businesses, and other institutions to assist in planning desirable futures.
8. Have an active speakers bureau.
9. Have Special Interest Groups (SIGs) to attract meeting attendees; make them primarily discussion meetings, the Minnesota Futurists use a "speaker interruptus" philosophy.
10. Have at least seven to ten participating officers who are elected for multiyear terms.

*Earl Joseph is a professor at three universities; Walden University, Metropolitan State University, and University of St. Thomas. He is the emeritus President of Anticipatory Sciences. He has been a futurist, professor, management consultant, and computer scientist for more than 50 years. Earl's credits include being featured in the **Wall Street Journal**, **USA Today**, **Business Week**, **U. S. News & World Report**, **Science News**, and many other*

*national publications. The **Wall Street Journal** claims Earl was the first in Corporate America to have the title of "Futurist,"*



Joseph

***Business Week** claims he was one the first to use the phrase "smart machine" and forecasted that the central processing unit (CPU) of computers would become a "bulge in the cable" (now chips). The holder of three computer patents, Earl was a member of an early 1970's team that initially studied and outlined the design of the Internet. He convinced the Defense Department at a Naval Academy workshop to fund the development of Very High Speed Large Scale Integration circuit chip technology that led to today's chip advances. An invited keynoter at 100s of conferences, Earl has published approximately 1,000 articles and papers in various journals, magazines, and newspapers.*

*Your chapter has its own success story and winning ideas to share with other chapters! Let's continue this exchange of ideas that can benefit all WFS chapters. Send your "words of wisdom" to [futuretakes@cs.com](mailto:futuretakes@cs.com) for publication in "Chapters' Corner."*

## Religion

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Finally, for people who have only a lukewarm interest in introspection, the pace of life (among several other factors beyond the present scope) can itself be a diversion or an inhibitor.

These preliminary conclusions notwithstanding, there are people who make the commitment to follow a particular religion or spiritual path, irrespective of the pace of life or other external circumstances.

**DISCUSSION POINTS** (send comments to [futuretakes@cs.com](mailto:futuretakes@cs.com))

- Here's your long-awaited chance to "one up" your Editor-in-Chief. This is an opportunity that doesn't come often! What other factors did he omit?

Dave Stein is Editor-in-Chief of **FUTUREtakes**

# The Future Calls for A New Way of Seeing, of Being, of Doing

*Sr. Brenda Walsh, Member of World Future Society*

Frequently our solutions for a better future are on a surface level, such as in the area of technology, business, addressing terrorism and other areas of concern. While exploration in these areas is needed, a deeper spiritual exploration is required to create a new and sustainable foundation and to create a world of peace, justice and harmony for ourselves and for generations still to come.

Dr. Martin Luther King, Jr. reminds us we are "all tied together in a common garment of destiny." That is a good first step toward achieving unity, harmony and peace. It means first of all recognizing we are all people of body, mind and spirit, worthy of respect, encouragement and opportunities for growth.

- a. We need to name the structures and systems we have created that have fettered, disempowered and starved the majority of human beings across the globe. Beyond naming, we need the moral courage to put people before acquiring and possessing and begin relating to one another as brothers and sisters, not as Black or White, Brown or Yellow, experts and ignorant, rich and poor. With this kind of vision, we will have the motivation to work for peace, justice, equality and compassion for all people, rather than exploiting and destroying one another.
- b. We need to name the violence we have institutionalized as a way of getting ahead and holding on to power and even of solving international problems. We have used violence as a way glorifying power and a sense of superiority and keeping the vast majority of the world's population poor. We need a new vision for sharing power and resources for all people.
- c. We need to redirect the trillions spent on armaments toward education, health care, job creation and other human needs. By continuing the armaments race, we are adding to the world's violence and conflict.

Change of consciousness in ways named above and imagination to move from vision to action will make a difference. Such consciousness and thoughts move from head to heart, from one individual and group to another and can make a vast difference in the long haul. This will entail struggle and pain and paying the price. We are already paying a high price, when we look around us or in the evening use and see images of victims of war and crime, economic and political disparities, hunger and devastation of every kind. We need a different way to organize our lives and our actions.

Consciousness of our human value is the only place to start. Vaclav Havel, former President of the Czech Republic got it right when he said: "Consciousness precedes being. Hope

starts in the human heart."

He believed we need to get in touch with the real truth about ourselves and all human beings and from there create systems and structures that support human life in all its forms.

When we reclaim our inner spiritual resources, that will enable us to have the moral courage to bring about needed change, starting with ourselves. As Gandhi once said: "We must be the change we want to see happen." We must go deeper to have the courage to go broader and higher. By connecting with people globally who are on a spiritual path, it will make all the difference.

It is a journey worth starting and sustaining. Let us begin today courageously.

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## IPv6

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investment has led to Japan, Korea and most recently China investing over 850M in IPv6. The potential implications to the US economy and to national security are substantial.

The Eurasia Center/Eurasian Business Coalition (EBC) and the **INTERNATIONAL INVESTOR** television program partnered with the World Future Society United States National Capital Chapter (NatCapWFS) to sponsor a Global IPv6 Forum in September 2005. This internationally televised Global Forum was held in Washington, D.C., the epicenter of the world's Internet, military-industry complex, and the Global War on Terrorism infrastructure, to educate key leaders of high technology, business, banking, investment firms, global traders, and government officials on IPv6 and its impacts on communications, trade, and national security. Participating as panelists on this Forum were: Mark Bayliss, President, Visual Link Internet; Joel B. Coulter, President, Mobile Sciences Consortium; Chris Harz, Program Director, IPv6 Summit; Louis McDonald, Chief Technology Officer,

Virginia Center of Innovative Technology and Yurie Rich, Business Director, North American IPv6 Task Force. The panel was moderated by Eric Garland, Futurist and Program Chair of the NatCapWFS. Robert Sherretta, President/Producer of the **INTERNATIONAL INVESTOR** and Dr. Samuel Lee Hancock, Executive Director, The Eurasia Center conducted the broadcast interviews.

## YOUR ADDRESS OR MINE?

IPv4, the current global Internet infrastructure, was developed by the leaders of America's Internet at the cost of some US\$15 billion invested over the past 30 years. IPv6 is a quantum Internet protocol upgrade to replace the current antiquated IPv4. The new protocol will allow true point-to-point secure global communication across digital devices and will alleviate the worldwide IP address shortages. Under IPv4, the US currently uses over 50% of all the IP addresses available worldwide. Even though IPv6 was developed in the United States, the new protocol and solutions it provides is experiencing rapid growth in Korea, Japan, and

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## IPv6

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China in Asia and France and the Netherlands in Europe.

### TRADE IMPLICATIONS

These Asian and European nations realize that the countries which take the lead on setting the next generation global Internet standards, policies, and producing the next generation digital solutions, will greatly enhance their GDP (gross domestic product). It has been estimated by some economists in the United States Federal Reserve Bank and the World Bank that as much as one-third of the United States GDP is generated through the Internet and related products and services. This is an amount of some US\$3.376 trillion annually and rising. It was reported in the Global IPv6 Forum that if the US does not leverage its Internet investments, it will lose some 50% of its current Internet revenues to Asia, Europe, and Russia. Such a dire situation could further increase the balance of trade debt and lower the US standard of living.

### NATIONAL SECURITY IMPLICATIONS

An eye-opening topic was the implications of the seeking of control or influence over global IPv6 standards, policies, and networks by non-democratic countries, dictatorships, and the al-Qaeda terrorist network. Seeking such control for their own purposes currently leaves the US government, industry, banking, and education networks vulnerable to hidden IPv6 denial-of-service attacks, cyber warfare, Internet surveillance, identify theft, and actual shutdown of the Internet. Terrorism is a global war that requires all enlightened, progressive, and democratically functioning countries to work together to secure critical government, energy, health care, economic, and social infrastructures. Regressive governmental regimes could implement repressive IPv6 standards and policies to inhibit open collaborative communications that are key to individual freedom, sustainable growth, disaster response, and democracy if the

US does not keep its global Internet leadership position.

According to the panelists, the United States must actively work with its Eurasian partners to ensure that the global Internet standards are set by those nations dedicated to free, open, and transparent governments. If these nations, in concert with the United States, do not protect the next generation Internet, islands of communication isolation will continue in such areas as Africa, the Caribbean, Middle East, South America, and Central Asia. Such pockets promote the growth of terrorism, significantly slow global economic expansion, and inhibit emergency response to natural or man-made disasters. The current lack of IPv6 collaboration and agreement on IPv6 standards can have dire consequences, for example, in the event of a rapid spread of the Asian Bird Flu in isolated socioeconomic regions with limited emergency communication capabilities.

IPv6 supports global collaboration and communication for joint Defense and Homeland Security systems at ports, national borders, and critical business/energy infrastructure. The enhanced interoperable communication and multimedia multicast streaming capabilities across mobile devices offers First Responders the ability to intelligently share vital situational awareness, medical, and disaster data with other local, state, federal and international disaster response agencies. Emergency response teams with IPv6 have real-time access to maps, portable video monitors at crisis sites, medical services, and disaster data that improves their actions and decisions to prevent further property losses, streamline evacuations, and reduce the loss of life. IPv6's new features also allow for digital/mobile communications, multimedia content streaming, IPTV entertainment, and eCommerce.

### WHERE DO WE GO FROM HERE?

As these facts have become clearer, leaders of the US Congress, the Office of the President, and the Department of Defense have issued mandates to transition all Government

agencies' Internet network infrastructure to IPv6 by 2008. These mandates have established a Government/Industry leadership team. This "Team" is to advance America's transition to this next generation Internet infrastructure and solutions. The United States is just now beginning to significantly invest in IPv6.

Through active participation by the influential community of IPv6 evangelists in multiple conferences and meetings with Congress, Department of Defense (DOD), and Department of Homeland Security officials, the following outcomes are possible:

- Maintaining ICAAN (Internet Corporation for Assigned Names and Numbers) leadership, as opposed to ceding Internet leadership to governments that are less open,
- Insisting on "First Responder Communications and International IPv6" protocols as a priority focus;
- Establishing a partnership for a new IPv6 Test & Standards Center in Northern Virginia, USA to accelerate Government transition to IPv6,
- Creating a Science of Information Institute to allow nations to share their IPv6 Research and Development (R&D), solution development, testing, and applications through the World Wide Web. Such new international partnerships allow for US IPv6 standards, policies, IP communications, and security firewalls to be developed in collaboration with strategic energy partners in Africa, Eurasia, and Russia.

In light of these many intrinsic benefits all speakers on the Panel emphasized that the United States must continue its leadership for the new IPv6 generation as it did under the current IPv4. Various speakers highlighted IPv6 features and functions that can be used as catalysts for global public/private development partnerships.

A 30 minute edited broadcast is available by satellite television networks in 132 countries and 55 major American cities through [www.international-investors.com](http://www.international-investors.com).

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## Transportation

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system. When a driver refuels his/her vehicle, a per-mile charge replaces the gasoline tax. No location information is recorded.

## NEXT-GENERATION NEIGHBORHOODS

A strikingly different perspective was provided by Gary Maule, who focused on urban issues. Said Maule, transportation is synonymous with urban design, from the standpoints of accessibility, noise, and the view, noting that green fields are diminishing and that the automobile is no longer convenient in a number of urban areas. At the same time, he dispelled the myth that cars are categorically bad, emphasizing that they are part of street activity and vitality in addition to being a fashion statement. Noting that at one time, it was possible to abandon and neglect run-down areas, Maule stated that quality of life, sustainable development, smart growth, rural preservation, and transportation are all now interrelated.

For example, real estate dynamics are changing. There is now movement back to the city, concurrent with the urbanization of suburbs along transportation corridors and especially at the “nodes” (transportation stations).

Town centers and main streets are resurging – as in Reston Center. This leaves wedges for lower density development. Maule foresees smart growth, with live-work-play environments, and mixed land use and transportation, together with more travel choices. This contrasts profoundly with the present paradigm in which buildings are generally single-use – residential, retail, or office. Continued Maule, many times it is not possible to build the desired high density environment and then grow it. Smart growth can include re-zoning to obtain the right density and to create more public spaces in these new urban environments.

Maule envisions a network of well-planned main roads and cross roads, with the cross roads combining access with traffic calming, together with parking garages that are embedded into the urban architecture as opposed to stand-alone. Wall-able streets will maximize connectivity while also supporting self-policing.

## Q&A (as best captured)

**Q:** How does security (defense against terrorists) impact the plans?

**A:** We are starting to see this in the recent Defense Department requirements that buildings be set back from streets. They don’t want their buildings to be close to the sidewalks with

street level retail. One must also remember that the terrorist have hit private sector targets as well as government targets. There are ways other than the building setback requirements to ensure security. For example, camera monitors as discussed in tonight’s program can provide security – just as cameras can photograph the license tags of cars that run toll gates. We may also see airplanes become “democratized” so that people will use very small private airplanes to get around.

**Q:** How do we make housing that is closer to workplaces more affordable? Also, and has anyone looked at the impact of a possible collapse of the real estate bubble? What we’re getting now is more unaffordable housing – “McMansions.”

**A:** This goes back to the local governments. Housing costs money because it is a smaller tax base per acre. In contrast, local governments want to accommodate employers, since that bolsters the tax base. In addition, they sometimes want to preserve green space. Furthermore, developers sometimes want to develop an area, but the neighbors resist. However, one can find areas that need redevelopment.

**Q:** The three scenarios stories are driven by anticipated changes, and they are the least likely outcomes. You are

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## THE EURASIA CENTER AND THE INTERNATIONAL INVESTOR

The Eurasia Center/EBC and the *INTERNATIONAL INVESTOR* take great pride in cooperating with the WFS US National Capital Chapter to educate the world through next generation technology forums. Such forums offer technology entrepreneurs a global education and communication channel to Government, industry, and investment leaders in 55 American cities and 132 nations. These channels can launch world-wide technology convergence partnerships that will bring great promises for many generations to come through the new IPv6 connectivity around the globe.

This article was developed with the collaboration of:

- Mr. Mark Bayliss, President, Visual Link Internet, LLC, World AirWaves, and Cobalt Racks, L.L.P.
- Mr. Eric Garland, Futurist and Program Chair, WFS US National Capital Chapter
- Mr. Chris Harz, Program Director, IPv6 Summit, Inc.
- Mr. Louis McDonald, Chief Technology Officer, Virginia Center of Innovative Technology
- Mr. Yurie Rich, President, Native6 Inc. and Business Director, North American IPv6 Task Force
- Ms. Limor Schafman, President, Keystone Technologies Group and Immediate Past President, WFS US National Capital Chapter

**DISCUSSION POINTS** (send comments to [futuretakes@cs.com](mailto:futuretakes@cs.com)):

- *It has been envisioned that someday data will be organized before we get it to alleviate “drowning” in information overload. How will data be organized, and with what implications?*
- *Another prediction – every appliance in your home will have its own IP address. Then your appliances can talk to you and to each other. For example, your refrigerator will tell you what is running out or stale, and it will talk with your TV. Manufacturers will be in contact with each component of your car, even each tire. Auto companies will know what kind of gasoline is going into each vehicle. What will your home and car look like in 2020, and what else will be different if every appliance has its own IP address?*
- *Some have suggested that perhaps even*

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## Book Discussion

# Futurist Book Group Discusses *The World is Flat*

by Thomas L. Friedman  
Farrarm Straus and Giroux,  
2005  
ISBN-10:0-374-29288-4

*Synopsis of the Futurist Book Group September 2005 meeting, summarized by Ken Harris.*

The Chapter's Futurist Book Group kicked off the '05-'06 program year with a discussion of the best seller, *The World is Flat: A Brief History of the Twenty-first Century*, by well-known New York Times columnist Tom Friedman. **FUTUREtakes** readers will find this book an easy-to-read explanation of the forces causing globalization of the world economy. Although the writing style is journalistic rather than scholarly, the book is well researched, and its content is thought provoking and serious. In fact, the journalistic style consisting of lengthy examples and "laws" formulated by Friedman (e.g., the Dell theory of conflict resolution) drive home Friedman's views to the average reader far better than a more scholarly tract ever could.

The first four chapters are devoted to a discussion of the 10 forces that have flattened the world (i.e., those that have made globalization possible). They are:

- **The Fall of the Berlin Wall** facilitated the fall of Communism; permitted thinking about the world as a single market, a single ecosystem, and a single community; and paved the way for an information revolution characterized by networked interoperable PCs using Windows software.
- **Netscape went public.** The emergence of the Netscape browser made the Internet truly interoperable. This led to the laying of much more fiber optic cable than was initially needed and provided capacity for exchange

of massive amounts of digitized information.

- **Work Flow Software: Let's do lunch; have your application talk to my application.** Software applications became able to talk to each other and made outsourcing possible.
- **Open sourcing, self-organizing communities:** An intellectual commons developed including open source software and self-organizing communities such as the citizen journalist and Wikipedia free encyclopedia movements.
- **Y2K.** Indian engineers gained software expertise and credibility by modifying software systems to prevent a Y2K calamity.
- **Offshoring: Running with gazelles, eating with lions:** Offshoring means transferring a whole factory of operation from one country to another. China's joining the World Trade Organization created new incentives for offshoring.
- **Supply-chaining: eating sushi in Arkansas:** Wal-Mart spurred a revolution in supply chain efficiency.
- **Inourcing: What the guys in the funny brown shorts are really doing:** Companies like UPS and FedEx turned from being strictly delivery companies to managing the entire logistics operations of their customers.
- **Informing Google, Yahoo, MSN Web Search:** People got the ability to find large amounts of information on their own. Individuals could be their own self-directed, self-empowered researcher, and editor.
- **The steroids: digital, mobile and virtual:** Growing computer capacity lets us digitize more and more words, music, data and entertainment.

Around 2000, three convergences occurred. First, all ten of the flattening forces began to work together to create a newer flatter world. Second, billions of people entered the global economic playing field for the first time from China, India and the former Soviet Union. Third, some of them were able to use the new tools and compete and cooperate with everyone else.

Friedman believes there will be a

"great sorting out" of the world created by these new flatteners—a world in which we could either move to a frictionless perfect market or resist forces pushing that way for the sake of preserving other values; in which governments will have to decide how much to de-regulate; and in which individuals have to sort out their identities as consumers, employees, citizens, taxpayers and shareholders.

Chapters 5-8 deal with how America should confront this new flat world. According to Friedman, who is convinced that America should still continue its free trade policy, we should not erect barriers to outsourcing, supply-chaining and offshoring. Continuation of this free-trade policy will have a major impact on American workers. Above all they will have to continually upgrade their skills because workers in competitor countries will stand ready to take their jobs if they do not. Many, but not all, American workers are in jeopardy of having their jobs outsourced to foreign countries. Friedman considers 4 classes of workers to be untouchable (i.e., those whose jobs cannot be outsourced)

- Workers who are special (e.g., world class professional athletes like Michael Jordan)
- Specialized workers—those knowledge workers whose skills are not fungible and in high demand (e.g., brain surgeons)
- Anchored workers—workers tied to specific locations such as barbers and waitresses. However, even parts of their work, such as making appointments can be outsourced.
- Adaptable workers—those who continually create new value.

Despite what one may read in the press about continual job outsourcing, America has seven major job-producing strengths:

- World-class research universities
- Security and regulation of its capital markets
- An open society
- Flexible labor laws
- The world's largest domestic consumer market

See Book Discussion, continued on page 15

## Book Discussion

*continued from page 14*

- Political stability
- One of the great meeting points of the world

Friedman is afraid America has become too complacent about the flat world we have created. In particular, he is concerned about the steady erosion of its scientific and engineering base. The base is eroding because fewer young people are studying science and engineering, and its scientists and engineers, who were motivated to pursue their careers by Sputnik, are nearing retirement age. To remedy this situation, he calls for a crash program in science and engineering education.

In chapter 8, Friedman calls for America to adopt a policy of compassionate “flatism.” This would be a program to make every American more employable when there can be no assurance of lifetime employment.

In chapter 9, Friedman addresses challenges the flat world poses to developing countries. He says they must engage in brutally honest introspection. In this introspection, they must ask to what extent they are advancing or being left behind in the flattening of the world and to what extent they are taking advantage of the new platforms for competition and collaboration. He says some countries can easily take advantage of the new world conditions and others cannot. Those who can are those which can easily “glocalize” (i.e., accept the best from foreign cultures while retaining as much as possible of their own). India and China are good at “glocalizing.” Arab countries are not.

Chapter 10 addresses how companies can cope with the flat world. Friedman proposes a seven-element strategy and cites examples of each.

Chapter 11 addresses the less happy side of globalization. Friedman recognizes that hundreds of millions of people have been left behind. Many of these people, especially in Africa, lack hope because they are too sick or their governments are too broke for them to have a pathway forward. Others are caught between the flat and “unflat” worlds; they want to become rich but

lack the tools to do so. Friedman argues that because of the circumstances of these people, it is hugely important to consider not whether but how to globalize. The anti-globalization movement he says is fueled by the following five forces:

1. Upper middle class American liberal guilt
2. The rear guard of the Socialist old left
3. An amorphous group of people protesting the speed at which the world has become flat
4. Anti-Americanism
5. A coalition of serious well meaning groups (e.g., environmentalists)

In chapter 12, Friedman traces the supply chain that produced and shipped a new Dell notebook computer to him. The total supply chain included 400 companies in North America, Europe and Asia including 30 key players. The lesson he draws is that countries involved in this global supply chain are unlikely to be in conflict with each other because, once tied to the global supply chain, they cannot afford to be separated from it.

Friedman’s conclusion is that **human imagination** is the most important quality to have in this new flat world because it can never be commoditized. Moreover, imagination must be positive. It must be an imagination symbolized by 11/9, the date the Berlin Wall fell, not by 9/11.

**DISCUSSION POINTS** (*send comments to [futuretakes@cs.com](mailto:futuretakes@cs.com)*):

- How will continued offshoring impact one of the US’s seven major job producing strengths identified by Friedman – the world’s largest consumer market?
- If a new peer competitor to the US becomes the next superpower, how are Friedman’s observations impacted?
- Friedman is concerned about the steady erosion of US science and engineering. Will this impact another of the US’s several major job producing strengths (according to Friedman) – world-class universities? Why or why not?
- What will employment patterns – and retirement and education patterns – be in 2020? What will the typical

*workday be like? What will be the relation between a college degree and one’s career(s) – and with what implications to higher education as we know it?*

- In 2025, what other types of workers will be “untouchable” (that is, whose jobs will not be subject to outsourcing)?
- Given the concern by Friedman (and many others) with science and engineering education, what are the implications to education in the liberal and fine arts?
- To what extent is antiglobalization sentiment fueled by envy, resentment, and being left behind? To what extent is it fueled by a clash of values and lifestyles?
- After globalization, what is next?

## Conference Announcement

### TransVision06: Emerging Technologies of Human Enhancement

August 17-19, 2006

University of Helsinki, Finland

This conference, sponsored by the World Transhumanist Association, will examine recent and ongoing technology developments and the associated ethical and philosophical questions.

Details are available at <http://transhumanismi.org/tv06>

## IPv6

*continued from page 13*

- every shirt (or equivalently, the person wearing it) will have its own IP address. People will be locatable in real time. Your shirt can monitor your vital signs and call an emergency number if needed. Discuss other implications of individual IP addresses.*
- How will various industries be impacted when everything has its own IP address – for example, banks, hospitals, and shipping companies?
  - Will the society of 2030 be an information-based, mobile society that wants information on a mobile basis, or will it be very different?
  - What will be the next major Internet upgrade after IPv6, and with what implications? Or, will the upgrade be such a quantum leap that it takes us “beyond the Internet” – and if so, to what?

# From the International President

By Tim Mack

WFS has been working directly with a range of post-secondary education institutions around the world, including meetings with university departments in economics, political science, business, development and humanities in Mexico, Taiwan, and Brazil. In addition WFS has participated in university strategic planning programs on federal foresight and knowledge management in the United States. We are working with community colleges, including the American Association of Community Colleges, to develop new opportunities in that arena, as well as with high schools who have exhibited an interest in the future (such as the High School of the Future in Philadelphia, partially funded by Microsoft).

One of the leading WFS goals in 2006 is to revitalize the Education Section, and accordingly the education efforts of the Society, in order to provide a wider range of tools, resources and opportunities to its membership. We made a start in 2005, undertaking a workbook and companion CD for Ed Cornish's *Futuring* book and reinitiating the Prep 21 survey of futures programming around the world. And the response to these efforts was enthusiastic. We held two education planning meetings in Chicago, which has led to a number of new and innovative session proposals for the Toronto conference. Finally, our education partnerships with Global School Networks and the Ten-Cube program are moving forward, with WFS judging a second annual CyberFair Web competition about the Future involving secondary school students around the world.

A parallel goal is to leverage the articles and program synopses published in *FUTUREtakes*, together with the appended "discussion points" that are designed as educational resources for both secondary and post-secondary students and teachers. These articles and synopses will encourage original thinking on future-related matters, and the discussion

points are excellent launch pads for student commentary, articles, and research projects. This in-house resource is available now, and it provides opportunities for students to write and perhaps even publish and for WFS chapters to work with local schools, colleges, and universities. Let's all give some thought to how to best utilize it and who to make aware of this valuable resource!

The Society's goals for 2006 include:

- Development of Tools for Foresight Education [High School, College and Mid Career Levels]
- A Young Futurists Program [to draw new members in their 20s and 30s into responsible volunteer positions]
- Futures Clubs for High Schools [to build a format for foresight minded teachers and student members]
- Collegiate Chapters [Ditto, plus providing a base for Young Futurists]
- Annual Education Section Meeting [to spread the membership beyond the usual suspects]
- Self-Reporting Prep 21 Survey [to capture what we are missing]
- Web site sign up for membership [to make it more self selecting]
- Newsletter written by Education Section members (initially as part of *Future Times*)
- Special Educators Web page [also full of items contributed by members]
- Surveys - Youth and their Future [Understand Teachers Needs for Teaching the Future]
- Blogger or Web News Service - [Resource for Upload and Download (i.e., Interactive)]

As may be evident, this level of effort will need much more than the resources of the WFS staff alone to make it all successful. There will need to be a Steering Committee for the Education Section who will guide policy and project implementation and much more volunteer participation concerning identification of areas of need, project oversight and sharing



Mack

success stories from around the world. Accordingly, I encourage all of you with an interest in education to join up in developing a robust effort within the Society to make a difference for Futures Education and the Future of Education in 2006! Any of you interested in being a part of this effort, please contact me at [tmack@wfs.org](mailto:tmack@wfs.org) or 301-656-8274. In addition, you can sign up for the Education Newsletter on the WFS Web site at [www.wfs.org](http://www.wfs.org), and we are constantly looking for new material, so send me your articles!

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## Transportation

*continued from page 13*

still in a basic continuity model. What is missing is a study of "What Washington DC can be?" Why was such a normative study not included?

**A:** These scenarios are not modest scenarios. They may not look dramatic, but they are. They pushed the envelope.

**Q:** Decades ago, neural nets and self-learning systems were to be up and running, but that hasn't happened. Where are these traffic control systems that you discussed this evening really going?

**A:** The government spend a significant amount of money on IT but has not yet reaped the payback that they were expecting. Why not? In our case, we've not been able to convince everyone of the payback – for example, reduced traffic fatalities or commute time reduction.

**Q:** All of these scenarios are unpleasant. Every other city is competing to be a high tech city. At what point do

*See Transportation, continued on page 20*



## Future (Re) Takes

*continued from page 2*

optical channels and spending millions of dollars in the process. But for all of that effort, we are today no more successful in detecting extraterrestrial intelligence than Drake was with his first search.

Efforts should expand to encompass all signaling technologies, whether or not we have achieved them yet at our present level of societal and technical adolescence. We should have an organized strategy for seeking out such probes launched by more-advanced societies and not limit our search to our current capabilities. Our present efforts should include a reach for the engineering marvels of our more-capable neighbors. Might our own starships someday leave a detectable residue? The search for the advanced propulsion signatures of others should be on our own agenda.

Astrophysicists have estimated that other civilizations could well be anywhere from a thousand to a billion years older than our own. If the first extraterrestrial civilization we encounter is at the upper end of that age continuum, SETI scientists will be lucky to even recognize its artifacts as manifestation of intelligence, let alone interpret them. Such an ancient race would be as far ahead of us as we are beyond bacteria.

If they lead us by, only a million years, then they might make their culture known to us much as we communicate with household pets. Optimally we are looking for an intelligence just a little bit more advanced than ours. An extraterrestrial intelligence that has beaten its swords into plowshares, has learned to harness its planet's resources in an environmentally responsible way, and has embraced genetic engineering with compassion and reason, to ensure the survival of its species through cooperation rather than conflict.

SETI is all about communication, not contact. Beings of an advanced civilization at the far end of the galaxy will still take 50 to 70 thousand years to get here, assuming they want to.

Even so, we still inhabit a paranoid planet. Pressures from governing bodies and private citizens alike have prompted most scientific organizations and SETI research facilities to adopt a policy that prohibits interstellar transmission lest we give ourselves away. The act of listening no way reveals our position or our interest. Listening makes us no more vulnerable to invasion and domination than we would be turning a deaf ear to the universe. Given that SETI is a passive activity, it would seem we have nothing to lose in listening.

Where will SETI be in four more decades? Human technological progress (which SETI both reflects and stimulates) has been exponential. In all likelihood, our receivers will soon span the electromagnetic spectrum, from radio through microwaves into the infrared, across the visible, ultraviolet, X-ray, gamma ray, and cosmic ray spectra, all in real time. We are developing technologies today that will enable us to see in all directions at once.

Forty years from now we will be scanning farther out in time and space than Drake ever dreamed possible. If there are electromagnetically polluting civilizations out there, surely we will have detected their photonic debris. Or perhaps it could well be that as civilizations advance they, become, by design or change, effectively invisible. In that case, 40 years from now we'll have arrived at an epiphany: We are not alone, but we might as well be.

### UPDATE

Here are some of the activities that SETI is involved with today. Frank Drake is now the Director for the Center for the Study of Life in the Universe or LITU. This SETI research

center asks the following questions: How many planets exist which might support life? What is required for life to exist? How does life start? How does it evolve, and what creatures can evolution produce? How often do intelligent creatures appear?

SETI/LITU scientists utilize an automated telescope for this research in Antarctica, where almost six months of continual winter darkness provides ideal observing conditions. In the near future scientists will participate in the Kepler Spacecraft Mission, which will achieve, for the first time, the level of sensitivity required to detect planets the size of Earth.

Today the search for extraterrestrial

intelligence is not limited to earth like planets rotating sun like stars. Research has found a greenhouse effect made by miles of ice on the satellite Europa of Jupiter. The Sun's brightness on Europa is only a few percent of that on Earth. But there is more liquid water there than in all the oceans of Earth combined. Could there be life in this giant ocean? SETI/LITU sci-

entists are exploring this possibility, both in theory and in the planning of missions to Europa to search for signs of life.

SETI researchers are now exploring the planets of dim red dwarf stars, also called M stars. Long neglected as targets for SETI searches, they comprise eighty percent of the stars in our galaxy. The possibility of habitable planets around M stars is all the more intriguing given the recent discovery of a planet around Gliese 876, an M star located just 15 light years from Earth. With the recent announcement of a solid rock planet seven to eight times the Earth's mass circling an M dwarf star, the chances for habitable worlds seem greater than ever. "It may well be that there are far more habitable planets orbiting M dwarfs

*See Future (Re) Takes, continued on page 20*

**With the recent announcement of a solid rock planet seven to eight times the Earth's mass circling an M dwarf star, the chances for habitable worlds seem greater than ever.**

## Calling All Nationalities and Cultures!



# 2006

# 2025

## Special Thematic Issue Announcement

Readers around the world – you are invited to contribute an article to the special thematic issue of **FUTUREtakes**, “International and Cross-Cultural Perspectives on the Future,” that is scheduled for publication in late 2006. The issue will provide a forum for diverse perspectives on the future and will also focus on lifestyles and cultural values – that is, which ones are likely to survive in 2025 and which ones will become marginalized or extinct. In addition to promoting constructive dialog among ethnicities and cultures, the issue will help readers identify hidden culture-based assumptions that tend to limit futurist thinking.

We are planning to distribute the issue to embassies and to various international and ethnic organizations, both in Washington DC and in other national capitals.

Share your perspectives on the world stage! Send your articles to [futuretakes@cs.com](mailto:futuretakes@cs.com) or contact us for further information.

## Member Advertisements

As an added service to members of the US National Capital Chapter and to other WFS chapters, **FUTUREtakes** will publish short, textual, professional services related ads for members in good standing of any chapter. Normally a given member may publish an ad once per year in **FUTUREtakes**, although it may be published more frequently by mutual agreement. Members availing themselves of this service must provide their WFS chapter affiliation information. Although we will not knowingly publish any ad that we know to be false or misleading, **FUTUREtakes** assumes no responsibility for the accuracy of any ad. **FUTUREtakes** reserves the right to discontinue this service at any time and without prior notice.

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Mr. Snyder delivers high impact presentations and produces future marketplace assessments, techno-economic forecasts and scenarios and strategic thinking workshops based on a million-item data base and over 35 years experience in forecasting.

## Meet a Member *Geoffrey Frohnsdorff*

[Editor's note: This column, self-authored as is the custom of **FUTUREtakes**, is being published posthumously. The companion article "In Memoriam," this issue, honors our biographee's memory.]

**Geoffrey Frohnsdorff** has been a member of the WFS for many years, but he has only been active in the National Capital Chapter, in which he has been pleased to serve on the Outreach Team, for about three. Geoff grew up in England but has lived in the US continuously since 1960. Says Geoff, "I feel that I have gained much by living in two countries that are culturally close in some ways, far apart in others."

Geoff earned degrees in chemistry from the University of St. Andrews in Scotland (1953), Lehigh University in Pennsylvania (1956), and Imperial College, London (1959). While at Lehigh, he served as the freshman soccer coach and played professional soccer for the Trenton Americans. Most of his professional career was concerned with management of research on building materials, first for ten years with the former American Cement Corporation in California and then, for the last 28 years before his retirement in 2002, with

the National Institute of Standards and Technology (NIST) in Gaithersburg, Maryland.

Geoff describes himself not as religious but as a humanist, because his main concerns are about the present and future welfare of humans. By nature, he tends to be optimistic but, when he thinks about the effects of population growth, environmental degradation, and competition for water and other resources, he is pessimistic about what the future holds for humanity. His pessimism is heightened by the conflicts among religions, and between religions and reason, that take precedence over focusing on global human welfare. Geoff is appalled when he sees the time and effort put into arguments about public displays of the Ten Commandments but no effort being put into proposing the development and public display of generally-acceptable principles for living. In Geoff's opinion, such principles should include the Golden Rule. He also feels that there is a need for some sort of world federation to address human needs and welfare but that the needed leadership is lacking. Geoff hopes that the WFS can provoke concerns that will produce cooperative humanitarian action.

## In Memoriam\*

It is our sad duty to inform you of the recent death of **Dr. Geoffrey Frohnsdorff**, member of the US National Capital Chapter and former key member of the chapter Outreach Team. He died on March 5, 2006.

Geoff, born and educated in the United Kingdom before becoming a US citizen in 1970, had a distinguished career that culminated at the National Institute of Standards and Technology (NIST), formerly the National Bureau of Standards, where he was a scientist as well as chief of the Building Materials Division. There he was a recipient of the Department of Commerce's Silver Medal in 1982, an honor conferred for the building materials program that he developed – a program with worldwide impact. Geoff retired from NIST twenty years later.

Our chapter's own modern day Renaissance Man, Geoff earned degrees in mathematics, chemistry, and natural philosophy in addition to his doctorate in physical chemistry, and he served two years in the Royal Air Force. A recipient of a senior studentship by the Royal

Commission for the Exhibition of 1851, Geoff was invited this year with other recipients to a reception at Buckingham Palace in their honor.

In addition to the World Future Society, Geoff's memberships included the American Ceramic Society, the American Concrete Institute, the American Society for Testing and Materials, and the Washington Area Secular Humanists. Geoff is also a past president of the Jurupa Mountains Cultural Center in Riverside, California. His pastimes over the years have included cricket and soccer, followed by tennis and most recently hiking.

Geoff set the example in selfless service to our chapter. His vision, and the vision of other chapter members who were privileged to serve with him, will continue to guide the outreach efforts of **FUTUREtakes**. Geoff will be missed by all of us.

\* A substantial portion of this information was obtained from Dr. Frohnsdorff's obituary published in the *Washington Post*, Wednesday, March 15, 2006, p. B5.

## Transportation

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you see major shifts in living patterns and jobs?

**A:** There are significant changes possible that can mitigate this. For example, combine the “what-ifs.” We’ll see change when people are charged to use the roads. Also, things don’t just happen. You need incentives and disincentives. For example, in one case, the state government notified local governments that if they built beyond certain areas, the state would not help fund a new school, highway, or water treatment plant.

**C:** If the private sector sees the opportunity to leverage the new technology in cars to stream to you weather information, tour information, etc., then they may be more likely to invest in its installation.

**DISCUSSION POINTS** (send comments to [futuretakes@cs.com](mailto:futuretakes@cs.com)):

- Try being an urban or transportation planner. Which tradeoffs would you make regarding the needs of new residents, existing residents, environmental impact, and the tax base?
  - New residents (brought in by job growth) need places to live, but this aggravates road congestion.
  - Existing residents and environmental groups resist new development, although as costs of county government increase, then taxes must increase or services must be cut back.
  - Local governments want to maxi-

mize the tax base – which is larger for a given area if it is occupied by business than by private homes. However, local governments sometimes offer tax incentives to attract business.

- Also, what new metrics (if any) will you use in planning new communities or transportation networks, in addition to throughput, capacity, and investment potential?
- Will we see two types of road networks – smart roads and “other” – in 2020?
- If private airplanes become commonplace for everyday getting around, how will this change the various findings presented in this program?
- Will there be a transition to a steady state economy that does not require population growth, population density growth, or “sprawl and crawl”? How viable is a steady state economy at the various levels of government, especially the local levels?
- At what point will traffic blues be an impetus for new living and working patterns and a better quality of life, once the “misery index” is sufficiently high? Will increasing gasoline prices also be a driver (pardon the pun)? And, how will new living and working patterns, or the continuation of existing ones, impact family life and relationships with friends and neighbors?
- Do commute-related stresses such as commute times, road rage, etc. add to healthcare costs, both in the US and elsewhere?
- What are long-term consequences of people not being able to live where they work – a problem found in various US ski resorts? Also policemen, firemen, and teachers?

- Will the US still be an automobile society in 2040? Other countries? Why or why not?

The panelists: Patricia Nicoson, the panel moderator, is President of the Dulles Corridor Rail Association. Ron Kirby is Director of Transportation, Metropolitan Washington Council of Governments (MWCOG) and is an authority on demographic trends and the current long range transportation plan for the region. Ron has directed the transportation program for a number of years and previously worked as a researcher at the Urban Institute. Gary Maule is Principal, RTKL Associates, Inc. and an expert on transportation's impact on urban form. RTKL has prepared the plans for the Reston Town Center and a number of transit-oriented development projects in the region including Moorefield Station on the future Dulles Metrorail line and Shady Grove. Michael Huerta of Affiliated Computer Services, Inc. ([www.acs-inc.com](http://www.acs-inc.com)) is an expert on the role of intelligent technology in transportation.

## Future (Re) Takes

continued from page 17

than orbiting all other types of stars combined,” explained Frank Drake.

SETI Institute scientists study “extremophiles,” the life existing in extreme environments, to explore the possible limits of life on other worlds. Researchers are studying likenesses between early Mars and Chile’s parched Atacama Desert as well as other locations around the Earth. SETI scientists are researching life’s possibility at these locations and also plan to monitor the hazy atmosphere of Titan during the descent of the Huygens probe. The Life in the Universe Center is conducting perhaps the broadest program of any institution addressing the origins and nature of life in the universe. SETI/LITU hopes to contribute to the understanding of some of the oldest and most profound questions of science and philosophy.

You can learn more about SETI at <http://www.seti.org>.



### Visiting Washington DC?

The WFS US National Capital Region Chapter invites you to visit us! Our schedule of dinner programs, luncheons, book discussion group meetings, workshops, and other chapter activities is available on our Web site: [www.natcapwfs.org](http://www.natcapwfs.org).

For information on other World Future Society chapters, visit [www.wfs.org](http://www.wfs.org), then navigate to “chapters.”