

Public Written Comments Submitted to PCAST

**from February 22, 2011 to May 5,
2011**

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May 2, 2011

Drs. John P. Holdren and Eric S. Lander
President's Council of Advisors on Science and Technology
White House Office of Science and Technology Policy
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It is the purpose of this letter to suggest the need for a private/public partnership to establish the capability for grade 6 through 12 students to perform scientific experiment on actual physical systems using the internet.

The development of such a resource aligns with the educational technology recommendation in the 2010 PCAST Report to the President on “Prepare and Inspire: K-12 Education in Science, Technology, Engineering, and Math (STEM) for America’s Future” of insuring the availability of “deeply digital” instructional materials. It also aligns with the additional report recommendation regarding the creation of opportunities for inspiration through individual and group experiences outside the classroom.

The references in the attached pages detail more than a decade of small scale demonstrations of such remotely performed experiments. The most recent such demonstration that is still in operation is the MIT and Northwestern iLab capability. Based on that long record, it seems obvious that such small scale demonstrations are unable to attract a significantly large user base that would justify their continued public funding. As well in operating on such small scales it is not possible to realize any sort of operating economy of scale.

I would also note that given the always-on learning capability of such a system provide availability to not only students in the US but around the world. A well developed system could provide users the ability to choose from one of several languages in which the experiment user interface would be presented.

Given the participation of executives from both Google and Microsoft on PCAST, I wish to point out that more than one of the attached references addresses the operation of such a resource on a commercial basis.

Public support for such a resource could come in the form of grants to principal investigators at educational institutions to develop new experimental hardware, different levels of usage, and the associated teacher and student instructional materials that would enhance the learning opportunity. The same experimental hardware could provide different levels of challenge to enable each user to create a personalized learning experience. In the US support to develop new experimental hardware and associated teaching materials could be provided through the ARPA-ED entity suggested by PCAST in the above mentioned report.

Another source of support from either commercial or governmental entities could come in sponsoring the operation of specific experiments or facilities where experiments would be hosted. For example a company making photographic equipment could sponsor an experiment involving visible light spectrometry. Likewise a governmental entity may wish to sponsor a facility, in the US or abroad, in which experiments could be hosted, e.g. a US Department of Energy national laboratory and the Education City in Doha, Qatar.

I believe to be a realistic implementation of the paradigm of allowing 6-12 grade students to perform scientific experiments on actual physical systems using the internet would require having at least fifty units of at least twenty different experiments, i.e. approximately one thousand individual physical experimental units. The monetary investment to provide such would likely be in the range of a few tens of million dollars US. If such a system could allow experiments to be performed within 0.5 hour and had a combination of uptime and utilization of 90% the possible revenue based on a 99 cent/experiment income would be on the order of \$15 million dollars US.

That per use cost revenue could be provided in a number of different ways. In the case of a home schooled child the parents could pay that cost directly, e.g. PayPal, to broaden the STEM education beyond what they could provide in a home environment. Other parents could pay that cost to enable their child to complete an extra credit class project. In another situation a small school district might fund such access for its students as a more cost effective manner of providing an advanced STEM education. Larger school districts might provide such access to students attending a STEM magnet school.

As a chemist I sincerely appreciate the value of a hands-on laboratory experiment and know that my own current career was likely impacted by my own such experiences during my public school education. However, I also appreciate that in these current times there are not likely the resources to provide that same opportunity to every student in our public school system. Even when I had that opportunity in a public school system I can now appreciate that many of my peers in other public school systems did not have the same opportunity. So while we should strive to provide through our US public schools the opportunity to experience a hands-on laboratory environment we should also have a sense of realism and provide an alternative manner in which the essential parts of the same experimental experience can benefit those who will not have such a hands-on opportunity. I believe the current MIT and Northwestern iLab capability can provide such an alternative but that we need to move such educational resources well beyond the demonstration scale and that we can only do so through a private/public partnership.

Sincerely yours,

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Three Online Neutron Beam Experiments Based on the iLab Shared Architecture
Kimberly DeLong, V. Judson Harward, Philip Bailey, James Hardison, Gordon Kohse, Yakov Ostrotsky; International Journal of Online Engineering, 7(1), 2011.

Students at MIT have traditionally executed certain experiments in the containment building of the MIT nuclear reactor as part of courses in Nuclear Engineering and the third year laboratory course for Physics majors. A joint team of faculty and research staff from the MIT Nuclear Reactor Laboratory (MIT-NRL) and MIT's Center for Educational Computing Initiatives have implemented online versions of three classic experiments; (a) a determination of MIT reactor coolant temperature through measurement of thermal neutron velocity, (b) a demonstration of the DeBroglie relationship of the kinetic energy and momentum of thermal neutrons and study of Bragg diffraction through a single copper crystal at various orientations, and (c) a measurement of beam depletion using a variety of shielding filters. These online experiments were implemented using the LabVIEW® virtual instrumentation package and the interactive version of the iLab Shared Architecture (ISA). Initial assessment of the online experiments indicates that they achieve comparable educational outcomes to traditional versions of the labs executed in the reactor containment building.

New Project Promotes Virtual Science Labs, Despite Skepticism
Jeff Young, The Chronicle of Higher Education, December 10, 2009.
<http://chronicle.com/blogs/wiredcampus/new-project-promotes-virtual-science-labs-despite-skepticism/9162>

Can online science laboratories replace the experience of sitting at a lab bench with beaker in hand? No way, say many professors. But Kemi Jona, director of Northwestern University's Office of Science, Technology, Engineering and Math Education Partnerships, argues that virtual labs are at least as good, and in some cases better, at teaching students concepts to prepare them for modern laboratory research.

He's a leader of iLabCentral, an effort by colleges to share their high-end scientific instruments with professors and high-school science teachers over the Internet to support virtual science labs. The project is run by Northwestern and the Massachusetts Institute of Technology and supported by a \$1-million grant from the National Science Foundation.

In a presentation to leaders of the Southern Regional Education Board here Wednesday during its meeting on emerging technologies, Mr. Jona demonstrated the system, performing a laboratory experiment about detecting radiation. He gained access to a Webcam pointed at a Geiger counter in a lab at the University of Queensland, in Australia. He entered a few simple instructions via a Web-based form, requesting that the Geiger counter take measurements at three different distances from a radiation source. A minute or two later, the instrument shown on the Webcam buzzed to life, moving to each of the assigned settings and taking the readings.

Remote laboratories extending access to science and engineering curricular, Martyn Cooper and José M.M. Ferreira; 342 IEEE Transactions on Learning Technologies, 2(4), October-December 2009, 342-353.

This paper draws on research, development, and deployment of remote laboratories undertaken by the authors since 2000. They jointly worked on the PEARL project (<http://iet.open.ac.uk/pearl/>) from 2000 to 2003 and have worked on further projects within their own institutions (the Open University, United Kingdom, and the University of Porto, Portugal, respectively) since then. The paper begins with a statement of the rationale for remote experiments, then offers a review of past work of the authors and highlights the key lessons for remote labs drawn from this. These lessons include (1) the importance of removing accessibility barriers, (2) the importance of a pedagogic strategy, (3) evaluation of pedagogic effectiveness, (4) the ease of automation or remote control, and (5) learning objectives and design decisions. The paper then discusses key topics including assessment issues, instructional design, pedagogical strategies, relations to industry, and cost benefits. A conclusion summarizes key points from the paper within a review of the current status of remote labs in education.

Content-rich interactive online laboratory systems, El-sayed S. Aziz, Sven K. Esche, Constantin Chassapis, Computer Applications in Engineering Education 17(1), 2009, 61-79.

Online learning environments are rapidly becoming viable options for offering students a bridge from theoretical concepts to practical engineering applications. They represent collections of integrated tools that provide a delivery mechanism for rich learning content, advanced assessment capabilities as well as affordable access to a wide range of educational resources. Such online learning environments have been used at Stevens Institute of Technology (SIT) for a number of years to provide undergraduate engineering students with a comprehensive laboratory experience based on content-rich and flexible remote and virtual laboratory experiments. These Web-based educational tools were developed using various open source programming languages and free software applications. As discussed in this article, these open source components form a powerful combination for the cost-efficient development, implementation and sharing of Web-based virtual experimentation systems. This article describes the delivery methods for online experiments and the corresponding software modules implemented, which were integrated into a comprehensive student laboratory experience currently being used at SIT in a sophomore-level core undergraduate course on solid mechanics taken by all undergraduate engineering majors as well as in a junior-level course on mechanisms and machine dynamics for mechanical engineering majors. Furthermore, some results of the learning outcomes assessment for online experiments conducted over several years at SIT are summarized.

The iLab shared architecture: a web services infrastructure to build communities of internet accessible laboratories, V.J. Harward, J.A. del Alamo, S.R. Lerman, P.H. Bailey, J.Carpenter, et al.; Proceedings of the IEEE, 96(6), 2008, 931-950.

The Massachusetts Institute of Technology's iLab project has developed a distributed software toolkit and middleware service infrastructure to support Internet-accessible laboratories and promote their sharing among schools and universities on a worldwide scale. The project starts with the assumption that the faculty teaching with online labs and the faculty or academic departments that provide those labs are acting in two roles with different goals and concerns. The iLab architecture focuses on fast platform-independent lab development, scalable access for students, and efficient management for lab providers while preserving the autonomy of the faculty actually teaching the students. Over the past two years, the iLab architecture has been adopted by an increasing number of partner universities in Europe, Australia, Africa, Asia, and the United States. The iLab project has demonstrated that online laboratory use can scale to thousands of students dispersed on several continents.

Science Labs of the Future, Kahliah Laney, Converge magazine, Summer 2008, p 29.

<http://www.convergemag.com/edtech/Science-Labs-of-the-Future.html>

For some MIT undergrads, the science lab is anywhere they want it to be. Through an online science laboratory, or iLab, students can remotely access lab materials and devices via the Web. Pretty soon, select high schools will also have this option.

And options are just what Kemi Jona, a research associate professor of Learning Sciences and Computer Science at Northwestern University, wanted to bring to K-12 science. Jona thought the iLab would give K-12 science teachers lab alternatives. So Northwestern University and MIT developed the iLab Network Project to bring this resource to K-12, starting with high schools.

World Wide Student Laboratory - The White Paper. DiscoverLab Corporation, 2006.

<http://discoverlab.com/References/WWSLWhitePaper2006.pdf>

The World Wide Student Laboratory, WWSL, is an Internet infrastructure for science experimentation and education, offering 24/7 remote access to laboratory experiments and science education resources. Experimental setups are located all over the globe, at some of the world's finest educational institutions, and these experimental setups can be accessed by students everywhere.

The WWSL is focused on improving the quality and reducing the cost of advanced educational laboratories. These laboratories represent the most difficult and expensive segment of science, engineering and medical education. The WWSL not only improves accessibility, it also makes ownership of such laboratories more economical. The WWSL can serve secondary and post-secondary and K-12 students anywhere in the world.

Using the WWSL's fundamentally new approach, educational institutions will be able to afford better facilities for the education they provide, access the best lab facilities in other institutions, and substantially broaden the number of lab study items in their curriculum.

Exploiting distance technology to foster experimental design as a neglected learning objective in labwork in chemistry, C'edric d'Ham, Erica de Vries, Isabelle Girault, and Patricia Marzin; Journal of Science Education and Technology, 13(4), 2004, 425-434.

This paper deals with the design process of a remote laboratory for labwork in chemistry. In particular, it focuses on the mutual dependency of theoretical conjectures about learning in the experimental sciences and technological opportunities in creating learning environments. The design process involves a detailed analysis of the expert task and knowledge, e.g., spectrophotometry as a method for the determination of the concentration of a compound in a solution. In so doing, modifications in transposing tasks and knowledge to the learning situation can be monitored. The remote laboratory is described, as well as the specific features that alter the degree of fidelity of the learning situation in comparison with the expert one. It is conjectured that these alterations might represent actual benefits for learning.

A Student-designed, remote-controlled experiment in chemistry, Cedric d'Ham, Isabelle Girault, C. Caix-Cécillon; CALIE 04: International Conference on Computer Aided Learning in Engineering Education, Grenoble, France, February 2004, 255-256.

One of the specificity of the experimental sciences courses (i.e. biology, chemistry, physics) is the need for the students to interact with both the domain of real objects and observable things and the domain of ideas (Millar et al. 2002). In distance education, ideas are easily transmitted through classic media. The laboratory work, which specifically deals with the objects and the observable things, has been transposed in distance education following two ways: the use of simulations (de Jong & van Joolingen 1998) and the use of remote-controlled experiment (Cooper et al. 2002). Both of these solutions set out difficulties. Simulations are a representation of the real objects, and, in fact, are driven by theories that belong to the domain of ideas. Remote-controlled experiments do represent the domain of real objects, but they often are a transposition of classroom experiments, in which the function of the student is limited: learners have to execute procedures without being aware of the important choices made by the designer of the protocol (Séré, 2002). This difficulty is enhanced in distance education, by the fact that students don't handle the materials.

Our aim is to present a prototype of a remote-controlled experiment, in which the domains of ideas and real objects are closely connected. In this case, theory is used and questioned in order to understand the practical work. The experimental part is not the first step, but appears once the learners have designed the experiment, which will help them to memorize and understand the procedures (Séré, 2002). In this demonstration, we will focus on the software that students use to design their experiment.

Web enabled remote laboratory (R-LAB) framework, Ji Hua and Aura Ganz; 33rd ASEE/IEEE Frontiers in Education Conference, November 5-8, 2003, Boulder, CO.

In this paper we describe a web enabled remote lab (R-Lab) framework that facilitates remote access to a physical laboratory. This framework enables us to bridge time, space, work force and safety constraints imposed by real laboratory experiments. We have implemented and deployed the R-Lab framework in a Computer Networks lab that includes networking equipment such as routers, switches, wireless access points, etc. The R-Lab framework has the following unique features:

- 1) It enables real-time collaboration between the students in each group and between the students and the lab instructor. Each member can be located in a different geographical location.
- 2) The R-Lab architecture can be extended to support other remote laboratories, either in engineering or science fields, where the lab equipment can be accessed and controlled remotely via a programmable interface.

A global remote laboratory experimentation network and the experiment service provider business model, Tor Ivar Eikaas, Christian Schmid, Bjarne A. Foss and Denis Gillet; Modeling Identification and Control , 24(3), 2003, 159-167.

This paper presents results from the IST KAII Trial project ReLAX – Remote Laboratory eXperimentation trial (IST 1999-20827), and contributes with a framework for a global remote laboratory experimentation network supported by a new business model. The paper presents this new Experiment Service Provider business model that aims at bringing physical experimentation back into the learning arena, where remotely operable laboratory experiments used in advanced education and training schemes are made available to a global education and training market in industry and academia.

The business model is based on an approach where individual experiment owners offer remote access to their high-quality laboratory facilities to users around the world. The usage can be for research, education, on-the-job training etc. The access to these facilities is offered via an independent operating company – the Experiment Service Provider. The Experiment Service Provider offers eCommerce services like booking, access control, invoicing, dispute resolution, quality control, customer evaluation services and a unified Lab Portal.

Remote controlled experiments for teaching over the internet: a comparison of approaches developed in the pearl project, Martyn Cooper, Alexis Donnelly, Jose Ferreira; ASCILITE 2002, 8-11 December 2002, Auckland, New Zealand.

The PEARL project has been developing approaches for enabling real-world experiments to be conducted by students working, remotely from the laboratory, over the Internet. This paper describes these approaches and compares and contrasts three specific implementations of them both at the level of the nature of the practical work they support and the technical infrastructures that enables this to be conducted remotely. Initial evaluations by experts and representative student subjects are reported and key lessons for further development work by the project consortium, or others seeking to implement remote experiments, are outlined.

A scalable system architecture for remote experimentation, Sven K. Esche, Constantin Chassapis , Jan W. Nazalewicz and Dennis J. Hromin; 32nd ASEE/IEEE Frontiers in Education Conference, November 6 - 9, 2002, Boston, MA.

The emergence of new fields is forcing engineering educators to constantly reconsider both the content and means of delivery of modern curricula, which requires the conception, implementation and assessment of innovative pedagogical approaches and technical realizations. Many Internet-based tools are currently being introduced that promise to enhance the educational experience of on-campus students and expand the reach of unique educational offerings beyond the local campus. A laboratory approach based on remotely accessible experimental setups was developed and piloted at Stevens. This paper discusses the development of scalable system architecture for remote experimentation, which enables the interaction of many users with a network of spatially distributed experimental devices. The paper concludes with an outlook on possible directions for future remote laboratory developments based on an assessment of the main advantages and shortcomings of the current system.

National Science Foundation - Award Abstract #0232861, SBIR Phase I: World Wide Student Laboratory, initial amendment date: December 11, 2002, Constellation Technology Corporation, Largo, FL.

This Small Business Innovation Research Phase I project will evaluate the merit and feasibility of the World Wide Student Laboratory (WWSL). WWSL is a scalable Internet-based education infrastructure that enables students, under the guidance of their educators, to have 24x7 remote access enabling them to carry out, advanced educational experiments in modern laboratories at leading universities and research centers worldwide, regardless of the students' location. This approach will improve the quality of the laboratory experience and substantially reduce the cost of the educational laboratory, which is the most difficult and expensive segment of science and engineering education to provide. Using WWSL, educational institutions will be able to afford better facilities for the education they provide, access to the best lab facilities in other institutions, and substantially broaden the number of lab study subjects in their curriculum. Individual instructors can customize the content and methods of lab for their students. WWSL will make available all materials necessary for fulfillment of the lab work.

The economic and societal benefits of the WWSL approach are based on the potential a dramatic increase in the efficiency of existing lab facilities in universities. WWSL can serve traditional universities, colleges and high schools, as well as distance education institutions.

Demonstration of actual chemical education experiments in real-time via the Internet, E.A. Dorko, B. Cappleman, E. Mader, W. Overfield, N. Williams, C.N. Roop, G.D. Brabson, A. Alvarado, St Pius X High Sch, Albuquerque, NM 87120 USA, Univ New Mexico, Dept Chem, Albuquerque, NM 87131 USA; Abstracts of Papers of the American Chemical Society (AUG 2001) Vol.222, pt.1, p.U257-U257.

A series of experiments is being developed to demonstrate the kinetic theory of gases, which will be accessible over the internet for remote control. Data will be taken visually either by the use of a video transmission or by digital read-outs from the instruments. The initial experiment is a demonstration of Boyle's Law. The apparatus consists of a gas-tight syringe on a stepper motor platform. The syringe is connected to a pressure transducer. A camera is focused on the syringe to allow a visual reading of the volume. Software utilizing VisualBasic 6.0 and LabVIEW has been used to write programs to allow computer control of the syringe plunger. Output from the transducer is sent to the computer via the same software. The programs are installed in a server, which is then passed via the computer network at UNM for Internet access. Clients need to have Internet Explorer 5.0 and RealPlayer 8.0

The internet chemistry set: web-based remote laboratories for distance education in chemistry, Frederick A. Senese, Christopher Bender, and Jennifer Kile; Interactive Multimedia Electronic Journal of Computer-Enhanced Learning (IMEJ), 2(2), Oct. 2000.

The convergence of modern data acquisition technologies with the Web's interactivity, connectivity and multimedia capabilities presents an exceptional opportunity for distance education in the physical sciences. Web mediated access and control of laboratory equipment can improve utilization of expensive and specialized instruments, facilitate collaborative data sharing and analysis, and provide essential practical experience in physical science courses delivered at a distance.

This paper describes a remotely controlled experiment for determining the rates of fast chemical reactions. The experiment is not a simulation; it involves actual equipment controlled in real time from remote locations on the Web. The experiment is the first in a series designed to provide a pedagogically sound on-line laboratory experience for Web-delivered general chemistry courses. Students use the experiment's Web interface to collect data, to obtain interactive technical support and background information, and to display and analyze results. Each experiment is designed to encourage sharing of data and collaboration with users at other institutions, providing students with a valuable first look at work in a distributed laboratory environment.

Radiation Experiments for Secondary Students via the Internet, D. R. Porterfield; Los Alamos National Laboratory, LAUR-97-4372, 1997.

To the outside observer, it seems those interested in applying the Internet to science education are content to use it simply to access information from a distance. For example, instead of accessing information from a book at the local library the Internet becomes the tool to access this information from a far-removed site and that similar access is shared among many. When "advanced" applications of the Internet are proposed these seem to enhance the information content by using multimedia content or allowing the student to simulate an experiment.

I would propose that we truly advance the usage of the Internet for science education by allowing the student to actually conduct actual real-time experiments via the Internet. This would provide students another resource to improve their level of science education.

A proposal for a remotely shared control systems laboratory, M.F. Aburdene, E.J. Mastascusa, R. Massengale; Proceedings. Frontiers in Education. Twenty-First Annual Conference. Engineering Education in a New World Order. 1991, 589-92.

The authors present a futuristic approach to sharing one of the most expensive components of engineering education, the laboratory. The objective of the shared laboratory is to improve the effectiveness of the control and instrumentation laboratory experience for undergraduates. An experimental station can be operated from a computer in a classroom, or from a computer at a remote location or another campus. A multimedia configuration using a graphical user interface and remote logon capability is envisioned. The system will provide the tools to predict system performance with a simulation, show data as they are generated, analyze data after they are taken, and show a visual presentation of the experimental configuration with video disc. This facility will permit cooperative development of laboratory experiments and comparison of pedagogical approaches with others who use the experimental packages (software and hardware).

From: "Kim Bent" <sciencebug@charter.net>
Subject: for Executive Director Deborah Stine
Date: Mon, March 14, 2011 2:35 pm
To: pcast@ostp.gov

Dear Ms. Deborah Stine,

I just read your blog on viewing the space shuttle launch with you daughter.
It was great!

My name is Kim Bent. I am the Foundation Director of Catch the Science Bug Foundation, Inc., a non profit with the mission to inspire children to continue to better our world through science! We want kids to KNOW that they too could make valuable contributions by utilizing science, engineering, technology and math in private or professional life.

We accomplish our mission through our:

- (1) Rhode Island PBS science series
- (2) Interactive website (www.sciencebug.org)
- (3) In-person educational science programs

We are four episodes away from having a total of 13 episodes, enough to go national. The foundation was rated as one of the top educational non-profits by its clients and the website has won two awards.

My husband and I attended a launch in May of 2010 and although I did get enough video just on my camera (not the one we use for PBS productions) to make a blog post..I just want to make an entire episode and be at a launch!

Please check out our website at www.sciencebug.org
<<http://www.sciencebug.org/>> when you have a chance.

I would really like to let the new STEM Education Committee formed on March 4th know we exist and see if they have any contacts to funding resources. IF you know of any organization that can sponsor this production as well, I would love to hear from you.

Thank you.

Sincerely,

Kim Bent
Founder
Catch the Science Bug Foundation
Nine Devonshire Street
Worcester, MA 01605

508-854-1681

Free educational website: sciencebug.org
Traveling science programs: catchthesciencebug.com
"It's a big wide world to wander, Full of mystery and surprise!"
-From the Catch the Science Bug Theme song

From: Leif Peters

Subject:

Meaningful Use
suggestion

Date:

Tue, March 22, 2011

To:

10:56 am
pcast@ostp.gov

Hello,

I suggest that document imaging capabilities be added to Meaningful Use. Without document imaging, how else can you incorporate the patients past historical data that is in their paperbound chart? What drug allergies or other data is lost by not accommodating the past patient data. So patient safety is at risk without scanning in the patient chart.

How can a doctor truly have "meaningful use" of an electronic system that disregards past history?

Best regards,

Leif Peters
Healthcare Development Manager

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p. 813.875.7575 x. 383 | f. 813.875.7705
e. lpeters@accusoft.com

accusoft.com <<http://www.accusoft.com/>>

[image: cid:3320825790_9338726]

From: "Stan Doore" <stan@doore.net>
Subject: RE: [USMA:49910] Copy of HR1 22 feb 2011 (usma@colostate.edu)
Date: Mon, February 28, 2011 3:04 am
To: globaleconomy101@gmail.com,"U.S. Metric Association" <usma@colostate.edu>
Cc: senator_bingaman@bingaman.senate.gov,mike_johanns@johanns.senate.gov,pcast@ostp.gov

Tablet PC learning SI metric should be implemented in all schools.

Begin learning with English, math, physics & How Stuff Works." These are needed in everyday life.

Inexpensive tablet PCs, including courses and tests on inexpensive memory sticks, should replace textbooks. It's less expensive and more flexible than paper textbooks & current education practice.

Learning then could take place any time in any place on any path at any pace & with connection to the Internet, learners would have broader access to other information sources.

Stan Doore

Congress Cuts Science and math programs in our schools. What?

Congress voted to authorize HR1 - the appropriations bill which passed the House over the weekend with huge cuts in government spending. Several parts of this bill cut funding for science, technology, engineering and math (STEM) programs from America's K - 12 schools. Now the Senate version will be written. It's time to call your Senator, the President, your local newspapers, etc. Forward this to them, or write your own version of it, but let them know where you stand on cutting STEM funding.

STEM educational funding provides the basis for the innovation and creativity necessary for our children and grandchildren to be successful in the sciences, technology, engineering and math fields from which all new technologies, new sciences, and new industries will evolve tomorrow and which will secure our future. STEM is the foundation for America's success in the global marketplace of ideas, trade, business and job creation. Without STEM funding we are essentially cutting the future of our nation off at the knees and relegating our children and grandchildren to third world status.

Please call me at 1-205-765-6090 to let me know where you stand on this issue. Time is running out for the Senate. I for one will fight loudly and vocally, locally and nationally, against any cuts to STEM programs. This is more than just money, it's the future of our nation and children.

Getting our debt under control is vitally important to our future. Cut any area that you wish, including defense, but if we cut STEM programs we are putting the US further behind, by at least a generation, in technological innovation. We will be dependent upon those nations that do invest heavily in STEM programs such as India, Brazil and China for our new technologies. Is that what we want? I will do everything in my power, with every contact I have around the nation, to make sure that STEM is funded above all else. Our future depends upon it. Will you fight for STEM funding too? Is our future important to you?

I understand the dire straits our nation are in where the national debt is concerned, and agree that cuts must be made in spending to reign in debt - at the local and national levels. The national debt to GDP ratio stands at ~93%. This number is accelerating and will exceed 100% of GDP in a few

years at our current rate of spending. We have been here before though - several times as a matter of fact. For the year 1945, the debt to GDP ratio was ~116%, in 1946 it was ~121% and in 1947 it was ~105% of GDP.

Today, we are somewhat more fortunate in that debt to GDP is at ~93% even with two costly wars. The rate of acceleration of that ratio is the worrying part.

Another set of facts of interests are that the US has always operated with a positive debt to GDP ratio, from before George Washington was president - except for one two year period from 1834 to 1836. And that was a fluke because Andrew Jackson shut down the national bank by 'de-funding' it, which skewed debt to GDP away from the federal level to the state level, which in turn exacerbated a real estate bubble of the day, (yes, it was based on speculation, on avarice and greed, not at all unlike the one we have experienced recently), which drove the nations economy into the ground for almost 8 years in the 1830's and 40's. So I understand the need to control debt to GDP to keep it well under 100%, because to exceed 100% means that we really would be spending more than we are taking in as a nation - thank god we are not yet doing that.

What does this mean? Wars are costly. We pay for them long after they're over.

But in doing so, we must remember that the future of our nation, our economic sustainability, will only be found in those new sciences and new technologies, and the new industries which evolve from them, that our children and grandchildren develop - but only if they have the right stuff from the start.

STEM funding represents their future, their jobs, their technologies. Increasing funding for STEM programs, rather than cutting that funding, makes more rational sense than any other action our government can take. It's more important than defense. It's more important than all other programs combined. It's our future.

So keep STEM programs going. Fund them at higher levels. Get rid of the hurdles our children must jump over to be competitive in the sciences and in technology with the rest of the world. Get the SI metric system implemented nationally - for trade, for science, for the future. Metric is a foundation of STEM. STEM, metric and the future of the US are inextricably connected.

What are your thoughts on this issue? Call your congressman. Call your senators. Call the President. Call the pope. Call whomever it takes, . but we need STEM funding to grow so that our nation grows too. Any real economic recovery over the long-term is and always has been tied directly to innovation and creativity in the sciences. So we need to get this right today, so that tomorrow has a fighting chance.

Thanks!

Tim Williamson

15926 Hwy 216

Brookwood, Alabama, 35444-3703

USA

1-205-765-6090

www.metricamerica.org

<<http://www.google.com/url?q=http%3A%2F%2Fwww.metricamerica.org%2F&sa=D&sentz=1&usg=AFQjCNEEm-TQTETjEiX0059gVt2KaxSmYQ>>

<<http://www.google.com/url?q=http%3A%2F%2Fwww.metricamerica.org%2F&sa=D&sentz=1&usg=AFQjCNEEm-TQTETjEiX0059gVt2KaxSmYQ>>

From: "Robert Halford" <robertjhalford@gmail.com>
Subject: Re: A response to PCAST regarding "Designing a Digital Future"
Date: Mon, March 7, 2011 10:47 am
To: pcast@ostp.gov

PCAST team,

I have forwarded the attached (with a couple of typo corrections) response to your report on "Designing a Digital Future" to a few selected companies with the potential for both need and support. They include a leading documents company, a leading security company, a leading storage company and a leading medical records company. We have decided to implement a demonstration prototype most applicable to one of these companies but can only develop at a snails pace due to limited development funds.

If there is anything at all that you can do to help it would be appreciated. Even a recognition of value or insight might help.

Respectfully,

Robert J. Halford
Micro_Mirroring Technology
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On Thu, Jan 13, 2011 at 11:14 AM, Robert Halford
<robertjhalford@gmail.com>
>wrote:

> Dear PCAST Team,

>

> The attached 9-page .pdf document is a response to your presidential
> briefing on "designing a digital future". I've been wrapped up in that
> process for the past decade myself; however self-inflicted. I enjoyed
> reading through it and decided to reply immediately. I certainly agree with
> your findings and predictions. I also believe that I might have some
> solution to a few of your outstanding concerns.

>

> Perhaps not all of your team will be interested in my response but I would
> certainly like to see those with specific interest in the area of data
> reliability and data integrity have a read. My goal is to find help in ways
> of getting this technology developed, integrated into systems and into the
> hands of users of critical data. Dollars are important too; we've bet the
> farm on this project and are currently running on empty. I'm sure that you
> appreciate the difficulty in getting change accomplished both within and
> outside established companies.

>

> I have disclosed this technology to many companies via NDA prior to
> receiving the patent and to many more without a DA since. What is disclosed
> within the document has been published in the patent applications or
> elsewhere.

>

> Sincerely;

>

> Robert J. Halford

> Micro_Mirroring Technology

> 18703 67th Ave. Chippewa Falls, WI 54729

>

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>

> cc

> Irene Qualters, NSF

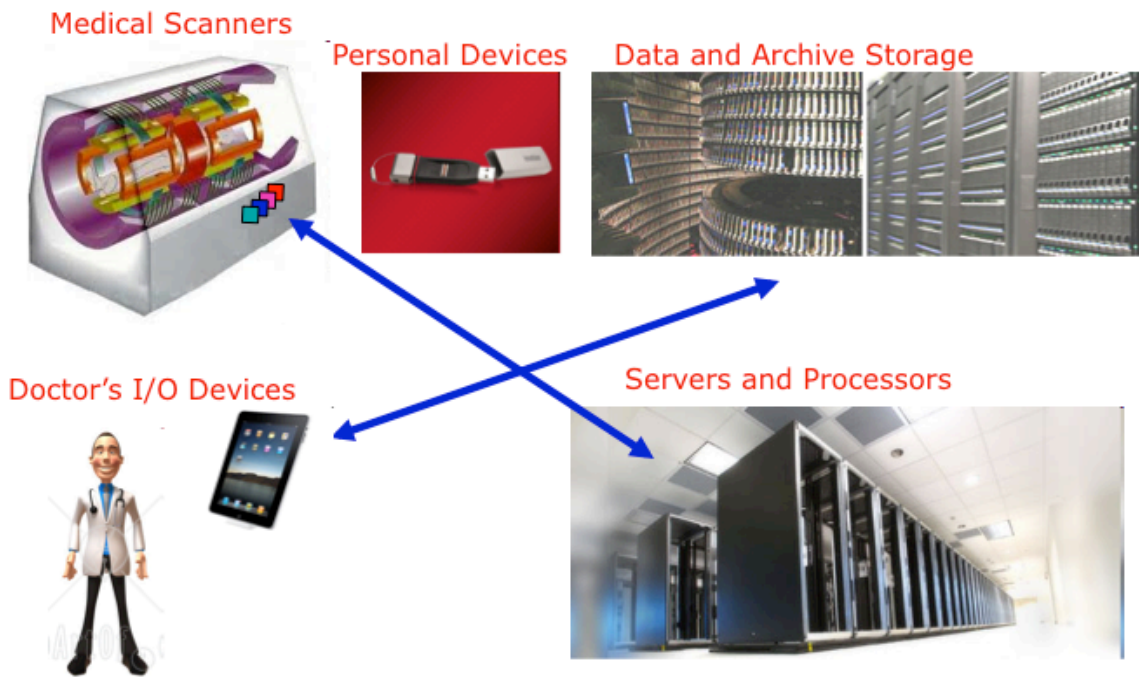
>

A proposal to the President's Council of Advisors on Science and Technology

Micro_Mirroring, a revolutionary data protection solution

Robert J. Halford, Micro_Mirroring Technology

All Way End-to-End Data Protection Interconnect for Healthcare Data Records



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I have read '[Designing a Digital Future: Federally Funded Research and Development in Networking and Information Technology](#)' and agree with your findings and the challenges faced by 21st century technologists designing fail-safe systems and critical data applications.

I'm an electrical engineer with experience at companies including Cray Research and Silicon Graphics. Most of my work has been in the architecture, design and development of HPC storage systems including I/O systems, HDDs, SSDs, HPC system channels and error control coding. At Cray Research I was Chief Engineer for I/O and was granted several patents in the fields of systems and storage.

In recent years I have been working independently on some of the very issues that you illuminate in your briefing. I call my resultant work and proposed solution Micro_Mirroring Technology and present it as "[A solution for tomorrow's physical storage resiliency and data integrity requirements](#)". The technology is based on intellectual property primarily supported by U.S. Patent No. 7,103,824 titled [Multi-dimensional data protection and mirroring method for micro level data](#).

A number of well designed studies have been completed and papers written presenting large scale analysis of errors within contemporary processing and storage systems. Google, CERN, Carnegie Mellon University, University of Wisconsin, NetApp Inc., University of Toronto and the University of Illinois have led many of these efforts. They report that error rates tend to run higher than specified by vendors of Hard Disk Drives, Flash memory, DRAM memory and small dimension circuitry. Also quite often there are gaps in the protection systems that allow errors to propagate.

Data availability, data reliability, data integrity, data resiliency, data consistency and data security are all critical areas of design for these new important data applications. The same commodity microprocessor, network and storage technology I'm using to write this proposal will also be used by a doctor to evaluate healthcare records, make medical decisions then write procedures, prescriptions and edit the existing records. For the case where a doctor is using a hand-held tablet pc coupled to a data-base on a cloud server the amount of hardware and software components involved can be extensive. And data integrity and reliability protection isn't up to the standards expected or desired for such critical information. But this has already become the new norm with the tsunami of mobile devices and applications. It is imperative that applications involved with critical information incorporate improved data protection techniques in order to achieve a valid end-to-end data integrity coverage.

Micro_Mirroring incorporates modern algebraic concepts to better protect, detect, correct and recover data corrupted by any of hundreds of failure modes within lengthy networks, high-speed digital circuits and high density storage devices. Micro_Mirroring is designed to complement but not replace other new solutions such as those that manage the storage consistency issues, data compression and de-dup, or standards for cloud based object data. I note your reference to Google's Big Table design. So, there is no need to throw any good little babies out with the bathwater.

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I would like to further convey what I propose is a necessary shift in the way critical data such as object based healthcare records are protected. Micro_Mirroring addresses these issues in the following priority.

1. Immediate encoding is mandatory for a statistically reliable write or data capture and becomes the very foundation for data integrity.

Encoding should occur the instant data is "sensed" or "computed" and before it is moved elsewhere within the system. The physical integrity of even the first circuit paths or storage media invoked must be assumed less than perfect. With critical systems that are very large and very fast even small error rates will statistically come into play. In the case for medical records this requirement must be addressed at all nodes including image or DNA sensors, record storage and even mobile devices entering or modifying digital record information. Presently when data is corrupted it is difficult to point a finger at what was responsible. The requirement for a reasonable level of data integrity quality will soon become akin to food quality or vehicle safety quality. Instances of poorly protected data could get litigated when determined to be responsible for losses. Micro_Mirroring is designed specifically to replace existing less effective yet more complex solutions.

2. Unlike conventional data protection approaches Micro Mirroring provides each data object an integrated data protection capability.

In a nutshell Micro_Mirroring differs from conventional mirroring by making an algebraic copy of each data byte in place of an exact binary copy. The algebraic copy can physically accompany the binary data byte or be dispersed as with conventional binary mirrors. Thus Micro_Mirroring can operate either in-band or out of band. The Hamming distance of each two-byte codeword is maximized for error detection and correction purposes. This and other attributes make this small change a disruptive game changer for data reliability and resiliency. Most advantageously, this capability lends itself to the emerging format of objects vs. records and files.

Simple guidelines permit software to apply this technology when and where necessary. Micro_Mirrored data can be encoded, decoded or verified at any location within a system and at any time. The advent of multiple cores and embedded cores may favor a software implementation for most applications. However since both the encoding and decoding processes are single step XOR functions they can be done very efficiently in the simplest of logic circuits to attain any desired bandwidth.

3. Micro Mirroring, like raid-1 and raid-10 is 50 per cent efficient but provides full resiliency to dual failures. When considered in groups of eight units it provides a high probability of recovery for three and even four simultaneous failures.

Certainly single failure resiliency is normally required and dual or triple recoveries are often specified. Conventional mirroring via RAID-1 methods provides single failure resiliency and RAID-10 provides but a partial capability for dual failures.

[4. Micro Mirroring provides such a powerful data validation capability that it can be advertised as a " data certification receipt " for each object verified. It also provides an optional "byte-by-byte log of data integrity" when errors are determined.](#)

A really complete end-to-end data validation has long been desired. Over the past decade the SNIA & ANSI standards bodies have attempted to meet this requirement. While making an improvement it is but a partial 'band-aid' solution with very limited error detection and no error correction capability thus leaving much to be desired.

For data validation purposes Micro_Mirroring checks each 8-bit data byte against its very powerful 8-bit CRC / ECC byte. Each linear data byte can self-detect and self-correct two random bits in error. For a bit error rate of 10^{-12} the probability for an undetected error for conventional mirroring is 8×10^{-24} and the same probability for Micro-Mirroring is 2.4×10^{-59} . These calculations are for a single data byte.

The combination of the linear byte validations along with a HASH signature result in a very robust and high-fidelity data certification method. The summary of all errors and corrections provide for a fine-grained error isolation report.

[5. Micro Mirroring amplifies the current Hash signature's ability to protect against the most common trick used to disguise maliciously altered data.](#)

An attribute of Micro_Mirroring arises when both the original data object and the algebraic data object provide unique Hash signatures. Now any monkey-ing with the original data object in multiple places in order to hide an altered digit or so becomes much more difficult. And when data is dispersed four ways four additional HASH signatures become available. This makes it possible to consider a total of six HASH signatures when validating each data object.

[6. Micro Mirroring improves upon the commonly used ARQ algorithm to make high-speed system channels resilient to line failures and become more autonomic.](#)

Persistent single-bit line failures are a common fault within system channels. Conventional channels such as AMD's HyperTransport interface utilize an age-old recovery algorithm called ARQ, Automatic Retry Request. If a data transport packet is received correctly an acknowledge, ACK, signal is returned to the transmitter logic and the next data packet is transmitted. If the data packet is determined to be in error a negative acknowledge, NACK, signal is returned and the original packet is retransmitted. A persistent error or failed bit path results in an endless retry loop or the necessity to down the path and if possible reroute the data.

With Micro_Mirroring it is possible to send the algebraic copy of the data packet upon reception of the NACK signal allowing the receiver to recover the original data and also identify and log the exact bit path locations of the fault.

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Summary of Micro_Mirroring's advantages and attributes:

- Micro_Mirroring specifies an immediate data encoding for replication and multi-channel dispersal for a true end-to-end protection of data objects.
- Micro_Mirroring provides each data object with its own unique integrated data protection mechanism with the ability to self-detect and correct two random bits per data byte.
- Micro_Mirroring provides resiliency to multiple simultaneous catastrophic hardware or data failures and many other error modes.
- Micro_Mirroring provides a very robust high-fidelity data validation, correction and certification capability plus an optional data integrity log with byte level granularity.
- Micro_Mirroring obsoletes simple binary mirroring for data resiliency by making data many orders of magnitude less prone to random bit error corruption.
- Micro_Mirroring makes data objects more secure by amplification of HASH signature checks.
- Micro_Mirroring has the capability to make systems and channels more autonomic.
- Micro_Mirroring is efficiently encoded and decoded via either software or hardware methods.
- Micro_Mirroring is well suited for protecting ultra long DNA data objects.
- Micro_Mirroring has the flexibility to address future systems' error modes.
- Micro_Mirroring should lower the total life cycle cost of servers and storage by eliminating or simplifying many point products and associated software maintenance.
- Micro_Mirroring should greatly improve on error and failure isolation for ease of system maintenance.
- Micro_Mirroring can protect and validate your digital healthcare records even when they are on a USB memory stick(s) in your pocket or purse or embedded on your person.
- Micro_Mirroring provides both vendors and users of all types of critical records a unique new "industrial strength" comfort level in data safety and quality assurance.

A final consideration: Micro_Mirroring replication is very similar to DNA replication

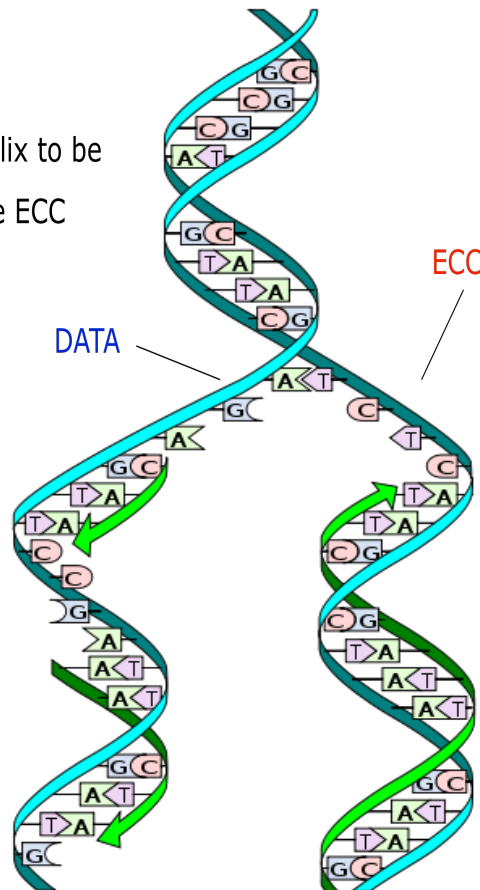
- Both replicate with a non-identical pairing (unlike conventional binary mirroring) for reasons that are now obvious. It self-protects!
- Both share the ability to split apart and replicate individually and simultaneously for performance and efficiency!
- Both can be any length as per the definition of data objects. There is no artificial record size!
- Both share the ability to perform error detection and correction (unlike conventional binary mirroring).
- Both allow segments of data to be inserted, deleted or modified as long as the opposite "strand" is likewise changed.
- Micro_Mirroring has a 256-character alphabet based on 8-bit data bytes meeting today's computing requirements.

DNA has a 4 character alphabet; meeting biological and chemical requirements (Credit Madeleine Price Ball for the DNA diagram).

DNA Replication

Consider one spiral of helix to be
DATA and the other to be ECC

A - T
C - G
G - C
T - A



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Micro_Mirroring uses a 256-character alphabet. Note the software look-up table.

This table of codewords are based on row values generated using the example ECC polynomial $g_1(x) = 1 + x^3 + x^4 + x^5 + x^8$. The table can be expanded to provide look-up data for single and dual failure recoveries.

The codeword $[DATA_i] [ECC_i] = d^0d^1d^2d^3d^4d^5d^6d^7 e^0e^1e^2e^3e^4e^5e^6e^7$

The codeword in binary array form:

```
[DATAi]   d0d1d2d3 s {hexadecimal row dispersal}
           d4d5d6d7 t
[ECCi]   e0e1e2e3 u
           e4e5e6e7 v
           -----
           w x y z {hexadecimal column dispersal}
```

Micro_Mirroring™ table of codewords for row dispersion

Da	cw	Da	cw	Da	cw	Da	cw	Da	cw	Da	cw	Da	cw	Da	cw
ta	stuv	ta	stuv	ta	stuv	ta	stuv	ta	stuv	ta	stuv	ta	stuv	ta	stuv
00	0000	01	1093	02	2027	03	30B4	04	404E	05	50DD	06	6069	07	70FA
08	801F	09	908C	0A	A038	0B	B0AB	0C	C051	0D	D0C2	0E	E076	0F	F0E5
10	01BD	11	112E	12	219A	13	3109	14	41F3	15	5160	16	61D4	17	7147
18	81A2	19	9131	1A	A185	1B	B116	1C	C1EC	1D	D17F	1E	E1CB	1F	F158
20	02F8	21	126B	22	22DF	23	324C	24	42B6	25	5225	26	6291	27	7202
28	82E7	29	9274	2A	A2C0	2B	B253	2C	C2A9	2D	D23A	2E	E28E	2F	F21D
30	0345	31	13D6	32	2362	33	33F1	34	430B	35	5398	36	632C	37	73BF
38	835A	39	93C9	3A	A37D	3B	B3EE	3C	C314	3D	D387	3E	E333	3F	F3A0
40	0472	41	14E1	42	2455	43	34C6	44	443C	45	54AF	46	641B	47	7488
48	846D	49	94FE	4A	A44A	4B	B4D9	4C	C423	4D	D4B0	4E	E404	4F	F497
50	05CF	51	155C	52	25E8	53	357B	54	4581	55	5512	56	65A6	57	7535
58	85D0	59	9543	5A	A5F7	5B	B564	5C	C59E	5D	D50D	5E	E5B9	5F	F52A
60	068A	61	1619	62	26AD	63	363E	64	46C4	65	5657	66	66E3	67	7670
68	8695	69	9606	6A	A6B2	6B	B621	6C	C6DB	6D	D648	6E	E6FC	6F	F66F
70	0737	71	17A4	72	2710	73	3783	74	4779	75	57EA	76	675E	77	77CD
78	8728	79	97BB	7A	A70F	7B	B79C	7C	C766	7D	D7F5	7E	E741	7F	F7D2
80	08E4	81	1877	82	28C3	83	3850	84	48AA	85	5839	86	688D	87	781E
88	88FB	89	9868	8A	A8DC	8B	B84F	8C	C8B5	8D	D826	8E	E892	8F	F801
90	0959	91	19CA	92	297E	93	39ED	94	4917	95	5984	96	6930	97	79A3
98	8946	99	99D5	9A	A961	9B	B9F2	9C	C908	9D	D99B	9E	E92F	9F	F9BC
A0	0A1C	A1	1A8F	A2	2A3B	A3	3AA8	A4	4A52	A5	5AC1	A6	6A75	A7	7AE6
A8	8A03	A9	9A90	AA	AA24	AB	BAB7	AC	CA4D	AD	DADE	AE	EA6A	AF	FAF9
B0	0BA1	B1	1B32	B2	2B86	B3	3B15	B4	4BEF	B5	5B7C	B6	6BC8	B7	7B5B
B8	8BBE	B9	9B2D	BA	AB99	BB	BB0A	BC	CBF0	BD	DB63	BE	EBD7	BF	FB44
C0	0C96	C1	1C05	C2	2CB1	C3	3C22	C4	4CD8	C5	5C4B	C6	6CFF	C7	7C6C
C8	8C89	C9	9C1A	CA	ACAE	CB	BC3D	CC	CCC7	CD	DC54	CE	ECE0	CF	FC73
D0	0D2B	D1	1DB8	D2	2D0C	D3	3D9F	D4	4D65	D5	5DF6	D6	6D42	D7	7DD1
D8	8D34	D9	9DA7	DA	AD13	DB	BD80	DC	CD7A	DD	DDE9	DE	ED5D	DF	FDCE
E0	0E6E	E1	1EFD	E2	2E49	E3	3EDA	E4	4E20	E5	5EB3	E6	6E07	E7	7E94
E8	8E71	E9	9EE2	EA	AE56	EB	BEC5	EC	CE3F	ED	DEAC	EE	EE18	EF	FE8B
F0	0FD3	F1	1F40	F2	2FF4	F3	3F67	F4	4F9D	F5	5F0E	F6	6FBA	F7	7F29
F8	8FCC	F9	9F5F	FA	AFEB	FB	BF78	FC	CF82	FD	DF11	FE	EFA5	FF	FF36

Similar tables exist for the column dispersion method and for other generator polynomials.

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Hardware encoding and decoding equations for Exclusive-OR via example polynomial $g_1(x) = 1 + x^3 + x^4 + x^5 + x^8$. They can be parallelized for speed.

Encoding with Data byte available Decoding with ECC byte available

$e_0 = d_0 + d_3 + d_4 + d_5 + d_6$	$d_0 = e_2 + e_3 + e_4 + e_5$
$e_1 = d_1 + d_4 + d_5 + d_6 + d_7$	$d_1 = e_0 + e_3 + e_4 + e_5 + e_6$
$e_2 = d_2 + d_5 + d_6 + d_7$	$d_2 = e_1 + e_4 + e_5 + e_6 + e_7$
$e_3 = d_0 + d_4 + d_5 + d_7$	$d_3 = e_3 + e_4 + e_6 + e_7$
$e_4 = d_0 + d_1 + d_3 + d_4$	$d_4 = e_0 + e_2 + e_3 + e_7$
$e_5 = d_0 + d_1 + d_2 + d_3 + d_6$	$d_5 = e_0 + e_1 + e_2 + e_5$
$e_6 = d_1 + d_2 + d_3 + d_4 + d_7$	$d_6 = e_0 + e_1 + e_2 + e_3 + e_6$
$e_7 = d_2 + d_3 + d_4 + d_5$	$d_7 = e_1 + e_2 + e_3 + e_4 + e_7$

Decoding with devices s u available

$$\begin{aligned}d_0 &= d_0 \\d_1 &= d_1 \\d_2 &= d_2 \\d_3 &= d_3 \\d_4 &= d_1 + d_2 + e_1 + e_2 \\d_5 &= d_2 + d_3 + e_0 + e_2 + e_3 \\d_6 &= d_0 + d_1 + e_1 + e_3 \\d_7 &= d_0 + d_1 + d_3 + e_0 + e_1\end{aligned}$$

Decoding with devices s v available

$$\begin{aligned}d_0 &= d_0 \\d_1 &= d_1 \\d_2 &= d_2 \\d_3 &= d_3 \\d_4 &= d_0 + d_1 + d_3 + e_4 \\d_5 &= d_0 + d_1 + d_2 + e_4 + e_7 \\d_6 &= d_0 + d_1 + d_2 + d_3 + e_5 \\d_7 &= d_0 + d_2 + e_4 + e_6\end{aligned}$$

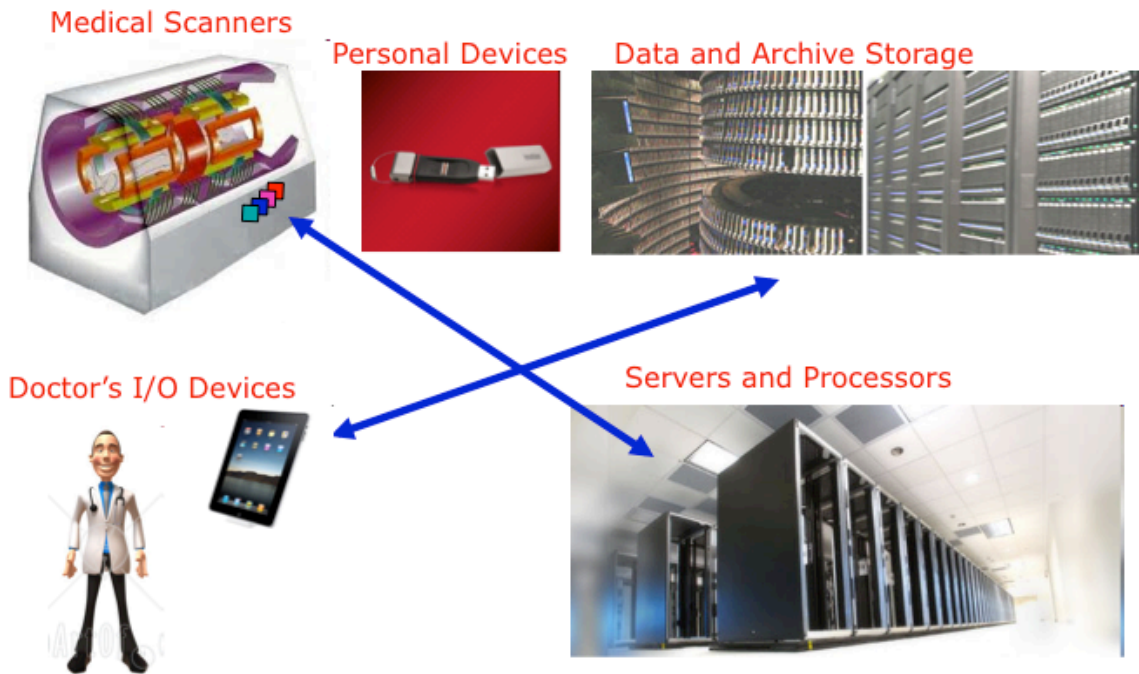
Decoding with devices t u available

$$\begin{aligned}d_0 &= d_4 + d_5 + d_7 + e_3 \\d_1 &= d_4 + d_5 + d_6 + d_7 + e_1 \\d_2 &= d_5 + d_6 + d_7 + e_2 \\d_3 &= d_6 + d_7 + e_0 + e_3 \\d_4 &= d_4 \\d_5 &= d_5 \\d_6 &= d_6 \\d_7 &= d_7\end{aligned}$$

Decoding with devices t v available

$$\begin{aligned}d_0 &= d_4 + d_6 + d_7 + e_5 + e_6 \\d_1 &= d_5 + d_7 + e_6 + e_7 \\d_2 &= d_4 + d_6 + e_4 + e_5 \\d_3 &= d_5 + d_6 + e_4 + e_5 + e_7 \\d_4 &= d_4 \\d_5 &= d_5 \\d_6 &= d_6 \\d_7 &= d_7\end{aligned}$$

All Way End-to-End Data Protection Interconnect for Healthcare Data Records



Please contact Micro_Mirroring Technology regarding a more detailed presentation or if interested in licensing or purchasing the IP. We are also looking at a potential development project.

Micro_Mirroring Technology appreciates your assistance too. Thanks,

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From: [Lynn Etheredge](#)
To: [Stine, Deborah D.](#)
Subject: A New HIT Infrastructure for Clinical Research
Date: Sunday, April 03, 2011 1:34:42 PM
Attachments: [HITResearchInfrastructure401a.doc](#)
[ATT00001.htm](#)

Dear Deborah,

These are some thoughts i'm getting around for discussion, re: HIT, *in silico* research, and a rapid-learning healthcare system -- related to some of PCAST's recent projects.

Lynn Etheredge
Rapid Learning Project
GW University

Notes on A New HIT Infrastructure for The 21st Century Clinical Research System

I think it is useful to conceptualize the “research “ system elements of the HIT infrastructure for a learning healthcare system (e.g. included in Goal V of the ONC national strategy) as integrated with, and supported by, the major national investments in EHRs and the HHS-ONC National Strategy Plan. In that context, this paper has three parts:

- the first section outlines some key elements and standards in EHRs that can be foundational for research, particularly core data sets and an “Apps” strategy;
- the second section deals specifically with a subset of potential Apps intended to create an electronic research infrastructure, a national system of research registries and databases for clinical researchers;
- the final section identifies some implementation issues that would need to be addressed in reaching consensus on the contents and technical standards of such Apps, and on the financial support for their development, updating, and for the research registries they would create.

Basic EHR Standards To Support Research

As HHS’s “meaningful use” and other standards to qualify for federal investment funds for EHR evolve, it would be foundational for clinical research to include at least two features beyond those already adopted:

-- A core national set of EHR data elements that will support patient care, quality reporting and research. While compatibility-related standards may be adequate for recording and sharing clinical information among providers and coordinating patient care, support for evidence-based care, for national quality reporting and for research registries will need standardized data elements and data sets, and involve additional functionalities and standardized reporting requirements. It now appears that a national core dataset could be foundational for all three goals, e.g. the HMO Research Network’s Virtual Data Warehouse (VDW) now standardizes health databases of its 14 million members, from EHR clinical records and other data, in eight basic areas: demographics, enrollment, encounters, procedures, cancer/tumor registry, pharmacy, vital signs, laboratory values, and

procedures.¹ The VDW also forms a core dataset for the FDA Sentinel Network's distributed data network.² HMORN's experience is that this core dataset – which is only a small fraction of the full amount of data in EHRs – will meet data needs for most clinical research, e.g. perhaps 85%, supplemented by other data for specific research projects. In other work toward a core national EHR dataset, the National Quality Forum has been working on a Quality Data Model that defines core functionality for a national quality reporting system.³ A merger or consolidation of these two projects could provide a core national EHR data standard that would support patient care, quality reporting, and research for all patients and providers. This core could evolve over time as more and more of clinical care has evidence-based guidelines; federally-supported EHRs should support physicians and healthcare providers being able to profile (and report) their own patterns of care against established guidelines, quality metrics, protocols, and best practices, as a foundation for a continuously learning health system.

-- A national "Apps" strategy that will require federally-supported EHRs to accept and support downloadable applications that meet national standards and add functionality and benefits. These "apps" might also be called "modules", "plug-ins", "links", "downloads" or "add-ons", but I prefer "apps" since this term is closest to what I have in mind, i.e. the many thousands of "apps", offering an enormous (and often not previously conceived of) potential value that now can be downloaded to iPhones, iPads, other digital phones and computers, etc. As with these apps, there would need to be technical standards to assure that developers of EHR apps wrote programs that would work with all federally-supported EHRs, and that federally-supported EHRs could incorporate and support use of the applications. This would seem to be an ONC leadership role.

For national EHR strategy, an apps approach has several key advantages:

(1) Apps help to keep the costs of basic national EHRs more affordable, e.g. pediatricians and dermatologists would not need to be buying fully-loaded EHRs with features for adult populations with cardiac disease, cancer, strokes, etc. But physicians, hospitals, health plans and others who do need such capabilities would be assured of being able to readily upgrade a basic EHR to meet their needs.

(2) Apps add to the appeal of purchasing EHRs. If the apps lessons of the last few years are a valid base for prediction, there could be many hundreds or thousands of new applications, for physicians, patients, and others, that could make EHRs the foundation for downloading and using: a vast number of decision-support

1

² R. Behrman, et. al. "Developing the Sentinel System – A National Resource for Evidence Development" article 10.1056/NEJMp1014427 published on January 12, 2011 at NEJM.org

³ http://www.qualityforum.org/Projects/h/QDS_Model/Quality_Data_Model.aspx

tools, clinical guidelines, new CER reports, information links, predictive models for personalized health care, “patients like me” databases that compared effectiveness and safety results of treatment options for large numbers of patients with closely-matched characteristics, journal articles, registries, professional networks and societies, quality report cards, real-time patient monitoring data, patient-physician communications, etc. that could be configured to a physicians’ own practice and to patients’ individual diagnoses and other characteristics. An apps strategy creates a vital new, national developers market for such add-ons for EHRs (of up to 300 M persons) that go far beyond specialized EHR companies; a vibrant apps marketplace prevents “lock-in” of physicians, hospitals, health plans, patients, and others to a specific EHR system and its limitations. Apps become an important reason to purchase and use EHRs.

(3) Apps can support rapid, two-way communication and learning links. For example, an app from a national specialty society, or Medline, FDA, AHRQ, CDC, etc. could provide “one-click” access by physicians to such resources, it could also create a datalink for sending alerts and updates to a physician from these sources, e.g. about new evidence-based guidelines, about new research specifically relevant to a physician’s patient, about new safety warnings for a physicians’ patients taking a specific drug, guidance in public health emergencies like new influenza outbreaks, etc. Many apps could be diagnosis(es) and/or therapy driven; when an app noted an EHR had a patient with certain characteristics or treatments, it could produce a “pop-up” note to the physician about availability of relevant information.

(4) For quality and research registry purposes, apps can provide standardized and comprehensive data that can automatically, nearly in real-time, contribute to research studies, track trends, allow quick learning and feedback into a continuous learning cycle of improving clinical guidelines and evidence-based best practices. In particular, the development and adoption of a core set of apps to support a national system of research registries, covering all conditions and patient groups, would help to develop much larger data resources, as well as accurate, timely, and comparable data for a learning healthcare system. With apps designed specifically for specialists and researchers, it will be possible to have nationally standardized data of much more clinical richness and comparability, e.g. the kinds of EHR capabilities that have been proposed by NCI and clinical oncologists (ASCO) as an EHR for cancer patients. As leading-edge research increasingly will need to be able to record and transmit genetic data, EHR add-ons can provide those standardized datasets and data-sharing options, not a capability yet needed in general practice EHRs.

(5) As envisioned here, a set of apps would be developed, as necessary, to supplement the core EHR data set/standards and enable a national system of research registries and databases. A key suggestion is that these apps for national research reporting would be publicly financed. This means that the “downloads” of these research apps into basic EHRs – and sharing of these data via

the WWW - would be free for physicians, hospitals and others in the learning healthcare system. The public financing recognizes that research is a public-benefit that should be financed broadly, not loaded onto physicians' office expenses or patient charges. The "no-cost" feature will facilitate broad adoption and timely use. The design of these apps will need a broadly consultative process and agreement among physicians, researchers, patients, biomedical industry experts, and government research agencies. The development of HIT standards and policies has frequently used such consultative processes. The contracting for research apps that meet these consensus standards would be to private sector developers; HHS would offer an on-line "App Store" where research apps, and similar Medline apps, FDA apps, AHRQ apps, CDC apps, PCORI apps, etc. could be downloaded for free. Beyond the government-sponsored apps, developed to support a national clinical research infrastructure, others could also develop and offer research-related apps for specific studies.

A 21st Century Clinical Research System Supported by HIT

The advent of electronic health records, with standardized, comprehensive, individually-based, longitudinal data, will make possible a quantum advance in the national capabilities for biomedical and clinical research. Today, healthcare research is often done in a data-poor, slow-learning environment; most research projects require individuals with new ideas to propose formal research studies to funding agencies; if approved, such research usually requires several years of original data collection that must be analyzed before completing a study and preparing articles for potential publication. Researchers, who are highly trained in creative, rigorous thinking and research methods, must spend much of their careers dealing with collecting data and preparing it for analyses. Only a small percentage of patients have their data used for learning. (A particular, contrasting example, is that pediatrics oncology, which has been very successful in achieving better outcomes, captures data into an organized research system, and learns from the experience of each child with cancer. In contrast, the cancer treatment of most Medicare patients, the group where most cancers occur, is now only rarely captured for clinical research).

A national research system of pre-designed, pre-populated, high-quality research registries and computerized databases could allow researchers with new ideas to log-on to the world's evidence base for clinical care and test many hypotheses in a matter of a few hours, days or weeks. The exploration of new ideas and theories can be done more quickly and easily. Many more patients' experience can be used for research; many more individuals can engage in research; researchers can do many more studies. Many more types of studies can be done. Reported research results in published studies can be checked against many different data sources to achieve greater confidence in results, or to identify priorities for further research. Studies that require large populations, e.g. variations in diseases and/or treatment efficacy related to genetic differences, will be easier to

do. The real-world experience of using new clinical protocols, new therapies, and best practices can be captured quickly, evaluated, and fed back into new rounds of research, new evidence-based care and clinical guidelines, for a continuous learning health system.

The new research capabilities of *in silico research* (researchers using high speed computers and large, networked datasets) will complement traditional *in vitro* and *in vivo* methods, such as randomized clinical trials. Much of 21st century science, across all scientific areas, now uses *in silico* research methods and large scientific databases, and the Human Genome Project has been a flagship for its use in biomedical research. A national clinical research strategy needs to employ a combination of experiments, new, larger and better research databases, and predictive models, and to be mindful of the strengths and limitations of each element; the potential for EHR-based reporting adds many new capabilities, particularly when used well with these other research tools, for rapid learning,

For more specificity, here are several examples about how an EHR-based (and EHR-apps based) HIT infrastructure can address some of the key problems that now limit or bog down today's clinical research system.

--Surgery: without FDA-required pre-market testing for drugs, there are many uncertainties about effectiveness, safety, appropriateness, and best practices for doing new surgical procedures. Leading surgical societies have demonstrated that large surgical registries can improve care and produce useful predictive models for advising physicians and patients about risks and benefits (Society for Thoracic Surgeons), and that recording and using standardized data can improve quality (American College of Surgeons NSQIP system). Many key patient-choice decisions involve weighing the benefits and risks of standard surgery, non-invasive (laparoscopic) surgery, drug therapy, and/or lifestyle changes. A well-designed national system of research registries and databases for surgical research, potentially capturing most surgical care, could assist in making today's leading-edge surgical research capabilities widely available for all surgical procedures.

--Pediatrics: since children are usually not included in clinical trials, most prescription drug use for pediatrics is now "off-label". Pediatrics research is also hampered by the small size of pediatric practices (and the general good health of most children), so that it is very difficult even for children's research centers to have large enough databases to research many questions about pediatric clinical care. An ability to create national research registries and linked databases for pediatrics research, supported by national data standards and enhanced EHR capabilities, could draw on millions (or tens of millions) of patients. With a national research system, for example, it would be possible to do a "Dartmouth Atlas" showing how pediatric practices varied in treatment of conditions, how clinical care compared to current guidelines and quality measures, the epidemiology of disease patterns and treatments, and the largest uncertainties/variations in clinical practice that might be addressed by CER or better practice guidelines.

--Patients with multiple chronic conditions: there is a large (and possibly growing) “inferential gap” in medicine between patients studied in clinical trials (typically younger adults with a diagnosis for study) and typical patients seen in physicians offices and hospitals (seniors, multiple chronic conditions, taking several medications, etc). A registry system can capture real-world patients in real-world conditions, and help to extend the solid evidence-base for clinical decision-making to the population groups that will be, increasingly over the next several decades, where most healthcare will be delivered.

-- New technologies: the health system needs to learn as much as possible, as soon as possible, about the best use of new technologies. A registries system, with an EHR app that records and transmits data on uses of such new technologies, could provide the basis for learning very quickly. Such an app would make it possible to have rich, comparable data, including on off-label and other previously unstudied uses and population groups. A national research initiative could design such new apps, after defining the important questions about new technologies, particularly for CER and guidelines research, and provide for the data capture and registries (strengthened by “coverage with evidence development” payment policies).

-- Public health emergency learning: the H1N1 experience identified major problems in the national ability to quickly identify and find out about key clinical issues (minority children, children with asthma, etc.) and obtain rapid feedback on new, more effective protocols. In a public health emergency, HHS/CDC could develop and “push” to all federally-supported EHRs a “public health emergency module” that captures essential data for understanding emerging problems and therapeutic issues. (Federally-supported EHRs would need to have web addresses registered w/HHS, and to be able to accept such emergency messages/app downloads).

-- Rare diseases registry: NIH’s Office of Rare Disease Research and Chris Forrest (PEDSNet) have been proposing an international rare diseases registry system (about 30M Americans, for example, have one or more of 7,000 conditions that are relatively infrequent – diseases without a “named” institute). EHR-fed databases (from NIH rare disease apps) could create far larger and richer research capabilities for such conditions, where there are seldom clinical trials and little pharmaceutical industry research; the two-way communications from such apps could also link the physicians (and their patients) with rare diseases into national & international research, physician, and patient networks.

--Comparative effectiveness research (CER): One of the serious limitations for CER research is that there are not now “comparability” study requirements that allow clinical reports to be readily compared, or for their databases to be combined into a steadily growing evidence base for clinical science (computerized databases, rather than just summary statistics of published articles). Today, the 90,000 studies reported in national clinical trials listings often need complicated and additional

“meta-analysis” projects to draw valid conclusions (and usually find it difficult to do so); the Cochrane Collaboration engages about 27,000 researchers in more than 100 countries in trying to make sense of the world’s clinical studies. This lack of comparability - particularly for government-financed or required studies - can (and must) be addressed for a first-rate clinical research and CER system. With the proposed system of standardized EHRs and research apps, research studies of different therapies and population groups could be readily compared. (Individual studies could be creative and report on new data, but would also need to collect a standardized “prospective meta-analysis” dataset (the relevant research app) that allows – ideally –an automated comparison of its key results to previous research finding and the combinability of its research database into the national research registries and database system. Producing comparative effectiveness research (CER) for the \$2.7 trillion healthcare sector will go much more rapidly if the national HIT system is designed to produce comparative research data.

-- Genetic, proteomic and other large database studies that will benefit from on-going data-sharing and research networks. Many research ideas now need databases that are larger than an individual academic department can create on its own. Genetics research (and, by extension, much cancer research) may also need to engage with very large databases to identify genetics-related differences in disease and/or differential responses to treatment by individuals (or cancers) with different genetic makeups. NIH has often dealt with these problems inefficiently, via creating “one-time” networks (over a hundred each year) for individual project grants awards; such grants usually spend a great deal of time just developing one-time networks for a project, which then go out of existence. A better solution, already recognized by NCI and NHLBI (also FDA, for vaccine safety studies) has been to support on-going learning networks with large distributed research databases. Through its CaBIG (cancer biomedical network), NCI has created an infrastructure for worldwide sharing of cancer-related research data. In a state-of-the-art 21st century research system, these types of research capabilities could be available in all fields.

-- Research outside traditional silos: Susan Love’s One Million “Army of Women is an innovative approach to breast cancer research, and is now expanding, with NIH support, into a National Health Of Women study (http://www.armyofwomen.org/HOW_Study). It recruits women interested in advancing research to share clinical information directly via a central website and facilitates clinical studies on questions of importance to women and clinical researchers. With the “research apps” strategy, it would be possible to support this and other Patient 2.0 initiatives, in which patients (including those with rare diseases) could contribute standardized clinical data for research topics that are of importance to them.

A fully-developed national research strategy, in addition to these new EHR-supported registries and databases, should also upgrade the federal government’s clinical research enterprise to bring its clinical studies “on-line” for public access

and open science. In particular, NIH-funded (also VA, DOD, and other federal agency-funded) clinical studies should be required to report datasets, using the standardized reporting described above, to national research databases (or a linked distributed database system), and FDA's clinical databases (excluding proprietary manufacturing information) – from its evolving “Janus” system - should also be made available for on-line research, with standardized data. For CER, there should also be a national database of clinical effectiveness studies. The “gold standard” evidence for clinical research should be publicly available.

Designing, Implementing, and Funding a National Network of Research Registries and Databases

To realize the research potential of an HIT-based learning healthcare system, a number of implementation and practical issues will need to be addressed. To flag several of the major ones:

Issue #1: What is the “architecture” of this new research system? How big is it? How many registries and databases, and who creates them, governs them, operates them? What are the data-sharing policies? Who is in, who is out? Is this a public, private, or mixed system, centralized databases or distributed databases? How to assure data quality? How much data is too much?

To venture a couple of thoughts on these questions:

-- Size: We need a clinical research system that is at least large enough for rapid-learning clinical research for all conditions and patient groups. For too long, even major groups, with tens of millions of patients, have seen clinical research lag (children, adults with multiple conditions, surgery patients); with an HIT-enabled research system, based on national EHRs, it should be possible to add large new research capabilities across-the-board.

-- Is this a centralized or decentralized architecture? As noted above, there are some areas – e.g. NIH and government-funded research, FDA, national clinical effectiveness database – where there are strong cases for national research databases. There are other areas where large specialty societies, e.g. surgery, cardiology, have a strong track record in building national registries. There is also a strong case and successful precedents for “distributed database” systems, like the HMO Research Network. Patient confidentiality is a concern if full records and personally-identifiable information are to be shared for research projects. At this point, it might be best to think of the national research enterprise as a mixed public-private, centralized-decentralized system, and to realize that broad consultations will be needed to resolve this issue.

One of the questions that should be addressed in considering the architecture is: What are the data-sharing policies in this national research system?

If there are a small number of large databases (or database networks) that serve research needs, and there is open access for their use, then it may be most efficient to use such a concentrated architecture. On the other hand, if many research databases or research networks are limited access, closed, and/or proprietary then a much larger series of registries may be needed to make sure that all areas of research can move forward and that researchers can access data they need.

One of the advantages of having standardized “apps” for research, is that the standardized data can be shared widely and used in different research registries, databases and projects. For example, in cancer a comprehensive cancer center could provide data to local, state, and national registries, to oncology specialty registries, to its network registries and studies, and more. So an “architecture” design perhaps should deal with the fundamentals of what’s needed for national learning and research, and not attempt to limit or define the rest of what can be developed. Indeed, making it possible to “break down silos” and encourage “out of the box” thinking, and enable many more professionals to engage in exploratory, collaborative research may be very desirable. If US research databases are publicly available for researchers in other nations, they can become a key element in international research and collaborative studies, as well.

--Who is in, who is out? My preliminary answer to this is that those who are formally part of the “research community” should be required (or strongly encouraged) to use HIT and EHR research apps for recording and reporting data. In this group would be federal agencies, federally-funded research projects, federally-required research studies (FDA), CTSA awardees, NIH-designated clinical centers, federally-supported registries and research networks. Strong encouragement for others not in those groups could be provided by editors of leading journals requiring that published articles must report standardized data for comparing findings as part of the article and to the appropriate national registry or database. For specialty societies, it could very well be encouraged, or expected of members (if not required) that they participate in the on-going learning of their profession by contributing standardized data to research registries. As noted earlier, coverage-with-evidence-development policies by payers could strongly support a new learning system, using EHR apps, for new technologies. Beyond this, I would think that a learning health system should be open to many more participants, e.g. Patients 2.0, in the research enterprise.

-- How much is too much? Given carefully selected, high quality data, a number of questions can be answered by study sizes that are much smaller than the full universe of what could be collected nationally with EHRs for up to 300 million patients. This is a task for NIH, PCORI, FDA, AHRQ, IOM and others to consider, along with physicians and patient groups. It’s easier to point to today’s gaps in today’s data-poor environment than to figure out where there may be too much data in the future, but there are some areas where there is already a growing amount of EHR-fed research data for millions of patients (HMO Research Network (14 million

patients), VA (8 million patients). And the quantity/quality issue may be of importance; for astronomy, it used to be that building larger telescopes to collect more earth-based data had very little value – atmospheric disturbances on data accuracy were the limiting factor. (Today computerized optic corrections mean land-based observations can be of Hubble-type accuracy). The research community will need to grapple with new questions about the value of additional data.

How to assure data quality? The apps can be built to include data edits, before any data is transmitted. Research registries and databases need to be “curated” i.e. cleaned up, checked over, so that they are ready-to-use by on-line researchers. Data audits may be needed (and likely will be parts of a national quality reporting system). Payers can help by adopting Medicare’s policy of “the check doesn’t get sent until the data center gives an OK” system. The Medicare experience also is that, in order to have high quality data, the data must be used, so that there are people who insist that it be high quality and flag problems immediately when problems are spotted so they can be quickly corrected.

--Issue #2: Developing the research “apps”. This is a key to the proposed strategy. It needs federal leadership, of course, but also a highly participatory consultative and consensus-reaching process. Perhaps ONC, which leads in coordination on national HIT policy and strategy issues, would be appropriate to lead this effort, as well, working with all interested parties.

--Issue #3: Funding the research databases and registries. As research is a public good, and rapid learning is a major goal and public benefit, I suggest that most (if not all) of the funding for a network of research registries and databases, covering all conditions and patient groups, be public financing. Several large specialty societies, e.g. cardiology, thoracic surgery, have been generous and forward-looking in funding their own registries, as part of on-going research, quality and education efforts. If these are part of the new research system, federal support could include joint funding arrangements.

--Issue #4: Handling the technical issues of standardizing and sharing research data. There have already been several initiatives to lay the foundations for the kinds of HIT-based research system described above. These include: (1) CDISC: Clinical Data Interchange Standards Consortium www.cdisc.org, a government/industry-supported initiative to enable standardized data collection and transmission, particularly for drug research, that will enable the pharmaceutical industry to utilize electronic research data collection and reporting to meet the requirements, not only of FDA, NIH, and professional journals, but of other nations, with a common set of standards; (2) BRIDG: Biomedical Research Integrated Domain Group www.bridgmodel.org, a collaboration among CDISC, HL7, FDA, and NCI's CaBIG (cancer biomedical informatics grid) for a shared set of standards to support protocol-driven research, regulatory and post-market surveillance needs; (3) NIH (NCI's) BIG Health Consortium: CaBIG has ventured to create the BIG (Biomedical Informatics Grid) Health Consortium <http://bighealthconsortium.org/>

to create a world wide web specifically designed to support 21st century biomedical research and standardized data exchange; and (4) the National Library of Medicine's clinical trials registry (www.clinicaltrials.gov) is a foundation for reporting common information about clinical trials, and its dbGaP (database of genotypes and phenotypes) (www.ncbi.nlm.nih.gov/gap) is already an international registry for genetics-related research datasets, with mirror sites in Europe and Asia.

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To: info@iaea.org; MEL@iaea.org; iaeage@unog.ch; iaeany@un.org; Official.Mail@iaea.org;
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Amy.Mahn@HQ.DHS.GOV
Subject: To US-DOE-OIG + IAEA-HQ ... VHO MOBIS Subpart 15.6 - Unsolicited Proposal for JAPAN "WATER"
ENCAPSULATION of said HazMat
Date: Sunday, April 03, 2011 3:05:49 PM
Attachments: [Robert Bayless via VHO \(GSA MOBIS\) 740-366-9013.pdf](#)
Importance: High



Vertical Horizons One, Inc.
Helping Our Clients Make Better Decisions

03 April 2011

-
TO:

Mr. Gregory H. Friedman-Inspector General-U.S. Department of Energy [**US-DOE-OIG**]
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..... AND

-
Please review and forward this important information to the Director of the Agency's Laboratories:
Mrs. Gabriele Voigt and ALL other **IAEA Personnel who "need to know"** about this globally
important offer from **VHO, Inc. (based in the USA) !**

-
Research Contracts Administration Section

E-mail: research.contracts@iaea.org
International Atomic Energy Agency - Vienna International Centre
Wagramer Strasse 5, P.O. Box 100, A-1400 Vienna, Austria
Reference: <http://www-crp.iaea.org/html/contact-us.html>
Various Planned Projects: <http://www-crp.iaea.org/html/rifa-show-plannedcrp.asp>

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Reference: <http://www.iaea.org/About/contact.html>

To ALL: Please see this scientific-opportunity to affect the **"On-going Nuclear Catastrophe" in Japan.**

HERE IS the electronic message that addresses the identified **Highly-Radioactive Water** Problem (that is spilling into the Pacific Ocean) where the **Point-Source is the TEPCO Plant on the Eastern Shore of Japan.**

We hope to hear from you very soon. Full Contact Information is at the Bottom of this Page.

----- Original Message -----

From: [Clark Tibbs VHO-PVI-CTA](mailto:Clark.Tibbs.VHO-PVI-CTA) **To:** EARTHQUAKE@WS.MOFA.GO.JP
Sent: Thursday, March 31, 2011 5:36 PM
Subject: To MR. ICHIRO FUJISAKI - Amb to USA - EARTHQUAKE@WS.MOFA.GO.JP ... VHO MOBIS Subpart 15.6 - Unsolicited Proposal for JAPAN "WATER" ENCAPSULATION of said HazMat

TO:
MR. ICHIRO FUJISAKI EARTHQUAKE@WS.MOFA.GO.JP
Ambassador of Japan to the United States
Embassy of Japan in United States of America
<http://www.us.emb-japan.go.jp/english/html/embassy/ambassador.htm>

2520 Massachusetts Avenue, N.W., Washington, DC 20008
Main Tel: 202-238-6700

Hello **Ambassador FUJISAKI** and your Staff:

Please review this important Scientific Information and forward to **Mr. Naoto Kan, Prime Minister of Japan** and also to the following people in Japan:

Below is from: <http://www.nisa.meti.go.jp/english/aboutnisa/executives.html>
Director-General **TERASAKA**, Nobuaki
Vice Director-General **HIRAOKA**, Eiji
Deputy Director-General for Fuel Cycle **NEI**, Hisanori
Deputy Director-General for Nuclear Power **KUROKI**, Shinichi
Deputy Director-General for Nuclear Safety **NAKAMURA**, Koichiro
Deputy Director-General for Industrial Safety and Nuclear Material Protection **NAITO**, Shingo
Deputy Director-General for Safety Examination **NOGUCHI**, Tetsuo

=====
In addition to this original proposal (that we are re-sending so it is on the top of your list) ... VHO's Team Member was instrumental to the **"Carbonless Paper"** MICRO-ENCAPSULATION. Surely you have worked with this product?

The same VHO Team Member has MICRO-ENCAPSULATED ... **Gasoline**. Surely you know how volatile this product is?

News from Japan says that the "Radioactive Water" is a major concern.

The VHO Team Member has MICRO-ENCAPSULATED ... **Water**, as well.

The VHO Team Member has MICRO-ENCAPSULATED **MicroCapsules**.

Part of this proposal can include the MICRO-ENCAPSULATION of "Radioactive Water" with **"LEAD-based" ... MicroCapsules**.

Therefore, we hope to hear from you Very Soon !

Note:

Other news from Japan says that they may use a fabric and/or an industrial resin to cover the hazard-zone.

These methods have little probability of success.

TEPCO and the Japanese Government have very little idea ... what to do about the "Highly-Radioactive Water"

Clark Tibbs Vertical Horizons One, Inc. Phone: 740.366.9013 Cell: 740.502.9010

----- Original Message -----

From: [Clark Tibbs VHO-PVI-CTA](mailto:Clark.Tibbs.VHO-PVI-CTA) **To:** craig.conklin@dhs.gov

Sent: Tuesday, **March 29, 2011** 1:41 PM

Subject: To DHS-Craig Conklin ... VHO MOBIS Subpart 15.6 - Unsolicited Proposal for JAPAN Remediation while using Molten Glass-like - Vittrification-type ENCAPSULATION of said Hazardous Materials

29 March 2011

TO:

Mr. Craig Conklin craig.conklin@dhs.gov
US DHS [Department of Homeland Security]
Director, Sector Specific Agency Executive Management Office
Oversees DHS's Nuclear Sector Engagements
Phone: 703-603-5168

Hello Mr. Conklin: My name is Clark Tibbs with VHO, Inc. 740-366-9013

Ms. Amy Mahn in the office of **Mr. Rand Beers** has asked our firm to contact you, since it is your unit that proactively implements example opportunities as have been documented below and in these example attachments.

We hope that you will take the time to scan over some of this material and forward to whichever **DHS NRC DoD units** have competent expertise in said subject areas, so we can potentially move forward (with a solution to offer) ... recognizing the dire nuclear contamination situation that is escalating in Japan.

----- Original Message -----

From: [Clark Tibbs VHO-PVI-CTA](mailto:Clark.Tibbs.VHO-PVI-CTA)

To: Amy.Mahn@HQ.DHS.GOV ; Rand.Beers@DHS.gov ; IRIB.Resource@nrc.gov ; eugene.burdine@nrc.gov ; RYAN.PIKE1@DHS.GOV ; OPA.RESOURCE@NRC.GOV

Cc: [Dr. David Manuta-Chem](mailto:Dr.David.Manuta-Chem) ; OHIO-ODOD Mike Dew ; ODOD Brad Biggs ; Ethan.Weber@mail.house.gov ; Amanda.Thorpe@mail.house.gov ; BB-Bob Bayless ; BROWN-Beth Thames ; BROWN-Eleanor Dehoney ; AAAA Sen Coburn MD via Mr. Evan Feinberg ; SENATE-Dr. Tom Coburn ; Cherry.Vail@development.ohio.gov

Sent: Monday, March 28, 2011 8:43 PM

Subject: To DHS + FEMA + NRC ... VHO MOBIS Subpart 15.6 - Unsolicited Proposal for JAPAN

Remediation while using Molten Glass-like - Vitrification-type ENCAPSULATION of said Hazardous Materials

-
28 March 2011

-
TO:

Mr. **Rand Beers** Rand.Beers@DHS.gov and Ms. **Amy Mahn** Amy.Mahn@HQ.DHS.GOV Direct: 202-282-9773

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301-415-3548
Ref: <http://www.nrc.gov/about-nrc/contactus.html>

-
Note: Since the Japanese Nuclear Crisis began on 11 March 2011 ... VHO, Inc. has contacted its GSA MOBIS SMEs (Subject Matter Experts) and the company has concluded that the company shall offer this expedited proposal, recognizing the dire nature of said on-going disaster:

-
Subpart 15.6—Unsolicited Proposals for JAPAN Remediation while using Molten Glass-like - Vitrification-type ENCAPSULATION of said Hazardous Materials

Reference: <https://www.acquisition.gov/far/html/Subpart%2015.6.html>

-
..... while contracted with the US Government using the Vertical Horizons One, Inc. GSA Contract Schedule 874 (MOBIS) GS-10F-0336N

http://www.vhone.net/train_services_products.html

http://www.vhone.net/train_labor_prices.html

<http://www.vhone.net/decisions.html>

-
VHO's MANAGER for this PROJECT:

Dr. R. G. Bayless (See Attached Resume)

Cell: 404-432-6322

Fax: 1-404-393-9941

-
EXAMPLE TECHNOLOGIES PROPOSAL FOR PRELIMINARY RESEARCH & DEVELOPMENT PHASE OF SAID PROJECT:

... PRICE PAID to Vertical Horizons One, Inc. CAGE CODE: 1YVT1 UPON APPROVAL ...

\$10,000,000.00

.... *please see Attachments.*

-
In order to function, the **Borosilicate glass** must be in a liquid or fluid form initially for it to be capable of microencapsulation the reactor wastes. Of course, that all is possible, given the right initial mixture and introduction. It would only take a few minutes for the encapsulation to take place.

-
Borosilicate (pyrex type) glass shows evidence of being an effective encapsulation method. In the case of the Sendai area reactors, part of the problem may be how to get at the underside of the complex to prevent "China-syndrome" melt through into the substrates and thence into the environment, marine and geologic. Pyrolysis on the perimeter, but robotically controlled, may be one course of action. At present the area is so toxic and radioactive, personnel are most assuredly endangered.

-
FROM: <http://www.freepatentsonline.com/4422965.html>

Disclosed is a process for containing a solution of nuclear waste, where the nuclear waste is at least 10% sodium or nitrate. A composition is prepared in an alcohol of about 1 to about 99% of a silicon alkoxide and about 1 to about 99% of a boron alkoxide. The pH of the nuclear waste solution is adjusted to about 4 to about 6 and the pH of the composition is adjusted to match. The composition is dried to about 50 to about 75% of its original volume and is mixed with up to about 30% of the solution of nuclear waste, thereby forming a gel. The mixture is dried and heated at up to about 500° C. Finally, it is consolidated either by warm pressing at about 400° to about 800° C. at about 40,000 to about 100,000 psi, or by melting at about 700° to about 1150° C.

-
FROM: <http://osdir.com/patents/Toxic-waste/Encapsulation-radioactive-waste-sodium-silicate-based-glass-matrix-07241932.html>

The present invention relates to an immobilizing medium for the **encapsulation of radioactive waste**. The waste immobilizing medium has a sodium silicate based glass matrix in which there is contained radioactive waste wherein the waste comprises one or more inert metal components and one or more fission products. At least a portion of the inert metal components are dissolved in the glass matrix and increase its durability. As a result, the waste immobilising medium is highly durable and leach resistant and is suitable **for long term storage of radioactive waste**. The inert metal components preferably comprise iron, nickel and chromium.-

-
FROM: <http://www.twi.co.uk/content/ksnrs002.html>

Electrostatic bonding (also known as anodic or field assisted bonding) was first reported in 1969 having been developed and patented by P R Mallory and Co Inc (for which reason it is sometimes known as Mallory bonding).

The technique is used to join glass to metals and semiconductors at temperatures well below the softening point of the glass. The components to be joined are polished to a smooth, flat surface finish (e.g. 50µm rms) then heated to a temperature below the softening point of the materials, but sufficiently high for ionic conduction to occur (200-600°C for glass).

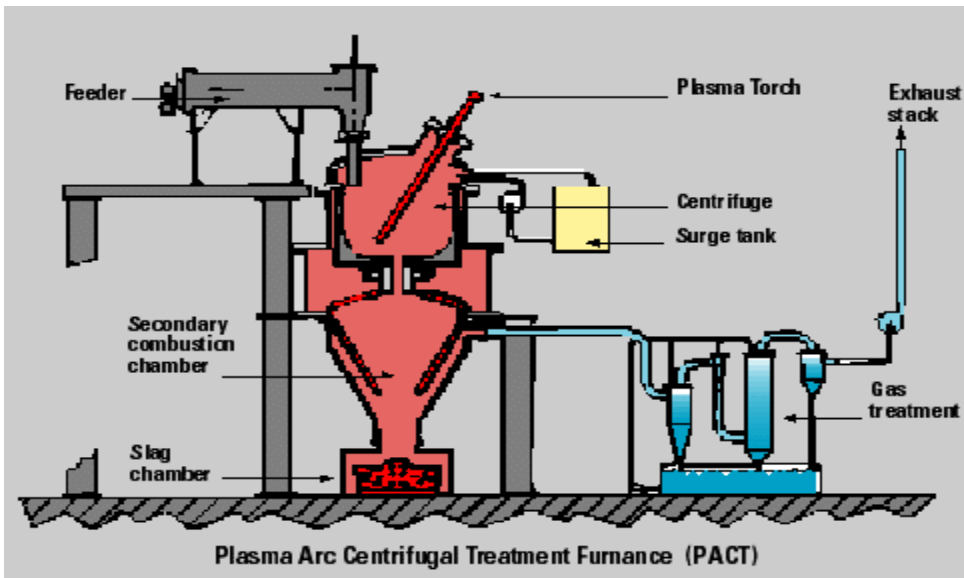
A d.c. voltage is applied across the components such that the metal (or semiconductor) is at a positive potential with respect to the glass. The voltage applied can vary from a few hundred volts to three thousand volts, for bonding times of 10 seconds to several hours.

A bond is formed as a result of the joint interfaces being brought into intimate contact by the electrostatic forces generated by ion migration in the glass. No external pressure is applied other than that required to hold the components in contact.

A reasonable match of thermal expansion coefficients is desirable to avoid strain in the joint, but joints between unmatched glass/metal combinations have been made successfully when the metal is in the form of thin foil or film.

-
-

Vitrification (Example)



Molten materials. Vitrification uses heat to turn hazardous wastes into glass.

A vitreous state is a noncrystalline solid or rigid liquid formed by supercooling a melt. It's also called a glassy state. For hazardous or radioactive wastes, vitrification is the process of cooling a liquid fast enough to prevent crystallization. This process turns waste material, even high- and low-level radioactive wastes, into glass. Until recently, vitrification technology cost too much to treat low-level wastes. But Columbia, Maryland-based GTS Duratek and the Vitreous State Laboratory at the Catholic University of America in Washington, DC created proprietary formulations and used their patented furnace to make glass from low-level wastes.

"The advantage of vitrification is that it converts a waste product into recyclable, reusable glass that has value," says Bob Prince, GTS Duratek president and chief executive. "With incineration, you end up with ash at the end of the day--you still have the waste product. With vitrification you have clean air, clean water, and glass."

During vitrification, contaminants are subjected to extremely high temperatures in the melter. The organic compounds are destroyed and the remaining organic elements become part of the glass's molecular structure. Hazardous metal components in the waste are converted to nonhazardous oxides. Radioactive elements can't leach out, so they won't pollute the environment.

GTS Duratek's vitrification process was tested on-site at the Department of Energy's first Minimum Additive Waste Stabilization Project (MAWS), conducted at the Fernald Environmental Management Project near Cincinnati, Ohio. Fernald processed uranium for nuclear weapons from 1951 to 1989, when cleanup began.

MAWS simultaneously processes contaminated water, soils, sludge, fly ash, and building siding, combining them so they help stabilize each other. Unlike conventional waste treatment, which requires adding nonwaste material to stabilize the waste, MAWS reduces the cost of cleanup and the final volume of waste that must be stored or disposed.

GTS Duratek began working on the concept in 1991 under a DOE research contract. Soon after, VSL scientists perfected glass formulation using DOE wastes. GTS Duratek and VSL conducted continuous melter tests in the lab with Fernald wastes. By fall of 1993, a Duratek furnace was operating on site, processing surrogate material chemically identical to Fernald wastes. This year, GTS Duratek will process Fernald wastes on site.

In a joint venture with Chem Nuclear Systems Inc., GTS Duratek will design, build, and operate a furnace at Chem Nuclear System's low-level radioactive disposal site in Barnwell, South Carolina. The venture will convert low-level radioactive waste from commercial nuclear power plants, hospitals, and labs. The facility may be operational in 1995.

Prince says vitrification and incineration cost about the same amount, but vitrification generates recyclable glass that can be resold. The process can be used for medical waste, soils, sludges, radioactive waste from hospitals and commercial nuclear reactors, and asbestos.

"Glass is the best waste form known," Prince says, "even if you break it into pieces. Contaminants dissolve into the glass and will stay in there for millions of years. Some glass brought back from the moon was 70 billion years old."

=====

Clark Tibbs
Vertical Horizons One, Inc.
CAGE CODE: 1YVT1 TIN: 31-1797173
SBA 8(a) Certification # 108919
Service Disabled Veteran Owned Small Business (SDVOSB)
Phone: 740.366.9013 Fax: 740.366.5230 Cell: 740.502.9010
E-mail: VHO@roadrunner.com -or- CTA@ee.net
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GSA Contract Schedule 874 (MOBIS) **GS-10F-0336N**

Visit our site <http://www.VHOne.net>

Online Reps & Certs on record <http://orca.bpn.gov> DUNS: 059715677

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Robert G. Bayless, PhD

Personal Profile

EDUCATION

- PhD (Polymer Science) University of Wexford, 1997
- MS {Physical Chemistry} University of Cincinnati, 1964
- BS {Chemistry} Central State University, 1956

BACKGROUND

Dr. Bayless founded Petromist Environmental Solutions, LLC in 2008, Bayless Consulting, LTD in 2003, Encap Technologies, LLC in 2001, Bayless Enterprises, Inc. in 1990, and Capsulated Systems, Inc. 1973. In addition to his responsibility as Chairman, he directed the technical arm of these companies. Since CSI's inception, he had broadened the application of Microencapsulation products into development and production of controlled release systems for mariculture (marine) feedstuffs and supplements, chemical and biological pesticides, biodegradation agents, catalysts for adhesives, ion exchange systems, medical devices, pharmaceuticals, specialized consumer products and hazardous material management systems. In addition to Microencapsulation, the feasibility of encapsulating larger items (Macroencapsulation) had been demonstrated. Such conformal coating application broadened the scope of activity into such diverse operations as hybrid electronic circuits, corrosion inhibition and metallic adhesion.

As a result of his work in finding successful solutions to complex Microencapsulation and Macroencapsulation problems, Dr. Bayless is internationally recognized as an authority in new micropackaging concepts, and as a well-qualified polymer chemist who enjoys distinguished record in aqueous, non-aqueous and high temperature phase equilibria. He has conducted extensive research into problems related to stabilization of epoxy mixtures, stabilization of liquid crystal coatings and techniques for separation of reactive media. During his ten-year career in NCR's Capsular Products Division, he authored more than a dozen patents in the field of Microencapsulation and contributed to the development of carbonless copy paper and time release aspirin. Several major corporations have implemented Dr. Bayless' development with resulting profitable production.

1973 to 1990 - Capsulated Systems, Inc.

Founded Capsulated Systems, Inc. in order to exploit markets for Microencapsulation technology. During the history of the company, he served as Chairman and President, while functioning as chief scientist.

1990 to 1997 – Bayless Enterprises, Inc.: Research and Development for several firms.

1998 to 2000 – Consulting in Southeast Asia region.

2001 – Founded Encap Technologies, LLC

2003 – Founded Bayless Consulting, LTD

2007 – Founded Petromist Environmental Solutions, LLC

ACHIEVEMENTS:

- Development of Microencapsulation system for mariculture feeds. Laboratory tests indicated improved health and growth of marine animals.
- Invented Microencapsulation adhesive locking system for threaded fasteners (bolts, screws). Replacement for expensive, clumsy mechanical locking devices.
- Patented conformal coating for a wide variety of corrosion inhibition applications. A form of the coating underwent extensive test programs and was approved by the U.S. Department of Defense for its Qualified Products List for use in protecting electronic circuits.
- Microencapsulated catalysts used in plastics molding industry. These are highly volatile, combustible materials. Their Microencapsulation was a particularly noteworthy achievement.
- Developed a Microencapsulated toner, which currently is used by on the largest copier manufacturers in the world.
- Microencapsulated agrochemical (Herbicides and insecticides) for world's largest agrochemical company.
- Developed ZnCAP, a zinc rich primer-using pseudo encapsulated zinc, a unique corrosion inhibition product for ferrous metals.
- Invented SPOT-AWAY, a personal-use, disposable spot remover using Microencapsulated dry cleaning fluid.
- Patented EELS, an electroluminescent light system using Microencapsulated phosphors.
- Invented F'Y'R'CAP, a Microencapsulated fire retardant product.
- Invented SILCAP, a lubricant system employing Microencapsulated silicone oil.
- Microencapsulated fragrances for controlled release applications.
- Investigate a wide variety of applications for Microencapsulation.
- 1967-1973 NCR Corporation - Materials Research; Research Chemist
 Research in Plastics Technology, Microencapsulation, and Aminoplast.
 Carbonless copy paper and time release aspirin were special areas of concentration.
- 1960-1963 U.S. Industrial Chemical Co. (Quantum) - Chemist
 Investigated polyethylene and polypropylene morphology.
 Invented molecular weight distribution evaluation systems.
 Studied polymers melt viscosity and relationship to molecular weight distribution and crystallinity.
- 1956-1958 Antioch College- Research
 Hydrothermal research - (study of water at high temperature and pressures; critical temperatures).
 Studied crystal growth technology associated with semiconductors.

PATENTS:

PATENT	NUMBER	INVENTOR	ISSUE DATE	DESCRIPTION
South Africa	6704993	RGB, et al	Jan 1968	Minute rupturable reagent-containing polymer capsules
South Africa	6900123	RGB, et al	Jun 1969	Hydrophobic

				polymer Microcapsules
South Africa	6900122	RGB, et al	Jun 1969	Minute Polymer Capsules
South Africa	6900089	RGB, et al	Jun 1969	Microencapsulati on
South Africa	6900088	RGB, et al	Jun 1969	Minute Polymer Capsules
Germany	1934458	RGB, et al	Jan 1970	Pressure-sensitive recording Material
France	2012741	RGB, et al	Mar 1970s	Pressure-sensitive recording Support
Germany	2034658	RGB, et al	Jan 1971	Poly (vinyl alcohol films of high solubility in water)
Canada	879,043	RGB	Aug 1971	Encapsulation process & its products
Canada	880,261	RGB, et al	Sept 1971	Capsule wall treatment process
South Africa	7102853	RGB	Nov 1971	Hydrophobic treatment of Minute Polymer- Thin-Walled Capsules
Germany	2123681	RGB, RLH	Dec 1971	Treating small capsules to make them Hydrophobic or to increase Hydrophobic properties
Germany	2253050	RGB, et al	May 1973	Small Polymer Capsules
U.S.	3,565,818	RGB, et al	Feb 1971	Encapsulation process and its products
U.S.	3,574,133	RGB, et al	Apr 1971	Encapsulation and its process
U.S.	3,576,660	RGB, et al	Apr 1971	Pressure- Sensitive record sheet and coating composition
U.S.	3,629,140	RGB, et al	Dec 1971	Cold water solubilization of

				capsule walls & products using this principle
U.S.	3,674,704	RGB, et al	Jul 1972	Three-phase system using Poly (Ethylco-vinylacetate) wall
U.S.	3,726,803	RGB, et al	Apr 1973	Interstitial condensation reaction

Four (4) U.S. Patent – 2001/2002

- | | | | | |
|---------|--------------|-----|----------|--------------------------------------|
| 1) U.S. | 6,562,460 B1 | RGB | May 2003 | Improved Moisture Barrier Properties |
| 2) U.S. | 6,833,191 | RGB | | Microencapsulation And Process |
| 3) U.S. | 6,899,958 | RGB | | Moisture Barrier |
| 4) U.S. | 7,297,404 | RGB | | Microencapsulation And Process |

One (1) Chinese Patent

June 2009

- | | | | | |
|----------|------------|-----|--|-------------------------|
| 5) China | 03814533.2 | RGB | | Moisture Barrier Resins |
|----------|------------|-----|--|-------------------------|

Clark Tibbs

Vertical Horizons One, Inc.

CAGE CODE: 1YVT1 TIN: 31-1797173

SBA 8(a) Certification # 108919 - Service Disabled Veteran Owned Small Business (SDVOSB)

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GSA Contract Schedule 874 (MOBIS) GS-10F-0336N Schedule 70 (IT/IS) GS-35F-0395N

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Online Reps & Certs on record <http://orca.bpn.gov> DUNS: 059715677

From: [John Haag](#)
To: [Stine, Deborah D.](#)
Subject: Crisis in Japan: Possible Strategy for Airborne Water Delivery
Date: Friday, March 18, 2011 10:53:31 AM

Dear Ms. Stine,

I have an idea related to the attempts to deliver water to the spent rod storage pond at the Fukushima Daiichi plant reactor #4. The idea is simple: Drop large water balloons.

In more detail:

- * Fill bladders of some kind with water.
- * Load them into a sling with a release mechanism beneath the CH-47 helicopters.
- * Drop them from a safe altitude onto the area directly above the pool.

This should assure that a much greater quantity of the water from each load makes it to its intended destination.

Here is a link to a site selling balloons with a 6 foot diameter for \$22 each:
http://www.balloondealer.com/detail.asp?product_id=BD6BLUE

Each of these balloons would hold around 900 cubic feet of water. This would deliver in excess of 6700 gallons of water per balloon.

I thought that using inexpensive balloons like this might be optimal, as a more substantial balloon might fail to burst easily and could damage the rods stored in the pool.

I hope that this is not a crazy idea and that it might be helpful in some way. I know that everyone there is very busy but it would be great to hear back from someone with a brief technical assessment, if at all possible.

Please feel free to contact me at 614.783.3214 if you have any questions at all.

Thank you for all that you do for our nation.

Have a great day.

John E. Haag
614.783.3214
7671 Broadwyn Dr
Reynoldsburg, Ohio 43068-2611

P.S. - I know how busy everyone there must be so I will try to get this to as many departments/individuals as I can in hopes that it can get assessed quickly by someone. I have already emailed Philip Coyle at OSTP and have spoken with Ms. Anderson in the Deputy Director's Office at DOE who has helpfully passed this along to their technical staff.

--

John E. Haag
Founder: Interactive Ideas & Innovation, LLC

<http://i3times.com>

The Future: Coming Soon

614.434.8485

From: [Clark Tibbs VHO-PVI-CTA](#)
To: Felicia.Jones@hq.doe.gov; ighotline@hq.doe.gov; igwebmaster@hq.doe.gov; research.contracts@iaea.org; Official.Mail@iaea.org; jaeany@un.org; jaeage@unog.ch; MEL@iaea.org; info@iaea.org; P.Kaiser@iaea.org; F.Chahine@iaea.org
Cc: [AAAAMediaCNN-ANDERSON COOPER Cooper](#); Rand.Beers@DHS.gov; Amy.Mahn@HO.DHS.GOV; [FDA-Margaret Hamburg-Commissioner](#); [Maxon, Mary E.](#); [Stine, Deborah D.](#)
Subject: Japan says it may take months to end radiation leaks - APRIL 3rd, 2011 :: See VHO Proposed Solutions ... courtesy of VHO, Inc.
Date: Sunday, April 03, 2011 9:53:56 PM
Attachments: [m=02&d=20110404&t=2&i=378082404&w=250&fh=&fw=&ll=&pl=&r=2011-04-04T001616Z_01_BTRE73300R700_RTROPTP_0_JAPAN-QUAKE](#)
Importance: High



Vertical Horizons One, Inc.
Helping Our Clients Make Better Decisions

03 April 2011

-

To ALL:

Please examine carefully the proposed solutions (that VHO, Inc. has already sent to you) as remediation, to this escalating and globally dangerous Catastrophe ?

-

-

Officials believe the crack may be one source of the radiation leaks that have hobbled efforts to control the six-reactor complex **and sent radiation levels in the sea to 4,000 times the legal limit.**

-

-

FROM: <http://www.reuters.com/article/2011/04/04/us-japan-idUSTRE72A0SS20110404>

-

Japan says it may take months to end radiation leaks

Photo



Sunday APRIL 3rd, 2011 8:16pm EDT By [Chizu Nomiya](#) and [Yoko Nishikawa](#)

TOKYO (Reuters) - Japan warned on Sunday it **could take months to stop radiation leaking** from a nuclear plant crippled by a huge earthquake and tsunami three weeks ago, while voters said a coalition would better handle the crisis and post-quake recovery effort.

An aide to embattled Prime Minister Naoto Kan said the government's priority was to stop radiation leaks which were scaring the public and hindering work on cooling overheated nuclear fuel rods.

"We have not escaped from a crisis situation, but it is somewhat stabilized," said Goshi Hosono, a ruling party lawmaker and aide to Kan.

"How long will it take to achieve (the goal of stopping the radiation leakage)? I think several months would be one target," Hosono said on a nationwide Fuji TV programme on Sunday.

In the face of the prolonged crisis, nearly two-thirds of Japanese voters believe the ruling Democratic Party should join hands with the opposition Liberal Democratic Party (LDP), a Yomiuri newspaper poll showed, potentially warming lawmakers in both camps to the scheme.

Kan last month invited Sadakazu Tanigaki, head of the LDP, to join the cabinet as deputy premier for disaster relief, but Tanigaki rejected the offer.

Plant operator Tokyo Electric Power Co (TEPCO) found a crack in a concrete pit at its No.2 reactor in the Fukushima Daiichi complex at the weekend, generating readings of 1,000 millisieverts of radiation per hour in the air inside.

The leaks did not stop after concrete was poured into the pit, and TEPCO turned to **water-absorbent polymers** to prevent any more contaminated water from flowing out.

The latest effort to stop radioactive water entering the Pacific started on Sunday afternoon.

"We were **hoping the polymers would function like diapers** but are yet to see a visible effect," said Hidehiko Nishiyama, a deputy director general of the Nuclear and Industrial Safety Agency.

Officials believe the crack may be one source of the radiation leaks that have hobbled efforts to control the six-reactor complex **and sent radiation levels in the sea to 4,000 times the legal limit.**

Nishiyama said three of the six reactors were now generally stable. TEPCO has said it will scrap at least four reactors once they are under control, but this could take years or even decades.

Japan's crisis has rocked the nuclear industry and the European Union said on Sunday it will affect the fight against climate change as energy policies are reviewed.

Germany and Switzerland have said they will shut older reactors or suspend approvals, China has suspended approvals for new plants, and Taiwan is studying cutting nuclear output.

PM UNDER PRESSURE

The 9.0 magnitude quake and tsunami on March 11 has left nearly 28,000 people dead or missing and Japan's northeast coast a splintered wreck. The disaster has hit economic production and **left a damages bill which may top \$300 billion.**

After a three day intensive air and sea search by thousands of U.S. and Japanese forces another 77 bodies were recovered, Kyodo news agency said on Sunday.

Prime Minister Kan is under intense pressure to steer Japan through its worst crisis since World War Two, but after three weeks many Japanese are angry that the humanitarian disaster seems to have taken a back seat to the nuclear crisis.

Unpopular and under pressure to quit or call a snap poll before the disaster, Kan has been criticized for his crisis management.

Voter support for the Kan's government stood at 31 percent in the Yomiuri poll, up from 24 percent in the previous survey conducted before the quake.

Still, it also showed almost 70 percent of the respondents believe Kan is **not exercising leadership**, and 19 percent of them want him to step down soon.

More than 163,710 people are living in shelters, with more than 70,000 people evacuated from a 20 km (12 mile) no-go zone area the nuclear plant, and another 136,000 people living a further 10 km out have been told to leave or stay indoors.

Japan's health ministry said on Sunday it had detected radioactive substances higher than legal limits **in mushrooms** from Iwaki in Fukushima, said Kyodo.

"Grown in Fukushima" has become a warning label for those nervous of radiation which has already been found in some vegetables close to the nuclear plant.

"There is no way we will be able to sell anything," said 73-year-old farmer Akio Abiko. "People in Tokyo are just too sensitive about this kind of thing."

Milk and other foods such as mushrooms and berries in parts of Ukraine **are still contaminated** by radioactive fallout from Chernobyl, **25 years** after the world's worst nuclear disaster, Greenpeace said on Sunday.

(Additional reporting by Shinichi Saoshiro, [Kiyoshi Takenaka](#) and [Yoko Kubota](#) in Tokyo, [David Dolan](#) in Fukushima and [Damir Sagolj](#) in Rikuzentakata, [David Fogarty](#) in Bangkok, [Richard Balmforth](#) in Kiev.; Writing by [Michael Perry](#) and [Andrew Cawthorne](#); Editing by [Daniel Magnowski](#))

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Also please see: http://www.cnn.com/2011/WORLD/asiapcf/04/03/japan.nuclear.reactors/index.html?section=cnn_latest

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We hope to hear from you soon ... we are available 24 x 7 x 365 at: CTA@ee.net **Phone: 740.366.9013 Cell: 740.502.9010**

Clark Tibbs

Vertical Horizons One, Inc.

CAGE CODE: 1YVT1 TIN: 31-1797173

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From: inventor@crimea.edu
To: [Stine, Deborah D.](#)
Subject: Cosmo-Genetic Matrice, A Fundamental Discovery
Date: Thursday, March 24, 2011 1:19:50 PM
Attachments: [Cosmo-genetic matrices.doc](#)

Dear Ms Stine!

We would like to bring to your attention the following article that contains a description of an innovative concept of cosmo-genetic matrices (CGM). In the author's opinion, this work can shed light on solutions to certain challenging issues of cosmology, economics and philosophy. We believe that comprehension of the principles presented in this essay will make a contribution to the overcoming of the stagnation in modern science and economics.

Yours sincerely
Peter Z. Stepanenko
PhD in Biology
Taurida National University
Simferopol, Ukraine



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Summary. The article presents the characteristics of the cosmo-genetic matrixes which V.I. Vernadsky united with the achievements of the new scientific revolution. The theory of "The Origin of Planets of Solar System" is presented in summary, it is based on the consistent development of binary stars: the Sun and the Rontse. These discoveries have been made thanks to the new theory — "Element-System Philosophy" and the General Law of Philosophy.

From: dscepki@aol.com
To: [Stine, Deborah D.](mailto:Stine_Deborah.D)
Cc: wpress@cs.utexas.edu; zewail@caltech.edu
Subject: Fwd: From: Dorothy Szczepkowski, Streamwood, IL. RE: Follow Up to your August 19, 2009 Email to me. SUB: New Criminal Advanced Technology Being Used in the United States; Enables 24/7/365 Stalking, both Physical and Remote, Endless Crimes, and Prem...
Date: Monday, March 07, 2011 3:04:26 PM
Attachments: [CRIMINAL TECHNOLOGY SURVEILLANCE.doc](#)
[PICTURE - RAYMOND BAILEY.doc](#)
[PICTURE - BHASKARA GARA.doc](#)
[Los Angeles Billboard - Stalking and Remote Electronic Assaults.doc](#)

Dorothy Szczepkowski

March 7, 2011

Dr. Deborah D. Stine, Ph.D.
Executive Director
President's Council of Advisors on Science and Technology Policy
Office of Science and Technology Policy
Executive Office of the President
New Executive Office Building
Room 5235-7
Washington, D.C. 20502

Dear Dr. Stine:

In follow up to my email/letter I sent to you Wed, Aug 25, 2010 8:12 pm, ("original message" following below as forwarded,) and as my email/letter, also, forwarded below, to Dr. William H. Press, Ph.D. and Dr. Ahmed H. Zewail, Ph.D. dated Wed, 19 Aug 2009 13:05:59 -0700, I want you to know President Obama's Commission for the Study of Bioethical Issues held a Conference in Washington, D.C. February 28 through March 1, 2011. If you click on the link below I provided, you will be brought straight through to where The Commission opened a session up to the public and 17 Targeted Individuals, like me, were able to give a brief 2 to 3 minute expressions of concern. The 17 Targeted Individuals were from throughout the United States. All, expressed to The Commission what I expressed to you below in my emails/letters that I am forwarding as a reference, and through the 1-1/2 year period I have written your office. None of us know each other, but the expressions of the crimes being committed are the same. To quote Deborah Dupre, Human Rights Examiner.com, as I have written to you before, **"You will find too many technological common denominators to simply ignore and there are too many credible victims that cannot simply be categorized as delusional."** This type of criminal 24/7/365 surveillance and threat to an individual's health and life is what our country will have to

contend with in the future.

This deadly criminal gang takes and uses techniques straight out of an Interrogation Manual. Most of their interrogation tactics are done "tongue-in-cheek." It appears they think this torture is amusing, a game. At night, after I lie down, my bed and bedroom becomes a torture chamber for the criminals' use. During some of the worst nights by these criminal-terrorists, I have often thought that lying on a bed made of nails would be of less torture. **They use the device that produces the Voice-to-Skull transmissions as a weapon. They use all kinds of interrogation torture techniques,** including calling my first name to get my immediate attention and then proceed with non-stop Voice-to-Skull transmissions, consisting of preselected repetitions. I am positive our President Obama would take swift action if he was aware of what was happening, in America, to innocent Americans.

Please, Dr. Stine, take the time out of your very busy day to look at and listen to the link below my last sentence. It is about 50 minutes long. I am requesting you to provide this new information to your PCAST members and to please get back to me with your outcome.

These criminals need to be investigated and arrested for my safety and for society's.

<http://www.tvworldwide.com/events/bioethics/110228/default.cfm?id=13288&type=flv&test=0&live=0>

Thank you.

Respectfully,

Dorothy Szczepkowski

-----Original Message-----

From: dscepki <dscepki@aol.com>

To: Deborah_D._Stine <Deborah_D._Stine@ostp.eop.gov>

Sent: Wed, Aug 25, 2010 8:12 pm

Subject: Re: From: Dorothy Szczepkowski, Streamwood, IL. Follow Up to your August 19, 2009 Email to me. RE: New Criminal Advanced Technology Being Used in the United States; Enables 24/7/365 Stalking, both Physical and Remote, Endless Crimes, and Premeditated Attempted Murder

Dorothy Szczepkowski

August 25, 2010

Dr. Deborah D. Stine, Ph.D.
Executive Director

President's Council of Advisors on Science and Technology Policy
Office of Science and Technology Policy
Executive Office of the President
New Executive Office Building
Room 5235-7
Washington, D.C. 20502

Dear Dr. Stine:

The email below was forwarded to you on Wed, 19 Aug 2009 13:05:59 -0700. Your response back to me was Wed, Aug 19, 2009 5:44 pm, "Thank you for your comments. I will provide them to the PCAST members."

Dr. Stine, I am in need of your action, feedback and resolution from our great country's government officials and experts. The deadly surveillance technology and the tactics used by the criminals in my attached story/summary are killing me. The stress that is put on my heart on a daily basis is taking its toll. My heart rate is never "at rest" from the constant Voice to Skull attacks and the intense aggression used by the criminals 24/7. If the criminals' technology and tactics don't kill me by heart attack, I am afraid it will produce a stroke. As a result of their 24/7 badgering, their constant disruption of my sleep and their intentional sleep deprivation Voice to Skull tactics used on me nightly and disruption of every meal, no exceptions, I am often dizzy, most days and nights my head hurts and throbs, all my bones ache, my nerves feel raw, I feel run down and weak, my throat hurts and I frequently have pains in my stomach. These criminals are murders and they will not stop or back off until they kill me. I need you to know these criminals are able to kill innocent human beings and not be charged with murder, at this point, because no one in government has devoted time to solving this horrific crime. I am not alone. **There are hundreds of us being tortured to death in our own homes every day and night, here in our United States.**

Deborah Dupre, Human Rights Examiner.com, has written many articles over the years on the atrocity. Following are sections from more than several articles she has written on the subject:

Ms. Dupre writes of Mr. James Walbert, a Targeted Individual himself. "There needs to be Congressional Hearings where the thousands of non terrorist ordinary Americans who are getting attacked daily by directed energy weapons and organized gang stalked as well as targeted with numerous other COINTELPRO tactics get a chance to come forward and describe how their lives have been ruined **and how they have been tortured in their own homes...**"

"Walbert now unofficially represents thousands of American Targeted Individuals, innocent children, women and men covertly persecuted in the United States - **in their own homes and communities - by one of, if not the single most sophisticated organized criminal systems to hit the planet.**"

"Rudimentary data about targeted individuals plus anecdotal reports indicate that **since 2001, an influx of innocent, injured citizens have been lodging complaints with law**

enforcement; national and international human rights organizations; elected officials; and media about their experiencing covert, cruel and inhumane treatment.”

“In sheer desperation for survival, at least some of these TIs resort to online self-help groups. A look at content of their messages in these groups reveals their disturbing accounts: **typically death threats, rapes, physical assaults and assassination attempts.**” These reports consistently meet criteria of torture.

“TIs claim being covertly tortured in their homes and communities.” “TIs pleas for advocacy are consistently denied by medical doctors, psychiatrists, psychologists, organizations of these professionals, **police, elected officials,** and media.” **“Instead of considering possibilities of advanced technology;** widespread use of “interrogation” treatment; or non-consensual human experimentation; psychologists, as others, appear to re-victimize TIs with labels before conducting a thorough investigation.” **“Scientific research publicly available about this phenomenon is almost non-existent according to a report by Peter Phillips, Lew Brown and Bridget Thornton.”**

Another T.I., Richard Centeno, wrote requesting hearings on Capitol Hill. “There is also significant evidence that the weapons transmit extra low frequency signals that connect to human neural frequencies thus creating sounds and “voices in the head.” “I implore you and your staff to spend a few minutes browsing the internet where you will find hundreds of credible victim accounts and a body of scientific evidence that corroborate that there is a widespread, pervasive secret war being waged by a rogue element against unsuspecting citizens nationwide.”

“You will find too many technological common denominators to simply ignore and there are too many credible victims that cannot simply be categorized as delusional.”

Please, Dr. Stine, read my story/summary very carefully. Thank you.

Respectfully,

Dorothy Szczepkowski

Attachments

-----Original Message-----

From: Stine, Deborah D. <Deborah_D_Stine@ostp.eop.gov>

To: dscepki <dscepki@aol.com>

Sent: Wed, Aug 19, 2009 5:44 pm

Subject: FW: From: Dorothy Szczepkowski, Streamwood, IL. RE: New Criminal Advanced Technology Being Used in the United States; Enables 24/7/365 Stalking, both Physical and Remote, Endless

Crimes, and Premeditated Attempted Murder

Ms. Szczepkowski,

Thank you for your comments. I will provide them to the PCAST members.

Deborah D. Stine, PhD
Executive Director, President's Council of Advisors on Science and Technology Policy (PCAST)
Email: dstine@ostp.eop.gov<<mailto:dstine@ostp.eop.gov>>;
Phone: 202-456-6006
Fax: 202-456-6021
Office of Science and Technology Policy
Executive Office of the President
New Executive Office Building, Room 5235-7 Washington, DC 20502
Webpage: www.ostp.gov/cs/pcast

----- Forwarded Message

From: <dscepki@aol.com>

Date: Wed, 19 Aug 2009 13:05:59 -0700

To: William Press <wpress@cs.utexas.edu>, "Zewail, Ahmed H" <zewail@caltech.edu>

Subject: From: Dorothy Szczepkowski, Streamwood, IL. RE: New Criminal Advanced Technology Being Used in the United States; Enables 24/7/365 Stalking, both Physical and Remote, Endless Crimes, and Premeditated Attempted Murder

Dorothy Szczepkowski

August 19, 2009

Dr. William H. Press, Ph.D.
President Obama's Council of Advisors for Science and Technology
Professor
Computer Sciences
Institute for Computational Engineering and Sciences
ACES 4.102
1 University Station (CO200)
Austin, TX 78712

Dr. Ahmed H. Zewail, Ph.D.
President Obama's Council of Advisors for Science and Technology
Linus Pauling Chair
Professor of Chemistry
Professor of Physics
Director
Physical Biology Center for Ultrafast Science and Technology
California Institute of Technology
Arthur Amos Noyes Laboratory of Chemical Physics
Mail Code 127-72
1200 East California Boulevard
Pasadena, California 91125

Dear Dr. Press and Dr. Zewail:

I need you and our government to know the following facts about the type of deadly crime that is being perpetrated by criminals in Streamwood, Illinois and surrounding areas, just outside of Chicago. I need you and our government to know of the new criminal advanced technology that is being used on me. This is truly a matter of life and death for me and a national security issue. I need you and our government to know if these criminal gangs can do this crime to me, they can do it to absolutely anyone. No one will be safe; no one will have identity security, any security or our precious Constitutional Rights. Please take the time out of your very busy day to read my story. Thank you.

Respectfully,

Dorothy Szczepkowski

Attachment

----- End of Forwarded Message

Please help me in any way you can. I am a Targeted Individual, by a criminal gang, who talks to me via Voice to Skull transmissions, stalks me verbally via Voice to Skull transmissions and physically when I leave my house and Remotely Views me 24/7/365, in an attempt to murder me and not be brought to justice because the type of crime is in its infancy, at best, to law enforcement and will not be recognized. From everything I pieced together, the paid criminal gang doing the 24/7/365 Voice to Skull transmissions and Remote Viewing on me started in 1996 and possibly as early as 1995, although this criminal gang did not let me know (through their Voice to Skull transmissions to me) until January, 2005, and ever since it has been lethal.

The following paragraph starts my **summary**. It has been shortened, but it is a brief recap of what I have been experiencing since January, 2005. In the past five years, I have mailed out 900 of the following letter (summary) asking and seeking help. Is there any way to know how many other innocent Targeted Individuals/Victims, like myself, have either been murdered through this technology or have taken their own lives to put themselves out of the 24/7/365 torture? Is there any way to know how many individuals and which individuals this criminal technology is presently being used on, but are unsuspecting because the criminal gang chooses to remain silent for whatever their motive is? This deadly criminal technology is now available and definitely being used on some suspecting and some unsuspecting victims.

My life is at risk and if I don't get help, this criminal gang will kill me under the constant pressure, constant torture and exploitation. I have made contact with law enforcement listed towards the end of my letter regarding same. I sought medical help and the Doctor said he never heard of such a thing and he could not think of any tests that would reveal anything done to my body. **This criminal gang has said over and over, "They will never be able to figure the monitor out; they will never figure the eye out."** I am beginning to believe that is so. In this letter I have detailed how a hardened criminal gang has launched an all out campaign to kill me, without being detected or suspected. To make myself clear, I feel I need to explain to you how everything unfolded. I have been trying to get help for five years and it has been extremely hard and next to impossible. I have tried different sources; educational, government, and law enforcement. As you read through the letter, you will see I tried going through my village police department. They do not have the expertise or resources to carry out such a sophisticated, complicated, high tech investigation. I have been told I need enough Probable Cause and sufficient evidence to open an investigation to substantiate in a court of law. I don't understand, are we, as a society, to allow someone to premeditate torture and slowly kill another person because the law stands in the way of procuring evidence. I have been told what I describe is not technologically possible. (As you read through my letter, you will read I had a "Sweep" done in July, 2005. In early winter of 2005, I contacted that individual to discuss what I was experiencing, as I have outlined in my letter, and he said he has read about other people who have a similar surveillance on them. This man is a retired Detroit area Police Officer.) These criminals know that what I am telling you in my letter is so far-fetched and so technologically advanced, that I will be dismissed as having a mental problem. Please believe me when I say, there is absolutely nothing wrong with my mental state; I am not unstable and my claim is valid.

The help I need goes far beyond most people's understanding. (I have been told that not only is it not possible, but if it were it would be too expensive.) There is a gang in my neighborhood that consists of mostly males, and through some sort of (sophisticated) electronic, electro-field, laser and/or satellite or some other method/application of surveillance has somehow tagged, tapped, and set-up into me/my body and are intracranially stalking me 24/7/365. I am a 61 year old woman who lives alone, in a townhouse community of younger people, and I am retired. I have no children, my parents are dead, and both my brother and sister live out-of-state. The activity first came to my attention December, 2004. I began to realize that my neighbors were able to hear what was going on within my townhouse unit, through conversation I overheard. At that time, Ronald T. (Tad) Gralewski (born in 1972) lived at 211 Locksley Dr., and he was part of some sort of motor cycle group/club, Jason A. Surprise lived at 203 Locksley Dr. and Keith V.

Kulczak lived at 217 Locksley Dr. All became very good friends and all started giving me trouble right from the start. They were verbally abusive, and they kept bumping into me when I was out during the course of my day(s), and most of the time they were on their cell phone. Jason Surprise would be outside frequently, walking around and stopping to talk to a lot of the neighbors. Kerry J. Ganofsky lived at 121 Locksley Dr., and moved into his townhouse in 1995. Raymond E. Bailey didn't move into his townhouse until March, 2000. Kerry Jon Ganofsky and Raymond Edward Bailey were very good friends. They were together a lot and you could see Raymond Bailey worked almost like a handyman around Kerry Ganofsky's townhouse unit.

Two reasons, when I look back over the years, I say this is I heard one of the females talk about a telephone conversation I had with my brother, and she was right on all the details. The telephone conversation was in 1999. I had never mentioned anything about that conversation outside my home. The other reason is, Ronald (Tad) Gralewski, Jason Surprise, and Keith Kulczak, would be waiting for me outside stores I would go to, or if I went to the post office, or wait for me on the street, in their vehicle, when I was coming home from work.) In January, 2005, I started to hear one female voice starting to detail my activities in my townhouse, as I was doing different things in my den; I have two televisions in my den. One television I use for viewing network programs and the other I ran a microphone from my garage to the audio jack on the television set to be able to hear what was going on outside my townhouse unit because there were men in their vehicles slowing down in front of my house or stopping by my driveway, or walking on my property, all of the time. By March, 2005, I started hearing both female and male voices, at a normal voice level, detailing what I was doing while I was in the particular room I happened to be in at the time. In the bathroom, they would tell me I was combing my hair, and then they would criticize the way it looked. While I was putting my top on, they would tell me what store I bought it from and even the size. In the den, the female and male voices would tell me I was watching television and eating, if I was, and they were right. They were even able to tell me what I was eating. In the kitchen, they would tell me what I was cooking and where I was in the kitchen at the time. At that time, I figured this gang must have planted microphones in my townhouse. There was one break-in that I was aware of in which about 80 video tapes were stolen from my townhouse. The criminal gang obviously wanted me to know about that break-in. I do wonder how many times prior to that planned, premeditated break-in they had been in my house without me knowing, and what they were doing and tampering with. In May, 2005, I realized there must be hidden cameras in my townhouse, as a neighborhood teen boy stopped in front of my unit and said, "See you later, Dorothy." A strange response from a teen boy I never had anything to do with. From there was a mushrooming effect, both males and females making different comments about me, while I was outside. Because they kept this up all day and night long, in July, 2005, I hired a debugging firm, based out of Michigan, to "sweep" my home and they didn't find anything. The gang's actions became extremely aggressive in July, after the "sweep." **They knew I was aware that they were using some sort of electronic surveillance on me, as they made it a point to make that fact obvious.** Two very active gang members of this gang are Raymond Edward Bailey (42 years old) and Alicia Ailene (Carr) Bailey (43 years old). They moved October 4, 2006, to 6801 Waterford Drive, McHenry, IL 60050. Prior to the move, they lived at and still own, although the property is up for sale, 427 Locksley Dr., Streamwood, Illinois 60107. Raymond Edward Bailey works in Information Technology at High Voltage Software, Inc., in Hoffman Estates, Illinois, as IT Director, and Alicia Bailey works at Burns & Wilcox in Downers Grove, Illinois. I kept hearing my neighbors say, "Raymond Bailey put a monitor on her.;" "She will never figure the monitor out.;" "The way the monitor is set-up, they will never be able to figure it out.;" "He will never take it off of her.;" "Unless he gets caught, he will never let her go.;" "She has a collar on her.;" "He will never turn the monitor off.;" and, then they laughed as they walked past my townhouse, or when I would walk past them.

Raymond Bailey, his wife Alicia, and their associated/peer gang have a 24 hour surveillance/monitor/stalk on me, done in shifts, stating they are (*) videotaping me constantly, no matter where I am during the course of the day (even when I am driving my car or 60 miles away at some event) or night. I think there is a good chance they are selling the video tapes of me somewhere or over the Internet. I heard Raymond Bailey say "She is a gold mine." Prior to the move, when Raymond

Bailey came home from work at the end of the day, (oftentimes, about one to two hours before he came home, the gang would start saying, over and over, "We are waiting for Ray.") After Ray came from work I would hear him say, through Voice to Skull transmissions to me, to his peer gang who is the paid criminal staff of the 24/7/365 surveillance/monitor/stalk and Voice to Skull transmissions, "What did she eat today?"; "Where, and how much did she eat?"; "Where did Dorothy go?"; "What did she do?"; "Did she have a bowel movement today?" Raymond Bailey would even ask how many times I peed. Then Raymond Bailey would say either "Let her eat tonight." or, "Don't let her eat tonight." It is not uncommon for the paid staff female on the day shift to say "We are watching Dorothy eat." I haven't been able to eat one meal in peace, without disruption, since about March of 2005, no matter if I was in my house eating or at a restaurant. Before Raymond Bailey's move, one of the males in the gang said, laughing, "He won't even let her eat." Then the gang would start talking about if they should let me sleep or wake me up during the night. Most often, they will make a lot of noise with their voices to wake and keep me up, or if I do fall asleep, as soon as I wake up, they start talking to me in my ear, or intracranially to keep me awake. They even boast about the fact that they have control over my sleep and they threaten me during the day that they are not going to let me sleep at night.

Bhaskara Gara, 217 Locksley Dr. He shares the common wall with me. I want to stress how heavily involved Bhaskara Gara is in partnership with Raymond E., Alicia A. Bailey, and their associated paid criminal gang in the 24/7 stalking of me. This gang tells Bhaskara Gara what time I got up in the morning, and he comes home in the evening at that same time, 12 hours later. Or, if he should come home earlier than that particular time, he will leave in the evening 12 hours after I got up in the morning. He does this everyday. This criminal gang tells Bhaskara Gara when I am on the toilet, or taking a bath, and he starts slamming doors until the very minute I am finished. Sometimes he will go outside the minute I start my bath and then go inside his unit the minute I step out of the tub. Frequently when I am on the toilet he pounds on the walls. Even when I am in the kitchen and he is using his common wall cabinets or microwave in his kitchen and I go upstairs to the bathroom, he actually follows me upstairs, in his unit, and starts using the common wall cabinets upstairs or starts pounding on the wall upstairs. 5 days out of 7, when I start to eat my breakfast, he starts slamming exterior doors or sets off his vehicle alarm. He has parked his car right next to mine in a shopping mall parking lot that has 184 stores. What percentage of chances that could be coincidental? He is criminally participating in the crimes against me. Bhaskara Gara works at AT&T in Hoffman Estates, Illinois.

I have gotten my local police involved, but they do not have the expertise to carry out an investigation. This case/police work is too sophisticated for them. When I had a meeting at the police station in December, 2005, Commander Michael Zeigler said he wanted to help me, but did not know if he could. Somehow, this operation that the Bailey's are connected to, with the other members of this gang, must be located and run out of some place other than their house; and, **very well, run under another name than Bailey. I suspect Kerry Jon Ganofsky, CEO and Founder of High Voltage Software, Inc., Red Eye Studio and Sock Puppet Studio, all in Hoffman Estates, IL, also, is part of this crime organization.** Kerry Jon Ganofsky used to live in my townhouse community up until about the end of 2004/the beginning of February, 2005. Kerry and his wife Beverly (Derose) Ganofsky now reside at 630 Cole Drive in South Elgin, Illinois. Raymond Edward Bailey and Kerry were very, very good friends, and at that time, I didn't know Raymond worked for Kerry at High Voltage Software. I found this out in June, 2006, while researching on the Internet. High Voltage Software has a 28,000 square foot motion capture, animation and effects facility, which is located across the street, at 2155 Stonington Avenue, Suite 122, under the name of Red Eye Studio. It is a state-of-the-art performance capture studio designed to fulfill the needs of any production; be it film, television, broadcast, video games, sports analysis, medical/education software or research and development; it is designed to fulfill every animator's need. It has a dedicated Sound Department, end-to-end original sound engineering for music, sound effects and voiceovers, and a Tools and Technology Department for "bleeding edge" software performance. I read the studio is home to a fully customizable, tetherless, million-

pixel-per-camera motion capture system; and, using this system allows the staff's innovative approaches to capture every nuance of human and non-human motion in real-time, including multiple subjects, props, stunt rigs, and detailed facial motion. The following was taken off the Internet for Sock Puppet Studio, which is also owned by High Voltage Software: "Eric Nofsinger is Vice President of Creative Content at High Voltage Software, which translates as Grand High Overlord of a staff of over 95 artists, sound guys and designers. This makes sense, since over the 10+ years that Eric has been in the industry, he's served in all those roles and more. Eric was one of the first employees at High Voltage, and has developed over 50 games with them. When High Voltage decided to create their own motion capture studio, Eric led Red Eye Studio through their growing pains. When High Voltage decided to spin off a DVD creation company, Eric led Sock Puppet Studios through over 30 DVD releases. Eric has been running companies for longer than most game developers have been in the industry. High Voltage Software can do all its own composing, mixing, recording, and editing with a full sound staff." Considering that Kerry Ganofsky's 28,000 square foot studio and his office environment could be conducive, along with the personnel capable of high-tech innovations, the education to allow it, business contacts in the game industry as peers and associates and the fact that Raymond Bailey has always been the best of friends with Kerry Ganofsky makes sense to me. **I feel Raymond Edward Bailey, "Ray" is being used/volunteering as a "front man"/decoy to divert attention away from the real owner of this criminal organization. Why would anyone commit such serious felonies and tell the victim who they are?**

Joshua Vanveld, who moved two doors down from me in September, 2005, said as he was unloading his moving van the day he moved in, "You should see her wash her ass. Bailey put a monitor on her." Joshua Vanveld also works for High Voltage Software, in Hoffman Estates, IL, as a "Producer," and is a friend of Raymond Bailey. I feel it could be the criminal organization. (From my reading on the subject of electronic surveillance, it is not uncommon for local police not to have the resources to carry an investigation through to an arrest, and this gang, being professional hardened criminals, are fully aware of this.)

Margaret M. Bohlen, who lived right next door to Kerry Jon Ganofsky until 2002, was aware of and involved in this crime from the onset. Although I did not know it at the time, through researching the Internet, I learned **she is Kerry Jon Ganofsky's Office Manager at High Voltage Software in Hoffman Estates, IL, and a Producer at his Red Eye Studio.** **There are a lot of people tied to and participating in this crime that work for Kerry Jon Ganofsky, owner of High Voltage Software, in Hoffman Estates, Illinois.**

After a lot of research on the Internet, I feel Raymond and Alicia Bailey's associated criminal gang's sophisticated, 24/7/365, electronic, electro-field, laser and/or satellite type of surveillance has characteristics very similar to the National Security Agency's (NSA's,) although I don't think Raymond Bailey's electronic, electro-field, laser and/or satellite surveillance system has anything to do with NSA's. I heard one of the paid gang males say, after I discovered through my reading that Raymond E. Bailey's gang's monitor was like NSA's, **"NSA has a monitor like ours."** I also heard the paid staff criminal female from **Raymond Bailey's gang say, "If they can't find anything, they can't pin anything on us."** That is and has always been the gang's mentality . . . we are untouchable, we can get away with perpetrating any crime, there is no way to figure the monitor out and definitely no way to procure evidence; we can even get away with murder.

It has been an extremely long, hard and unbelievable process, both physically and mentally. The following is what I know about the 24/7/365 electronic, electro-field, laser and/or satellite type of surveillance/monitoring equipment Raymond and Alicia Bailey and their associated criminal gang have on me to date:

1. **It can see my entire body day or night (even in complete darkness.) I have heard them say, "This is better than any show we could watch." and, "We made her shake." It sees every movement my body makes and knows everything it touches, no matter where I am. I.e. whether in my townhouse, 60 miles away or while driving inside my car day or night. It is able to see what I am seeing out of my eye, (and it sees in color) when my eyes are open (a paid male in the gang said, "I told him we should not let her know we could see out of her eye.")**, and it can also see what my body is doing when my eyes are closed. I.e. When I am laying on my back, side, if I lift one of my arms or move a leg. They are able to video tape. (The gang keeps saying "We are (*) videotaping for Ray.", and some of my neighbors have mentioned different things I have done inside my house, at different times, in front of me.) **They can also tell if my eyes are watering or have tears in them, (I have heard the paid criminal gang say; "Ray wants to see her cry." Many, many times.)** They can see if I am sweating or when I blink my eyes. **They are able to tell if I am smiling or not and all facial expressions, at any given moment, no matter where I am, 24 hours a day. They know my heart beat, if I am breathing fast or slow and if I have a twitch, absolutely anywhere in or on my body.**

2. **The gang is able to hear every sound my body makes, both internally and externally. I.e. stomach gurgling, and even gas in my stomach, it appears as if they can hear everything from inside my body out. They are able to hear and see me swallow. Even when I am trying to eat, or take a sip of liquid, or even if I start to choke because of the paid staff criminal female's intentional verbal stalking/harassment, Voice to Skull transmissions done for me not to enjoy anything, much less anything I eat. When it goes down the wrong way, the paid staff criminal female says either "Give up" or "Ray." Even when I am gasping for breath and have tears in my eyes because I am choking, she still continues with "Give up."** She is able to know exactly where the food and beverage is in my epiglottis/larynx as it is in the process of going down. She does Voice to Skull transmissions on me exactly after it has left my mouth and is in my epiglottis/larynx. She goes, in spurts, with Voice to Skull transmissions at the exact instant I swallow, and when the inside of my ears click from a swallow or yawn; the paid criminal female says, "Ray." At least 10% of the time, when I even swallow my own saliva, the paid criminal female says, "Ray," during the course of the day; and, about 10% of the time after I lay down for the evening and before I get up in the morning, after I wake up. **This paid staff female is barbaric.** They are able to hear me pee and have a bowel movement. I even purchased an AJ-34 Audio Jammer and they were still able to hear. **The (*)gang is able to hear everything I say, every telephone conversation and person-to-person conversation that I have and they are able to audio record and play it back.** I (*) heard the play back of a telephone conversation I had with one of my friends, they played back a couple of sentences when only my friend was speaking to me; I heard a playback of a conversation I had while I was driving in my car, of only when I was speaking; and I heard a playback of a transaction I had with a man that fixed my vehicle, of only his voice.

3. **This is very, very, very important, the gang is able to talk in my ears and intracranially/in my head through Voice to Skull transmissions, all day and night long, and they do this non-stop, 24/7/365. All of the time, it is threats. I.e., "We will keep her up tonight."; "We will follow her around tomorrow."; "When she comes home, we**

will follow her around.”; “Talk to her when she eats.”; “Talk to her when she sleeps.”; “Talk to her when she goes to the toilet.”; “Talk to her when she is taking a bath and washing.” They almost always preface every statement with “Ray.” When they speak to me intracranially/in my head, Voice to Skull transmissions, the criminal gang has the ability to control the volume. The first 3 years, most of the time, they spoke in a normal tone/volume. But, depending on the affect they were looking for or wanted to produce, they would speak slow and soft and sometimes they actually screamed and yelled. Beginning in June, 2005, for the last 5 years, the criminal gang does all Voice to Skull transmissions, very deep into my head and very soft. The criminal female in the gang said, “Ray said we should talk in her head.” Sometimes two or more of the gang members speak at the same time. It is hard to describe exactly where these sounds are within my head, it is almost like their voices are coming from my entire head. Prior to his move, through Voice to Skull transmissions on me, I would hear Raymond Bailey tell the gang, “Follow her around in her ears.” Or, “Follow her around in her head.” That means no matter what I do during the day or no matter where I go, the gang are to stalk me and keep talking to me in my ears or head through Voice to Skull transmissions.

Raymond Bailey and his associates’/gang have a paid criminal staff monitoring/surveillancing me 24/7/365 consisting of one female, white, about 40 years old, a male with a deep/low voice, probably between 40 to 50 years old (not sure of his race) and one thirty-something white male during the day. After about 10 P.M., there is one white paid staff female, around 30 years old and one white paid staff male, 30 something who instructs the staff female what type of harassment/torture is to be used on me at any given moment during their “graveyard” shift. The paid staff male who supervises the A.M. shift of this gang, will, oftentimes, tell the paid staff criminal female that works with him, through Voice to Skull transmissions on me so that I am able to hear it, what to say, then the criminal female repeats exactly what this male said, through Voice to Skull transmissions on me. At night when I lay down for bed, they keep talking in my ears or head so that I am not able to fall asleep until I am exhausted. If I should turn when I do fall asleep, or there is any sign of me waking up, they start talking again in a group, in my ears, about Raymond Bailey. Then they talk about me to keep me awake and to keep my anxiety high; as of this date, because of the criminal gang’s Voice to Skull transmissions, I have had sleep deprivation for four weeks, no REM cycles. The criminal gang intentionally creates non-stop noise to keep me up all night. **Prior to his move, Raymond Edward Bailey would instruct them, late in the evening, what torture/harassment technique to use on me for that night. Almost every night Raymond Bailey would say, “Keep her up tonight.” Also, Raymond Bailey would tell the paid criminal female on the “graveyard” night shift, through Voice to Skull transmissions on me so that I was able to hear it, “When she turns on her side, follow her.”** What that meant was, as soon as I put my ear against the pillow when I turned on my side, the Voice to Skull transmissions were to start, **immediately, perpetrated by the criminal staff female on the shift.** I am getting only a few hours of sleep every night and this is not good for my health, plus the stress of the things the gang say that I have no way of escaping, because they talk directly into my ears or head. **I tell the gang not to talk to me at night and keep me from sleeping and they laugh.** I used to use a microphone that I had placed in the garage and ran to the television audio. I originally placed the microphone in the garage because the gang kept sending men around my townhouse at night and I wanted to hear who was outside my unit. Then, in 2005, the criminal gang started projecting their voices (a characteristic common to this type of surveillance,) what appeared to be, from that microphone; and, in that manner was the way Raymond Bailey would reveal his voice and instructions to his associated gang to me. Then in December of 2005, the criminal gang started projecting their voices almost entirely intracranially, Voice to Skull transmissions.

When I am driving my car, their Voice to Skull transmissions are non-stop. They are able to see every movement my body, hands and feet make. They say things like, “See how she puts her foot on the brake?”; “She put the air-conditioner on.” etc. It creates an extremely unsafe

environment for me, and they know it, and I have told them it is unsafe for me. Even if I play the radio, because they are able to talk directly into my ears and head, I am still able to hear them. Once again, no escaping their voices. **I feel like they are trying to kill me in my car, through their non-stop, constant distractions of me through their Voices to Skull. If I were to die because of a car crash, I would be gone, and there would be no way for law officials to know they were my killers. I do know they are not concerned, at all, if I get into an accident.**

Where are they getting the money to pay this 24/7/365 hired staff of criminals? This is, beyond a doubt, definitely their full-time job. I am beginning to wonder if the money they use to pay this 24/7/365 criminal staff monitoring/surveillancing me is coming through the criminal activity of not only pornography, but perhaps even identity theft and burglaries. **With this extreme and criminal surveillance method/technology, the possibilities of crime that this would enable these criminals to do are almost limitless. I can't think of one crime that they could not premeditate and carry out with precise timing. This surveillance method/device is lethal.**

4. Every time I go into the bathroom the harassment is severe. The very second I bend over the basin to put soap on my face; the paid criminal staff female says "Ray." When I go to brush my teeth, the paid staff female says "Ray." When I put my make-up on, the paid criminal staff female says "Ray." When I dry my hands, the paid criminal staff female says "Ray." Then I go to the toilet and sit down she says "Ray." I proceed with the elimination process and both the paid criminal staff female and paid staff male are relentless in saying things to intimidate me like, "We are going to follow her around tomorrow." meaning talking my ears or head. Or, they will just say, "Talk in her head." "When she goes out, we are going to follow her around." One male in the gang said, "She thinks we're kidding." "When she eats, we are going to follow her around." (These three sentences meaning, they are going to stalk me and talk in my ears or head.) "When she sleeps, we are going to talk in her ears and head." Then the very moment I wipe myself, both the paid staff male and paid criminal staff female say in my ears "Ray." The same process absolutely always happens every time I go to the toilet. When I go into the tub to wash for the morning, two paid male staffers and the paid criminal staff female keep saying "Ray" every single time I touch any personal part of my body, even if I am in the tub for 10 minutes, they will continue for that long detailing what body part I am washing. The same thing happens when I get out of the tub and start drying myself off. Every time I touch any personal part of my body, the paid criminal staff female and paid staff males are saying "Ray" in my ears or head. When I reach for my underwear, the paid staff female will immediately say Ray." (One of the males said, "Keep saying Ray, we will drive her nuts"; then he laughs.) Oftentimes, the males will say "Thank you Ray.", and then laugh.

When I go to the kitchen to eat or prepare a meal, they (quoting their expression) “follow” (stalk) me around in my ears and head. Every time I go to the refrigerator and open the door, the paid criminal staff female says “Ray.” Every time I go to the stove, the paid staff female says “Ray.”

The white paid criminal staff female, about 40 years old, 99% of the time, and the paid staff male with the deep, low voice, 1% of the time, stalk me, Voice to Skull transmissions every nano, in my own home, no matter what I am doing or how careful I need to be in the chore that I am doing around my house, not to hurt myself. These two paid, full-time criminal staffers do this to distract me.

Oftentimes the more dangerous my chore, i.e. going in or out of the bathtub, using a ladder, standing on a chair reaching for something, the more they try to distract me. If they are able to succeed in killing me in my own home, this will go away for them. If this premeditated attempt on my life doesn't stop, they will end up killing me, just by the mental and therefore physical abuse/stress it puts on my body 24/7/365.

Moving is not the answer. Raymond Bailey and his associated gang have exhibited the ability to have me electronically monitored/stalked no matter where I am at. One of the males in this gang has said, “She knows even if she moves, he (Raymond E. Bailey) will never take the monitor out; I guess we will have to take it off when she dies.” I am my own Personal Tracking Device/GPD for this gang. This is done through my eye sight. They are able to see everything I see in precise/great detail, and they are able to vocalize/communicate that detail back to me in one of two ways; sometimes through my ears and most oftentimes through my head, Voice to Skull transmissions. Many times, when I have been at a special event, like a parade or sight-seeing something special like Christmas light displays/decorations, the males will say, “Thank you, Ray” then they laugh.)

Many times, I have looked into my rear view mirror and seen one of my male neighbors in their vehicle behind me, no matter where I am at, or the time of day; or, they have passed me on the street, no matter where I was, or even passed me in various stores/businesses, no matter how far from my house. These include, Miguel Calderon, 434 Locksley Dr., Robert Nichols, 437 Locksley Dr., Kenneth Aehlert, 159 Locksley Dr., Ronald Boomer, 326 Locksley Dr., Alvin Raiz and Khareen Lantin, 322 Locksley Dr., Boguslaw Zapart, 441 Locksley Dr., Matt Lewis, 103 Locksley Dr., Lidia Prokop, 306 Locksley Dr., Young A. Kim, 135 Locksley Dr., Gerald Jacobsen 137 Locksley Dr. renters at 231 Locksley Dr., License Plate, G376180, and their female friend, License Plate 8568590, Rog Bogdan, 438 Locksley Dr., Ladisa, 359 Locksley Dr., License Plate 8022682, Kelly Teirney and Robert Uhrine at 403 Locksley Dr. and Rita Barr, 407 Locksley Dr. The paid white female of this criminal gang will also tell Terrance Curtis, 231 Locksley Dr. “She is home.”, and he will come home within one minute. In fact, the paid staff female of this criminal gang does this with many of the people who are stalking me, including Antoine G. Rhodes, 346 Locksley Dr., Karen Hartman, 375 Locksley Dr., Ryszard Cierpial, 302 Locksley Dr. and Vincent Ladisa, 359 Locksley Dr. This gang has even had some of the neighbors accused me of following them, instead of them stalking me. They actually send cars that I see driving in and through my neighborhood to meet me no matter where I am at. Sometimes they will have one of their people waiting in a lot where I have my car parked, on the cell phone. As soon as I get to my car, they either leave, or, some of the men will get verbal with me and try to fight. **The physical stalking is an everyday occurrence.** They know where I am every minute and where I am on my return trip home. License Plate 1270 AB has done this. In 2004, license plate

SV 6321 or SV 6371, kept following me around when I would go out shopping or to the post office, where I receive my mail, and he would actually try to talk to me. Kenneth Aehlert, 159 Locksley Dr., is stalking me, he has been behind me in the library, when I was using the computer, on his cell phone, and he covered his mouth to talk when I turned around and noticed him. A few minutes later he came into the computer room still on the cell phone to see what I was working on. Many times he has either been riding along side me, behind me, or conveniently passing me on the street. Robert Kiehn's girlfriend, from 412 Locksley Dr., conveniently passes me when I am either walking or riding my bike, then she sits and waits in the car until I pass her. **336 Locksley Dr., Karen L. Berrios, is very, very active in this criminal activity.** The criminal gang feeds her my times and she will either leave or come home exactly when I got up in the morning, took my bath, or either left my home or came home. Her now ex-husband, Joseph (Jose) A. Berrios got arrested right in front of their townhouse about six years ago. Karen Berrios exhibits her criminal involvement in front of her children. **In October, 2007, I was walking on the sidewalk, down the street, and she waited until she saw me to open her garage door then waited until I was in front of her townhouse unit to back her SUV out. Even though she saw me coming initially, and even though she could see me in her rear view mirror, she kept backing out of her driveway, never stopping for me, and missing me by about 1-1/2 feet. This is very dangerous for me.**

In their arrogance, Raymond and Alicia Bailey and their associates are so confident nothing will happen to them; they think they are smarter than everyone. **(I heard the paid staff male on the A.M. shift say, "She has spent a ton of money trying to figure the monitor out." Then he laughs.)** They know it is going to be hard for the authorities to catch them and they find joy in that. **I think they think they are getting away with the crime because they know few people, if any, can understand it or even want to. (The paid staff male has said, "They won't get us. They will never figure the monitor out.")** They know that I am seeking help and all they do is make it harder and harder on me, with their 24 hour criminal paid staff putting more pressure on me all the time. **I have to believe that Raymond and Alicia Bailey and his criminal gang are using this electronic surveillance on other individuals, most likely females.** I also think there is a good chance he is marketing this somehow. Since I know they are able to video tape, because they **keep saying they are "Videotaping for Ray"**, and when this all started in early, 2005, **I was coming out from taking a bath and drying off, the female said, "Wait until we show Ray."**; it seems possible they are selling it. There may even be a chance that this electronic surveillance is tied to the Internet somehow. I do know that individuals in my neighborhood are able to see and hear me. (Through what means, I am not sure.) I questioned the police why they couldn't interview the people listed below based on what their comments were, within an ear shot of me, (it was not my imagination) and they said because there was nothing illegal done.

Following are the neighbor's comments and addresses; it appears all were privy and are participating, at some level:

The male that lives at 219 Locksley Dr., Joshua Vanveld, "You should see her wash her ass;" and, he and his girlfriend, Nicole Slota were stalking me when I was grocery shopping, and they were both laughing. Joshua Vanveld works for Kerry Jon Ganofsky at High Voltage Software. The female that lived at 209 Locksley Dr., Sabrina Harwardt with Pauline Harwardt (both were active participants.) "She has a microphone on. If she doesn't move, he will leave it on the rest of her life." The male that lives at 211 Locksley Dr., John R. Hoppe, (He is a very active and willing participant.) "I don't know how she isn't ashamed to come out of her house. (*) He has a microphone on her and we can hear everything she says. They follow her around in her ears and we wonder how long it will be before she moves. I don't see what the big deal is, if she moves he will take the monitor off her." John Hoppe has either been behind me or passed me many times when I am driving. Prior to his appearance while I am driving, the paid female gang member will say, "She is on her way home." John Hoppe's grandson has said, "Is that when she pees Grandpa?" And, John Hoppe talking to 233 Locksley Dr., Regina LeClerc, when I was sitting outside, "We are going to be in big trouble." Then they start laughing. Regina and Rene LeClerc, 233 Locksley Dr., stalked me in Target department store and both were waiting for me, leaning against the wall, when I came out from the Women's Restroom.

Karen Hartman and her daughter, License Plate J870385, 375 Locksley Dr., have been in two model homes I was viewing, at the same time of the day, on two different days; and, she has had one of her male visitors, license plate 65031H, waiting for me in his pick up to return home. The female that lives at 207 Locksley Dr., Brad Fish's house, License Plate Number K142717, has stalked me. 225 Locksley Dr., Gregory Bass, said to his male friend, "She has a monitor on her." His friend said "Who put it on?" Gregory Bass said "Ray." Gregory Bass, being in contact with these criminals, meets me at the post office, when I go to mail, or else he conveniently passes me on the street going in the opposite direction when I am out. The female that lives at 434 Locksley Dr., Melissa (Stepanek) Calderon, while sitting with four men from the neighborhood on her driveway, one of them being a Director on my Homeowner's Association Board, gives me "cat" calls and said "Thank you Ray," and one other time, "She has a monitor on her." 346 Locksley Dr., Antoine G. Rhodes, says "Thank you, Jesus," and then he put his hands together and looks up to the sky. And, every time he sees me outside, he will beep or wave, then he laughs. The male that lived at 419 Locksley Dr., while I was lying on the floor, inside my townhouse, in June or July, 2005, "Even Michelle's ((Polgar) Dorn) ribs don't show when she lies down." The female that lived at 419 Locksley Dr. (who now lives at 14 Little Creek Court in Streamwood,) Mrs. Michelle (Polgar) Dorn, the female that lives at 355 Locksley Dr., Mrs. Nancy Barber, the couple that lives at 233 Locksley Dr., Rene and Regina (Sachs) LeClerc, and 237 Locksley Dr., Todd Hogan, have all said, at different times, "Ray Bailey put a monitor on her." Todd Hogan is Treasurer of my Home-owners' Association Board. A young male boy, about 24 years old, Scott Lafriske, that lived at 408 Locksley Dr. until fall of 2006, "You should see her take a bath." A group of young boys one evening at 407 Locksley Dr., "Hey baby," then they start whistling at me. 237 Locksley Dr., Todd Hogan, when his male friends go to his house, they always beep their car horns in front of my house, and if I am outside at the time too, they laugh. The man that lives at 406 Locksley Dr., Michael Shaw, is always laughing when he goes past me. Matt Lewis, 103 Locksley Dr. and Kenneth Aehlert, 159 Locksley Dr. said one night behind me, while I was at a board meeting, "She thinks she has a microphone in her purse." At another board meeting, **MATT LEWIS, 103 LOCKSLEY DR. SAID** to the woman that lived at 408 Locksley Dr. until fall of 2006, Donna (Lafriske) Oldham, **WHEN I WAS SITTING BEHIND THEM, "AT LEAST THEY ARE NOT TALKING IN YOUR HEAD."** Matt Lewis has frequently passed me in the opposite direction, while I was driving from one location to another, during the day. The criminal gang tells him where I am at, and he meets me. 423 Locksley Dr., Rebecca Davenport and her two adult sons had an "O'Brien" service man over and as I was walking past her unit, one of the males said "Ray put a monitor on her." Then the service man said, "Why doesn't he take it off?", and one of the sons said, "He can't get in." 425 Locksley Dr., Andrzej Petrykowski, has said, "She can't even touch herself." Andrej Petrykowski is 35 years old has lived next to the Bailey's since the Bailey's moved in. 231 Locksley Dr., Terrance Curtis, laughing, "She can't even pee. Ray put a monitor on her." **In June of 2006, he pulled along side of me, while I was driving, and asked me why I wrote his license plate down. When I wrote his license plate down, he had already turned in the opposite direction of me, and when he turned, he was in front of me. How could he possibly know that I wrote anything down, much less that it was his license plate.** 231 Locksley Dr. has rented a lot of furniture from Rent-A-Center (RAC) and that company keeps calling me asking for some other female; they are giving out my telephone number. 353 Locksley Dr., Peter Miller, 438 Locksley Dr., Matt Snyder and Rog Bogdan and their relative License Plate C566549, 235 Locksley Dr., Gary Hohbein, 203 Locksley Dr., Michael Woznicki, 338 Locksley Dr., Ferdinand Dejesus, 221 Locksley Dr., David Kwasniewski, 421 Locksley Dr., Jennifer Hancher, 211 Locksley Dr., Ryan Oldham and Robert Wilson, 407 Locksley Dr., Rita Barr, 373 Locksley Dr., Jan Idzik and 357 Locksley Dr., Diane Pavey leave for work every day exactly two hours to the minute after I get out of bed every morning, no matter what minute of the hour, and frequently will come home 12 hours to the exact time that I got up in the morning, or they pass me on the street when I am coming home or leave when I am leaving. **David Kwasniewski and Rene Leclerc meet me at the same locations no matter what time I come home or leave. These individuals are heavily involved in this crime.** In fact, many of the neighbors who are active and willing participants do this. 217 Locksley Dr., Bhaskara Gara, 401 Locksley Dr., Phyllis and William Lamack, Owner of ERA Countrywood Realty, South Barrington, IL (who also stalk me), 205 Locksley Dr., Mrs. Gaugamela, 423 Locksley Dr., Rebecca and Shaugn Davenport, 425 Locksley Dr., Andrej Petrykowski and his girlfriend, 371 Locksley Dr., Michael Kubinski, 233 Locksley Dr., Regina and Rene LeClerc, 344

Locksley Dr., Maciej Sokolowski, 412 Locksley Dr., Robert Kiehn and his girlfriend, 235 Locksley Dr., Gary Hohbein, 237 Locksley Dr., Todd Hogan, 367 Locksley Dr., Mrs. Disilvestro, 361 Locksley Dr., Katherine Gruber, 354 Locksley Dr., Irene Ting, 209 Locksley Dr., Mark Padula, 359 Locksley Dr., Vincent Ladisa, 304 Locksley Dr., Marzena Fedorov, 369 Locksley Dr., Jebadiah Ralston and Alicia Neiryndk and 219 Locksley Dr., Joshua Vanveld, his girlfriend Nicole Slota and Joyce Nelson all leave one hour after I have a bowel movement in the morning, and come home the exact hour in the P.M. that I went to the washroom in the A.M. Then, oftentimes, they will do the same thing the following day. The Vanveld's friend, License Plate X198008, will leave or come home 12 hours after I left in the morning. I have heard Pete Miller, 353 Locksley Dr., discuss "the monitor" when I was outside walking. Christopher Vecchio, 201 Locksley Dr., frequently goes outside as soon as go outside, most of the time on the cell phone. 367 Locksley Dr., Michael Disilvestro and 436 Locksley Dr., Samuel Chung frequently, precisely, drives past me just after I pull my car into my driveway, be it morning or afternoon. This is a fact; I installed security cameras with a date/time stamp on the recordings. The daughter of Rose Nelson, 308 Locksley Dr., has done this too, as has Shaugn Davenport, 423 Locksley Dr. 9/19/2006, P.M., Verizon Cellular Number 630/204-6763, left a message on my answering machine, "Hey baby, hey baby, are you there, I know you are, then a male laughs. 115 Canton Lane, Streamwood, William H. Allivato, has given out my unlisted/unpublished telephone number. His Doctor's office called mid-November, 2006, to confirm an appointment, when I went to Lowe's Home Center in November, 2006, to set up a delivery for a kitchen appliance, the Sales Associate typed in my home phone number and William H. Allivato popped up. His DVD Club, Columbia, and his Base Ball Digest subscription renewal called in March, 2007, his Pontiac car dealer called in July, 2007 to talk to his wife, Cynthia, about a car she purchased not even one year prior, in September, 2007, Verizon Wireless called to talk about William's account, and Dr. Kahn's office, 847-952-7181, calls every couple of months and leaves a message to confirm appointments for Cynthia. I'm not receiving any of his mail or any mail from the businesses I listed above, so his bills, statements, applications, renewals, etc. are going to his home address at 115 Canton Lane, Streamwood, IL. This gang is already starting to fraudulently use my personal information.

Raymond E. Bailey, prior to his move, used to be the President of my Home Owners Association, Sherwood Forest. He may have gotten some of my personal information on me like social security number, birth date, etc. from the management company's records. Bhaskara Gara, 217 Locksley Dr., was a Director, 441 Locksley Dr., Fred Biederstadt was the Treasurer of my Home Owners Association and he was always laughing when he saw me. Fred Biederstadt moved into his townhouse in 1996, and he was driving with Wisconsin State license plates for years. Fred Biederstadt works at AT&T. Robert Michelson, who lives at 410 Locksley Dr., was a Director in 2004 and 2005, and prior to that, he was President. All of these men are very close to each other. Before I became aware of the monitor that Raymond Bailey put on me, the above board members sent me two letters within one year stating I was "mooning" and doing "indecent gestures" in my own home at the front window. (This, from an individual who has on the back window of his SUV, a decal, "Raft bare ass, it adds color to the greenery.") I was stunned to receive these letters, as I don't even wear shorts in the summer. I immediately took the letters to the Police.

Because he was the President of my Homeowners Association, he is able to create and even manipulate events and circumstances to his advantage and my detriment. I tried, in 2005, when I started hearing graphic comments in my own townhouse about what I was doing, to write my Property Manager from the association management company and the "board" told the association attorney to write me a Cease and Desist letter to stop writing the association and to contact the police. He has, on several occasions, tried to use intimidation tactics with me; as examples, Deanne Olson, 55 Cambridge, walked past me and stopped and said to me "Stop following me in your car. If you don't, I will go to the Police." Vincent Barber, 355 Locksley Dr., called the Police on me for "being on his property." I had never been on his property. One time when I was down by the cul-de-sac where he lives, he said "Stop harassing my wife. If you come down this way again, I will take it as a threat (he is 6'3" and 40 years old and I am 5'1" 60 years old,) and call the Police." One day he saw I had a piece of paper in my hand that had his wife's license plate and work addresses on it. He told me that was proof that I was following his wife and he would call the Police, stop me from driving down the

street (not sure what he meant by this,) and get an injunction against me. I have never followed his wife and had no intention. The paper I had in my hand, I had taken off his wife's own "Alicia's Room" Internet site; 1 year after I knew he was stalking me and talking Voice to Skull transmissions on me every night and telling the paid criminal gang what murder attempt they should use on me during the night. Also, once again, how did he know what I had in my hand? Because the 24/7/365 paid criminal staff told him. Raymond Edward Bailey is associated and participates in a criminal gang and has for years had a 24/7/365 deadly criminal technology stalk on me with Voice to Skull transmissions.

I have a strong feeling that most, if not all, of the people listed above are able to see me on their computer screens, as time permits for them, during the day and night, on a 24 hour basis. However this device is set up, Raymond Bailey and his associated gang's equipment captures my 24 hour activities and he is able to send that reception out to others. Maybe it is an Internet site, maybe it is P2P, maybe he is selling it to a porn Internet site or maybe he sells porn videos. **(One night in the spring of 2005, after I finished taking a bath at around 9:30 P.M., the paid staff criminal female asked one of her gang members, while she was doing Voice to Skull transmissions on me so that I would be sure to hear it, "Is it too late to get it on the Bulletin Board?")** This definitely is a Porn Ring, at the very least, in which Raymond E. and Alicia A. Bailey are heavily involved. **Many people in my neighborhood know about my body, and all the private and personal things I am doing in my house. About mid-November, 2005, I heard Raymond Bailey say "I have a contract on her.", when he was talking about me to his gang.** I don't know what this "Contract" is for, but it doesn't sound good for me. **I know it is extremely dangerous having Raymond and Alicia Bailey, their gang, and their leader/owner, which I feel Kerry Jon Ganofsky is tied to this operation, in some way, on the streets; not only because what he is doing to me, but also all of the other women he must have this (electronic, electro-field, laser and/or satellite type) surveillance system on who aren't even aware of it. It is extremely dangerous for this gang to be able to hunt, stalk and Remote View anyone they choose, plus know every detail of their life.**

Sometimes, I feel like my life has already been taken from me. I have absolutely no freedom, every single aspect of my life is revealed, at all times, to them. I do not have one private moment, ever, within a 24 hour period, 365 days per year. **I am not safe, anywhere, not even in my own home.** **The paid staff criminal female verbally intracranially, Voice to Skull transmissions stalks me everywhere I go in my own home and every movement I make. I have no privacy of my own body, or even of one minute during the day; the high-tech surveillance monitor that Raymond E. and Alicia A. Bailey and their gang have on me is so precise, able to detail every function of my body, every second.**

They are able to see everything I see, hear everything I hear, all my telephone and person-to-person conversations and activities, and read everything I read, all the mail that comes to me, all my bank statements, all my checking statements, when I write out a check (even when I write out my checks, or go through my checkbook to make entries, the paid staff female will say "Ray" for each entry) and make deposits, and my yearly Federal and State Income Tax filings, every account number I have, like my credit cards, and they even know my code number to my Brinks home Security

Alarm System, along with knowing my Social Security Number. The paid staff female on the morning shift said one day when I was going to my Safety Deposit Box, “I know her signature.”

They know every time I make an appointment with a doctor or dentist, and everything that is discussed. **In addition to talking in my ears and head, (they have the ability to control the volume, which ear they talk into, and also which direction the sound is coming from) and intracranially/in my head, without any way for me to escape, at any time.** Anytime I attempt a project, in my house or at the library, they constantly talk in my ears or head in an attempt to keep me from doing absolutely anything constructive. **Every time I do something, even the smallest of things or a task, it becomes a struggle because of their constant harassment in my head.** I need to go back to work, but I can't do that with Raymond Bailey and his associates knowing my every minute plus distracting me with their talking in my ears or head all the time. **They will not let me rest, watch television or listen to music without Raymond Bailey and his associates either talking in my ears or head.** Most of the time, they think it is funny and laugh. **The gang keeps saying “Do you believe she knows all this stuff and can't get help from the police.”** **They are stalking me not only outside, but when I am in my own house.** I do not even have the freedom to go to the toilet without this gang detailing to me, in my ears or head, what I am doing and then either the female or **male saying “Ray” in my ears or head every minute, no matter if I am at home or out some place during the day.** **This gang is constantly keeping the anxiety level up with threats of what they will be doing either that day or night to me, or the following day.** They also keep telling me, because they can see I am writing for help, **“We are not going to let anything happen to Ray.”**

I am not schizophrenic or paranoid. I have never been to a doctor for mental health problems and there is no history of mental illness in my family. I come from a two parent, loving family. I have hardly ever taken any medication in my life, and I only have a few alcoholic drinks per year. A few individuals I have made contact with felt since I was hearing voices, I should have it checked out through the medical profession. **I know my situation is not medical, but some type of new or yet to be detected, public knowledge of, technology.**

I have been trying for five (5) years to have someone figure out what type of sophisticated surveillance/set-up Raymond E. and Alicia A. Bailey and their associated criminal gang have on me that allows them access to my body to accomplish all the different types of surveillance/stalking 24/7/365 they are able to accomplish. **I need to have Raymond E. and Alicia A. Bailey, the criminal gang and all parties participating and responsible arrested and prosecuted. My local police department is Streamwood, Illinois. I have been working with Commander Michael Zeigler. His telephone number is (630) 736-3718. I have written letters to F.B.I. Special Agent-in-Charge, Robert D. Grant, in the Chicago office, telephone number (312) 829-1199.**

If this constant torture, all day and night long isn't stopped, my health and life will be in jeopardy, and they may even end up killing me through this constant, deliberate torture and the level of cruelty. They don't want me to smile or laugh, they don't want me to watch television or listen to music or to talk to and be with my friends. **They don't want me to have one minute of pleasure; the gang will start talking in my head, or start saying "Ray."** When I do go out and try to enjoy an event, some of the male voices will say, as I am looking at the event, "Thank you Ray." **Not only are they able to find out absolutely everything about an individual, have a 24 hour paid staff to document the information and use it as they see fit for the purposes of their crime, they are able to kill the victim, silently, without ever being suspected. Every time I reach for something or make any type of body movement or put anything to my mouth to take a drink, every time I bring food up to my mouth to eat and even frequently even the precise moment I swallow, the paid staff female will say "Ray" in my ear or head, and, most of the time, she says it jokingly. This even happens when I am driving, when I make any type of movement with my hands.** Every time I am on the telephone, or have a face-to-face conversation, they talk in my ear to try to distract me. **If Raymond E. and Alicia A. Bailey, and their affiliated criminal gang aren't caught and arrested, they will continue to stalk me and everyone else they have this hard to define, unbelievable 24/7/365 surveillance on the rest of their life; and, they will continue to add victims that fit their criteria, as I am sure I was one that was added, not an original one and only. Alicia Bailey actually has the audacity to laugh when she sees me. There has to be a lot of money involved with and coming from their criminal activities to be able to support a 24 hour paid staff.** Raymond E. and Alicia A. Bailey and their gang are perverts, this goes way beyond pornography. **They are sexual predators.** My entire life is being violated and intruded. **This is premeditated attempted murder; murder for hire. They are in the process of killing me and will kill me if they aren't stopped and arrested;** and, then, if they do, they just might be able to get away with murder. **This is a deadly weapon.** Can we, as a free society, let this criminal gang get away with this. They have no conscience; they are ruthless, savage and act like wild animals. What these criminals do on a nano basis, 24/7/365, is insane. I can only imagine what they do to other people they are stalking with the same type of equipment or through whatever method they are using. It is difficult to conceive how these human beings could have such a brutal disregard for life.

Respectfully,

Dorothy Szczepkowski

(*) I feel this could be Eric Nofsinger's abilities and capabilities since he oversees the "sound guys" in his capacity as Vice President of Creative Content and also has full responsibility for the recording and editing.

Attachment: Picture – Raymond Bailey

Los Angeles Billboard: Began displaying on Monday, January 24, 2011, in 10 locations around Los Angeles.



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October 30, 2008 - Picture from the Internet.