Public Written Comments Submitted to PCAST

from September 2, 2011-October 20, 2011

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From: "Ze'ev Wurman" <zeev@ieee.org>
Subject: PCAST public comment: NRC Science Framework
Date: Sun, September 4, 2011 8:52 pm
To: pcast@ostp.gov

Dear PCAST Members,

Recently the National Research Council published its new Science Framework. As an engineer and a business person in the Silicon Valley I eagerly opened it and that, in turn, forced me to pen the attached blog post on my company's web site.

I submit it here for your consideration. I believe it is important for you to address that matter.

Sincerely,

Ze'ev Wurman
Chief Software Architect
Monolithic 3D Inc.
San Jose, Calif.
zeev@monolithic3d.com

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Education to Raise Technology Consumers instead of Technology Creators

08/04/2011 14 Comments

We have a guest contribution today from Ze'ev Wurman, the Chief Software Architect of MonolithIC 3D Inc. In this blog-post, Ze'ev discusses some industry implications of recent events relating to science education. Ze'ev has participated in developing California's education standards and assessments in mathematics since the mid-1990s. Between 2007 and 2009, he served as a senior policy adviser at the U.S. Department of Education. Throughout their development Wurman analyzed the Common Core mathematics standards drafts for the Pioneer Institute. In the summer of 2010 he served on the California Academic Content Standards Commission that reviewed the adoption of Common Core for California. Wurman earned his BSEE and MSEE degrees from the Technion in Israel, and he is a recipient of the Eliyahu Golomb Israel Security Award.

MonolithIC 3D is not unlike many other Silicon Valley startups. Around the table you find engineers from India, East Asia, Israel, and Europe. All received their primary education overseas, and a few their college education in the United States. But it is only few and far between that we find an engineer who was raised and educated here. This has been my experience for more than 25 years, and over that time the fraction of young, American-educated engineers continued to dwindle. I was reminded of this state of affairs reading Tuesday's Wall Street Journal about several initiatives, launched by the U.S. Citizenship and Immigration Services, designed to attract and retain foreign entrepreneurs, particularly those in the high-tech sector who wish to launch start-up companies in the United States.

One could well ask why in the midst of a recession ("recovery" in some circles) the U.S. would try to attract more foreign, highly educated scientists and engineers to our shores. Yet we, who live in the Silicon Valley, know the answer: fewer and fewer American students are interested, or able, to enter demanding science and engineering programs. In 2006 the fraction of foreign undergraduate students in engineering reached 45%, in computer science 44%, and in physical sciences 40%. In 2007, the fraction of foreign students receiving doctorates in science and engineering was even larger: 62% in engineering overall, 73% in electrical engineering, and 57% in computer science. (NSF S&E Indicators, 2010)

Consequently, I was excited when the National Research Council recently published its new Framework for K-12 Science Education, in which it outlines its vision for improving teaching science in America in the 21st century. The framework has prestigious authors in science and science education and they promise us a

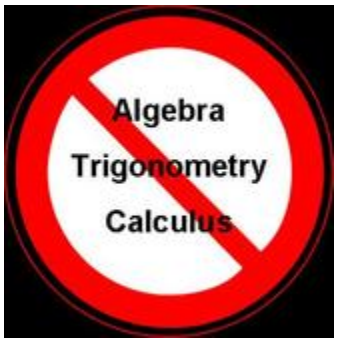
> *coherent and consistent approach throughout grades K-12 [that] is key to realizing the vision for science and engineering education embodied in the framework: [where] students, over multiple years of school, actively engage in science and engineering practices and apply crosscutting concepts to deepen their understanding of each fields' disciplinary core ideas.*[p. ES-2]

The National Academies, this framework's publisher, stresses promoting American competitiveness as an important goal:

> *Science, engineering, and technology permeate nearly every facet of modern life and hold the key to meeting many of humanity's most pressing challenges, both present and future. To address the critical issues of U.S. competitiveness and to better prepare the workforce,* Framework for K-12 Science Education *proposes a new approach to K-12 science education that will capture students' interest and provide them with the necessary foundational knowledge in the field.*

This certainly looks promising, particularly because the framework for the first time introduces engineering as a subject of study for our K-12 students. Yet as I kept reading the document's 280 pages of lofty prose, I noticed something odd: **The framework does not expect students to use *any* kind of analytical mathematics while studying science.**

For example, the framework promotes a practice called Using Mathematics, Information and Computer Technology, and Computational Thinking (p. 3-13). Yet one observes that after singing paeans to the importance of mathematics, it only expects students by grade 12 to be competent in *"recognizing," "expressing*," and "*using simple … mathematical expressions … to see if they make sense,*" but not in actually solving science problems using mathematics. Its other suggestions include the use of computer programs and simulations, ability to analyze data using computer tools and spreadsheets, modeling, and describing systems using charts and graphs. But there is nothing about actually being able to model a system by its equations, or solve it using mathematical techniques. The framework also includes as one of its Cross Cutting Concepts something it calls Systems and System Models (p. 4-7), but there, yet again, it does not expect students to use mathematics for that modeling. Its models *"can range in complexity from lists and simple sketches to detailed computer simulations or functioning prototypes*," but mathematics is left behind.



One searches in vain for words like "algebra" in the text. Instead one finds only one(!) instance of something called algebraic symbolism, which allows taking "*relationships [that] are expressed using equalities first in words*" and changing them into "*algebraic symbols—for example, shifting from distance traveled = velocity multiplied by time elapsed to s = vt*." **Incidentally, this is the single equation in the whole 280 pages of the science framework**. One should not even bother to search for mentions of calculus or trigonometry. Only statistics and computer applications seem to have a place in this strange document.

All of this made me think. Before Lavoisier's quantitative approach there was no chemistry, only Alchemy. Before Newton's invention of calculus, physics was more a craft than a science. Mathematics has been inseparable from science for the last 300 years, and has been largely responsible for the world we live in. Yet here we have a "21st century" science framework for our students that effectively ignores mathematics.

I went back and re-read the document to make sure I didn't miss anything. And, indeed, I did not. Turns out it was staring at me right there on the first page:

> *The **overarching goal** of our framework for K-12 science education is to ensure that by the end of 12th grade, all students **have some appreciation of the beauty** and wonder of science; possess sufficient knowledge of science and engineering to **engage in public discussions** on related issues; **are careful consumers of scientific and technological information** related to their everyday lives; **are able to continue to learn about science outside school**; and have the skills to enter careers of their choice, including (but not limited to) careers in science, engineering, and technology. [p. ES-1, emphasis added]*

Suddenly it all became clear. This framework does not expect our students to be able to do any science, or to be able to solve any science problem. This framework simply teaches our students science appreciation, rather than science. It expects our students to become good consumers of science and technology, rather than prepare them to be the discoverers of science and creators of technology.

Now I finally understood the wisdom of our government in easing the immigration of skilled professionals even in the midst of the largest unemployment in almost a century. When even our congressionally-chartered National Academies, and their most prestigious National Research Council, have lost their belief that American students can compete with their foreign peers, what else can a lowly government department do?

Or, perhaps, someone ought to shake those prestigious scientists and science educators and bring them to their senses?

From: "Jerome Dancis" <jnd@math.umd.edu>
Subject: Comment to PCAST
Date: Tue, September 6, 2011 4:59 pm
To: pcast@ostp.gov

PCAST

My report, “Be Wary of H.S. Statistics” is attached. It will be part of my public comments to PCAST at its Sept. 2011 meeting.

Sincerely,
Jerome Dancis, Ph.D. (math)
Associate Professor Emeritus
Department of Mathematics,
University of Maryland, College Park, MD 20742-4015
Math Education Website: www.math.umd.edu\~jnd

Attachments:

Be Wary of H.S. Statistics.pdf	
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Type:	application/pdf

Arithmetic and Algebra Avoidance in Science and Statistics

Public presentation **by Jerome Dancis** (September 16, 2011)
to **President [Obama's] Council of Advisors on Science and Technology (PCAST)**

At your July meeting, I alerted you to the radical deemphasis of Arithmetic and Algebra in math textbooks and in math programs funded by the U.S. Government.[i] This probably contributed to the *drop* in fall enrollments in Multivariable Calculus from 120,000 in 1980 to 101,000 in 2005. [ii] Multivariable Calculus is required for engineering.

Unfortunately, this minimization of Arithmetic and Algebra is seconded by the National Research Council (NRC) in its Framework for K-12 Science Education [iii]
In his review, "Education to Raise Technology Consumers instead of Technology Creators" [iv] of this NRC Framework for K-12 Science Education, Ze'ev Wurman wrote:
"For example, the [NRC] framework promotes a practice called Using Mathematics, Information and Computer Technology, and Computational Thinking (p. 3-13). Yet one observes that after singing paeans to the importance of mathematics, it only expects students by grade 12 to be competent in "*recognizing*," "*expressing*," and "*using simple … mathematical expressions … to see if they make sense*," but not in actually solving science problems using mathematics. ... . But there is nothing about actually being able to model a system by its equations, or solve it using mathematical techniques."

That is, the NCR K-12 science framework avoids Arithmetic and Algebraic calculations. It is Math-free or close to it. Having an Arithmetic and Algebraic calculations-free science curriculum would make science classes much *easier* for students as well as for those teachers, who are *not* comfortable with Arithmetic, Arithmetic word problems and Algebraic calculations. But, it is counterproductive for future STEM majors.

In place of the traditional high school physics courses, the NCR K-12 science framework essentially suggests a course on energy and waves. [v]

The physical concept, Work = Force x Distance, is the *basis* for energy and power. It would be really useful for students to study this in middle school. But, work is *not* mentioned in the NRC's section on energy, not even for Grade 12. Without the physical concept of work, the concept of energy is somewhat mystical.

(The formula for kinetic energy [$(1/2)\,mv^2$], is *not* stated; instead NRC writes: "... [kinetic energy] is proportional to the mass of the moving object and grows with the square of its speed".)

Arithmetic-based science should be an important part of Grades K-8, both to expand and enhance the science and to provide practice in Arithmetic, measurement and Arithmetic word problems and their interplay with science. (Also, this would promote "number sense"). But, Arithmetic-based science is *not* part of the NRC science framework. This places unnecessary and undesirable limits on Grades K-8 science instruction.

Important, that middle school science courses include “two operation” word problems. For example, Here is a “two operation” science problem which many students miss when they take the Math SAT:

Problem 1. (on Speed) "How many minutes are required for a car to go 10 miles at a constant speed of 60 miles per hour?"
(Solution. {60 miles per hour} is {a mile a minute}, so ten minutes needed to go 10 miles.)

Why is it so “difficult”? Middle school students know that
{Distance} equals {speed} x {time} and how to convert from hours to minutes.
But doing *both* in a single problem largely falls through the cracks of the K-12 Math curriculum. Of course, there are many middle school students, who can do this problem; but there are also many Grade 12 students, who *cannot*. This is why it is a medium level (*not* an easy) SAT Math problem, one that the SAT rated as Level #3 on its scale of 1 to 5. [vi]

This problem should be part of middle school science. But, it is *excluded* from the NRC K-12 science framework.

Physics consists of physical concepts and mathematics and (most important) the interplay of the two. High school physics courses would *no* longer provide students with practice solving Algebraic equations. Taking the largely Algebra-free NRC Framework’s physic course would *not* suffice; it would set up students to be at-risk in many stem majors in college.

The implementation of this NRC Math-free science education may result in an increase in STEM majors among college *freshmen*. But, these entering college students would expect science and engineering to be an Algebra-free zone like their K-12 science courses. The result would be a *decrease* in college STEM *sophomores*.

Recommendation 1. The NSF and Dept. of Education should be supporting Arithmetic and Algebra based science courses. PCAST should call for NRC’s science framework to be rewritten to make much use of Arithmetic and Algebraic calculations.

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“Be Wary of High School Statistics”

is the name of my September, 2011 communication to PCAST. To take Pre-Calculus *or* to take AP Statistics in Grade 12? -- that is the question for many an eleventh grader, in an Algebra II class. Learning Pre-Calculus will make her fully ready for all college majors, including Statistics and all STEM majors. Pre-Calculus is an Algebra intensive course; it raises student fluency in Algebra. In contrast, AP Statistics uses few Algebraic calculations. Choosing AP Statistics would likely put him *at-risk* for college majors in statistics, engineering and other STEM majors. This is discussed in my September, 2011 communication to PCAST. [vii]

Soft data:

Among freshmen at Michigan State University from several High Schools in Michigan: Half of those whose Grade 12 math course, was (just) statistics, were placed in remedial math. Twelfth graders who studied both statistics and Algebra fared better. [viii]

The associate dean of the College of Computer, Mathematical, and Natural Sciences, University of Maryland College Park, noted that:
Students need high fluency in algebra I/II level type work.
[To be directly] admitted to the BIOLOGY, CHEMISTRY, and BIO-CHEMISTRY majors [freshmen] MUST have at least pre-calculus level math by their senior year ... -- independent of SAT score (high or low). ... While we look at other things (science courses, success in science courses, strength of schedule, etc), the math criterion to me is the most important one. [ix]

Recommendation 2. The NSF and Dept. of Education should be wary of funding high school Statistics courses, lest they reduce the number of successful STEM majors in college.

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After thoughts:

In addition to Problem 1 on speed, middle school science, students should be able to do Problem 2 (Average Speed) below.

Problem 2. (**Average Speed**) We flew from Denver to Boston at an average speed of 500 MPH; we returned from Boston to Denver at an average speed of 400 MPH. (The distance from Denver to Boston is 2000 miles.) What was our average speed for this round-trip? WRONG answer. 450 MPH [x]

Twelfth graders should be able to do Problem 2, above (using Algebra I) *without* knowing the distance from Denver to Boston! Those, who cannot do it, will be at-risk in a rigorous college physics class.

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Footnotes

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[i] My public presentation, "U.S. Government Should Stop Financing Arithmetic Avoidance", on July 15, 2011 to PCAST. It may be accessed at:
www.tvworldwide.com/events/pcast/110715/default.cfm?id=13754&type=flv&test=0&live=0
The longer written statement is at:
http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast-july2011-pub-comm.pdf

[ii] See: slide 15 of "Issues of the Transition to College Mathematics" of the MAA Retiring Presidential Address at
https://www.macalester.edu/~bressoud/talks/2011/JMM-transition4pdf.pdf

The MAA is the Mathematical Association of America, the professional association, for college math instruction, of college and community college professors of mathematics.

[iii] http://www7.nationalacademies.org/bose/Standards_Framework_Homepage.html and http://www.nap.edu/catalog.php?record_id=13165

[iv] http://www.monolithic3d.com/2/post/2011/08/education-to-raise-technology-consumers-instead-of-technology-creators.html

[v] In physical science Chapter 5: Core Idea PS 3: Energy and Core Idea PS 4: Waves and their applications in technologies for information transfer.

[vi] The book, "10 Real SATs " copyright 2000

[vii] "Be Wary of H.S. Statistics" at http://www-users.math.umd.edu/~jnd/Statistics.vs.Algebra.html

[viii] "On The Transition in Mathematics from High School to Michigan State University" by Richard O. Hill at www.math.msu.edu/~hill/Transition.pdf

[ix] He also noted: " ... when we looked at the relationship between students who earned Ds/Fs/Ws in intro BIOLOGY and CHEMISTRY courses in a large scale internal study ... . Those who did poorly in these courses were clearly those who were in COLLEGE ALGEBRA WITH APPLICATIONS (MATH 113). By bringing substantial data to bear on the question, we were able to get the campus to change the prerequisites on BIOLOGY 105, 106 and CHEMISTRY 131 to ... (essentially, completion of COLLEGE ALGEBRA WITH APPLICATIONS (MATH 113)); and the D/F rate in these courses was cut in half. There were some confounding variables which do not make this a perfectly pure study, but the impact is obvious. "

[x] This is Problem 7 in "Reading Instruction for Arithmetic Word Problems: If Johnny can't read well and follow directions, then he can't do math", which contains a solution. It is at www.math.umd.edu/~jnd/subhome/Reading_Instruction.htm

Be Wary of H.S. Statistics

By **Jerome Dancis**, Associate Professor Emeritus, Math Dept., Univ. of MD
Math Education Website: www.math.umd.edu\~jnd

Reading and Arithmetic-level data analysis (Statistics) is very important for all. This means knowledge and understanding of averages, medians, percentiles, box and whisker diagrams; also being able to read and draw a variety of graphs, charts and tables[1] as well as proficiency with percents and decimals and the *big* bugaboo, word problems. This is more important than Algebra. The rush to Algebra, should be replaced by the careful development of student proficiency in reading Arithmetic word problems and Arithmetic-level data analysis.

Unfortunately many high school and some college graduates are *not* well versed in Arithmetic data analysis. As a U.S. Dept. of Education study[2] noted: "… far fewer [Americans] are leaving higher education with the skills needed to comprehend routine data, such as reading a table about the relationship between blood pressure and physical activity, … 'What's disturbing is that the assessment is ... [designed] to test your ability to read labels,' [Mark S. Schneider, commissioner of education statistics] added." [3]

A prerequisite for understanding random variables in Statistics, is understanding (the far simpler) variables (the x's) in Algebra. Proficiency in translating word problems into Algebraic formulas is the basis for writing formulas for spreadsheets.

Colleges' attitude to freshmen, with **zero** K-12 Statistics, is: *No Statistics; no problem*. Colleges are reasonably successful at teaching Statistics – at *least* to those students, who are fluent in Arithmetic and Algebra. Many are *not* [4].

The choice, of which statistical method to use usually depends on context, context, context, that is, *on how the information will be used*. For example, on my campus,

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[1] Professor of Biological Sciences, at Towson State University, MD, Virginia Anderson, Ed.D., reported needing to provide extensive training to her college biology students in the reading and drawing of tables, graphs and charts.

[2] Conducted by the National Center for Education Statistics.

[3] "Literacy of College Graduates Is on Decline Survey's Finding of a Drop in Reading Proficiency Is Inexplicable, Experts Say", Washington Post, December 25, 2005; A12

[4] From a Univ. of MD, College Park [UMCP] instructor: ... [on] a recent quiz I gave in STAT 100 [our college version of AP Stat] ... . Most all [students] obtained the [correct] equation y = .52 + .7x, but many (over half of my class) missed points because they did not correctly graph the line. ... the line they drew ... was not y = .52 + .7x, but some arbitrary line. ..., a [student] commented, "Well, I graphed it on my calculator, shouldn't I get credit for that?" When I mentioned that I needed the scale, y-intercept, slope, etc. correctly graphed ... , the reply was, ".... the calculator doesn't show the scale so I don't know how to do that."

Another question on the quiz ... given that the equation ... y = -36.9 + 5.07x, [find y when x = 20]. I had more than one student who forgot his/her calculator say they couldn't do this problem because they didn't have a calculator (i.e. couldn't do decimal multiplication and addition).

FYI ... the text assumes students know [how to graph a line] before taking STAT 100..

psychology majors are required to take PSYC 200, "Statistical Methods in Psychology", which builds on PSYC 100, "Introduction to Psychology". Business majors are required to take BMGT 230, "Business Statistics". Sociology majors take SOCY 201, "Introduction Statistics for Sociology", which builds on SOCY 100. This spring, we taught 41 classes of these three specialized beginning courses in Statistics. In addition the Mathematics Dept. taught 8 classes of STAT 100. "Elementary Statistics and Probability".

An eleventh grader, doing well in Algebra II, has several math options for Grade 12, including Pre-Calculus and AP Statistics. Learning Pre-Calculus will make him/her fully ready for all college majors, including STEM majors. But, taking AP Statistics will likely put him/her at-risk for college majors in statistics and engineering.

Common Core Math Standards prescribed a Statistics strand for high and middle school. Also, a weak Algebra II syllabus. Time on Statistics will take time away from Algebra. This may increase the numbers of students needing to retake high school Algebra II in college.

That college math professors consider statistics and probability to be *optional* courses in high school is reflected in their statement that statistics and probability are two of "several mathematics courses that could be considered reasonable for study once students have achieved a strong background in algebra and geometry" [5].

That students are *not* obtaining competency with Arithmetic-level data analysis is indicated by the following Problem 1, which stymied more than 5 of 8 (65%) Grade 9 students, when it was field tested in Maryland (MD).

Problem 1.[6] "The table below shows how a typical household spends money on utilities.

Utility	Percentage of Total Utility Costs
Lighting	6
Refrigeration	9
Water heating	14
Appliances	27
Heating and cooling	44.

A typical household spent $1,400 on utilities last year. If there are no significant changes in their utility usage for this year, how much should they budget for heating and cooling their home this year?
[Multiple Choice] F $196 G $378 H $616 J $784 "

Comment. Students had *calculators* to calculate 44% of $1400 or they might simply notice that H $616 is the only choice that is a little less than $1400/2.

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[5] This was noted in the "[College Professors' Concerns on] Mathematical Preparedness of Incoming College Freshmen", the only statement on college preparedness issued by The MD/DC/VA Section of the Mathematical Association of America (MAA). On the web at:
http://sections.maa.org/mddcva/HS_students.php

[6] Sample MD High School Assessment on Algebra and Data Analysis, Item 48 [2000]

Data analysis is often too *tricky* for high school. It is *even* too tricky for the writers of the State of Maryland High School Assessment [MD HSA] on [Some concepts from] Functions, Algebra, Probability and Data Analysis. (Passing this assessment is a high school graduation requirement.) For example:

MD Assessment Item on Data Analysis [7]. "In a small town, 250 randomly sampled registered voters were asked to state whether they would vote "Yes" or "No" on Measure A in the next local election. The table below shows the results of the survey.

VOTER SURVEY RESULTS

Yes	No	Undecided
96	34	120

There are 5,500 people expected to vote in the next election. Based on the data, how many people will vote "No" on Measure A in the next election?"

Students who answered 2,112, were marked *correct* on the 2007 MD state assessment. To obtain this answer of 2,112, students are expected to make a number of unwarranted and usually *incorrect* assumptions [8]. But, students who answer 2,112, on a college political science exam will likely be marked *wrong*; a correct answer would be: *not* enough information is provided for the list of reasons noted in the footnote. [9]

Again, Data analysis is often *too tricky* for high school: UMCP Physics Professor, Tom Cohen's, observations of his child (a student in Montgomery County Public Schools, MD) doing her Algebra/ data analysis homework on "best fit" lines:
"However, the way data analysis is taught and tested troubles me. ... [10] The issues are subtle and algebra one students are not prepared to deal with them. Thus, the students are being miseducated in data analysis and statistics."
"In my view this treatment is worse than useless, it is positively destructive. Students are told in essence to plug things in which they don't understand and then to trust the answers. This is diametrically opposed to the critical reasoning about data analysis that we need to instill in students."

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[7] This is 2007 Public Release Algebra/Data Analysis Item #38 at
http://mdk12.org/assessments/high_school/look_like/2007/algebra/ftri38.html
This is also Item #37 at
www.mdk12.org/assessments/high_school/look_like/2007/algebra/hsaAlgebra.pdf

[8] The number of people, who will actually vote in the next election, is exactly (not just approximately) equal to the number expected to vote.
None of the undecided people will make up their mind and choose to vote "No" after the survey. This is rarely a true statement.
All of the surveyed people, who answered, "undecided" were actually undecided. Nobody said "undecided" as a polite way to say "None of your business".

[9] Incorrect assumptions listed in preceding footnote.

[10] "In particular, the use of linear regressions (done by a calculator) to fit lines is not appropriate for algebra one students, in my view. The students are NOT taught what a "best fit" line means mathematically, how to judge whether the model fits the data well ... nor even given any clear way to understand whether the data ought to fit a line. If you ask the calculator for a line which will fit points which lie on a parabola the calculator will spit back a [misleading] line and the students will dutifully write it down."

From: "gurdial singh" <dr_gurdial@hotmail.com>
Subject: Developed Anti Cancer Compound For your Urgent Consideration
Date: Sat, September 10, 2011 2:40 am
To: pcast@ostp.gov

Respected

We have come up with a molecule which is effective in Ten cancer cell lines studied so far and is non toxic and has no side effects.The route of Administration is Oral making it painfree treatment for cancer.Very Intriguing results in Humans Suffering from Cancer Of Pancreas,NHL,Brain,HCC,LUNG,Multiple Myeloma and that too of late stage have been achieved.The Main Achievement is That it Makes Lymphnodes Insignificant which means means cancer free and chances of Re-Occurance Is Negligible..The entire data is Backed or supported by the evidences(Radiological DATA, SCANS,Pathological DATA).

YOU WILL BE SURPRISED TO SEE THE RESULTS IN HUMANS...WONDERFUL RESULTS WIth LYMPHNODES BECOMING INSIGNIFICANT.

This compound is to be taken orally.It has been proved non toxic and without side effects.Studies indicates to be active Antiproliferative compound.It is effective in various cell lines**like Breast,Prostate,Lungs,Colon,Liver,Squamous cell carcinoma,Sarcoma and Lymphoma.**

In Human studies it shows inhibtion in 4-5 weeks,then followed by regression and finally elimination of cancer cells.Lymphnodes also become insignificant in 6 months to 9 months.Various cancers of different organs has been studied.This compound is able to cure even 3rd-4th stage patients which were reported reoccurance after the chemotherapy.Very interesting results have been achieved **in NHL,Ductal Carcinoma,Adenocarcinoma of cervix,Carcinoids tumours,Squamous cell carcinoma of Lungs,Larynx,Prostate cancers and Hepato cellular carcinoma**.This compound is able to inhibit growth in Brain cancers and slows down growth in **Glioblastoma.**

The Nature of the compound(Satcon) is:

1. **An Antioxidant**

2. Shows **Mitotic Inhibtion**.Prevents mutagenesis induced by carcinogens.Could be considered to have a potential to prevent carcinogenesis.But there was no cytotoxicity observed at a dose which showed **100% inhibtion.**

3. The absence of cytotoxicity establishes it to be a safe agent.

4. **Antiproliferative activity** is observed in various cell lines studies like Breast carcinoma,Prostate cancer,Human Lung carcinoma,Colon carcinoma,Liver,Pancreatic cancer,Squamous cell carcinoma,Lymphoma,Sarcoma.

5. **Anticancer studies in rats** :

Gastric cancer studies were conducted in Wistar rats(16 weeks study) and it showed complete reversal that is both stomach and fore stomach were normal.

6. **Human Studies**

Different types of cancers of different organs are undergoing studies.very interesting results have been observed.Within 3-4 weeks inhibtion is usually observed even in 3rd stage cancers and after that it started showing regression.With passage of time and continuance of said medicine,active lymphnodes starts becoming insignificant.With this drug chances of Reoccurance are very little.

All studies indicate it to be a safe,non-toxic and future drug of cancer.

Main scientific and technology approaches pursued:

1. ***Antioxidant studies.***

2. ***Antimutagenecity testing based on Ames testing.***

3. ***Antiproliferative activity in various cell lines.***

4. ***Vivo studies in wistar rats for cancers.***

5. ***Toxicity studies in wistar rats.***

6. ***Human studies were conducted on various patients suffering from different types of cancers.***

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*We request you to look into this and help us in bringing this compound in the market and help the sufferers and needy..*We want to bring this compound to Reach the masses for which we need Collaborations and systematic Phase III studies If required as Phase III trials cost too much for a single cell line where as this compound has shown remarkable results in various cell lines..so for a scientist it is impossible to get the trials done alone.We want your support to get it through and help the world in the best possible way.People will Thank you.

Looking forward to hear from you.

Best Regards
Dr. Gurdial S. Arora
Ph.D.,PDF
UCLA-USA
Hokkaido Univ.-Japan Cell: 0091-9815881717

Attachments:

untitled-[1]	
Size:	4 k
Type:	text/plain

From: "Ken Berg" <bergk@cox.net>
Subject: Comments for PCAST meeting
Date: Mon, September 12, 2011 12:33 pm
To: pcast@ostp.gov

I am:

Ken Berg

Co-chair of the Motor Sports Working Group (MSWG) of the International Council on Systems Engineering (INCOSE).

These are my comments for the September 16th Meeting

We are working with the University of California, Irvine and other California universities and high-schools in Performance Engineering projects (see attached) intended to enhance the STEM knowledge, situational awareness, management skills and innovative designs of students. We believe our projects are supportive of the aims of the Advanced Manufacturing Partnership and the Genome Initiative. We would like to be in contact with them to ensure conformance, and improve our approach as may be desirable to them and the national imperatives of the America Competes Act for STEM and Competitiveness. We are eager to pursue the prospects of digitized education illustrating the use of STEM in high-performance, high-technology, high-achievement pursuits. We believe this can benefit one-on-one education.

Thus, what we are doing, and our aims, are unique. Accordingly it is important we be in close contact with nationally ordained programs--to ensure conformance to national imperatives for STEM and Competitiveness.

Who should we be in contact with having the capability to effectively collaborate on these issues?

Kenneth L. (Ken) Berg

The Motorsports Education Foundation

Co-chair MSWG of INCOSE

Mission Viejo, California

(949) 830 6888

http://academia.edu.

http://www.usc.edu/libraries/archives/arc/lasubject/records/id277.html.

Motor Sports Accelerates SySTEM Learning

UNIVERSITY OF CALIFORNIA, IRVINE

BERKELEY · DAVIS · IRVINE · LOS ANGELES · RIVERSIDE · SAN DIEGO · SAN FRANCISCO SANTA BARBARA · SANTA CRUZ

DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING
THE HENRY SAMUELI SCHOOL OF ENGINEERING

4200 Engineering Gateway
Irvine, CA 92697-3975
Phone: (949) 824-5406
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http://mae.eng.uci.edu

Subject: Performance Engineering Competitions for Students August 18, 2011

We invite your support for a Performance Engineering program engaging university and high-school students in teams requiring the use of Science, Technology, Engineering and Math (STEM) in competition. Teams will be judged on their planning, innovation, design, construction and performance of various engineering systems such as energy efficient vehicles, airrcraft, autonomous vehicles, robotics and other projects.

Industry volunteers will judge the written and verbal presentations for design, budgets, and marketing. Team quality of manufacturing, safety and conformance to emission and other regulations will be judged. On-track performance will be timed. There will be no head-to-head racing. Innovation, teamwork and organizational skills will be measured, along with the technical and academic skills of the student team-members.

Prospective team members will be pre-qualified by their academic standing in STEM and project engineering courses, as well as by their eagerness to engage in high-performance, high achievement projects, in competition. The competitions are arranged so that the continuous improvement of personal skills and technologies of the team will be supported with continuously updated operating plans, procedures and engineering documents. The quality of the plans left for those who follow them will be important to the seniors resume's, and will allow 'Lessons Learned' to be drawn for wide dissemination.

Currently this program is a collaboration of two universities, nine high-schools, two nonprofit organizations, 40 industry volunteers, and others, to provide a Performance Engineering experience in Competitions for Emerging Technology Vehicles culminating in *The Energy Invitational* in the Spring of 2012. This program involves 1,250 16 to 18 year-old students from the Orange County Regional Occupational Programs.

The event is designed to include universities and high-schools outside of Orange County and in neighboring states to support their involvement in Performance Engineering at high-school, university and college levels.

Funding, tooling, mentors, instructors, access to state-of-the-art materials and technologies are sought. Please feel free to enter the competitions to show-case your technologies, and participate in the exchange of technologies with other competitors.

J. Michael McCarthy
Henry Samueli Chair and Director
Center for Engineering Science in Design
University of California, Irvine

PERFORMANCE ENGINEERING

A coordinated program of design reviews, workshops and mentor visits culminating in an engineering competition.

Guiding Principles:
• Easy entry for new competitors • Exciting for experienced competitors • Rules that are clear and open
• Culture of safety and cooperation for all involved • Focus on performance in the face of challenges to overcome adversity and inertia—eg. expedite improved materials, technologies and techniques

"*real-world challenges in systems engineering, design and problem solving, along with teaming challenges of collaboration and cooperation"*---Richard Kleine, EdD, 2011 President SAE International.

The Energy Invitational is an Endurance Race for Emerging Technology Vehicles--a competition based on power management and efficiency.
• Winner: **Maximum speed on a road course--per dollar of energy.**
• Venue for mixed competition: Colleges, High Schools, Industry Professionals and Enthusiasts
• Open body and chassis designs • Open power-plant designs.

Balanced set of competition objectives for effective engineering requiring Planning, Execution, Communication and Testing. All four components are judged:
1. Design objectives: Innovation, Implementation, Function and Knowledge
2. Communication: Identify opportunities, Presentations
3. Technical inspection: Safety ergonomics, Convenience, Emissions, and Power-plant design
4. Dynamic event: Power efficiency, Energy cost.

2011 Performance Engineering event, Willow Springs, California

Projects of all scales are possible

Current Status:

An “Innovation in Instruction” proposal to the US Dept. of Education for $2.996m was submitted to coordinate:

- two engineering faculty and two education researchers from UCI;
- two engineering faculty from CSUF;
- high school teachers from Los Amigos HS, Los Alamitos HS, Huntington Beach HS, Tustin HS, Trabuco Hills HS, Capistrano Valley HS, Foothill HS and Esperanza HS;
- administrators from four ROP districts, two school districts and OC department of education;
- volunteers from Southern California Section of SAE; and
- in collaboration with the non-profit Vital Link of Orange County.

Planning is moving forward to launch a pilot version of this program in September 2011.

The use of an engineering performance competition as the driver for STEM education has been proven at the college level and works across all disciplines such as:

- aircraft design-build-fly, rocket design and flight,
- bridge design and construction, concrete canoe,
- robotics for: robot soccer, autonomous vehicles (on ground and under water)
- planetary mining, and more ...

OUTREACH BEYOND ORANGE COUNTY

Government programs such as The Advanced Manufacturing Partnership (AMP), the Genome Initiative (for expediting the development of new materials), and various other government agencies, along with industry associations such as: SEMA, ASE, ABET, NACAT, NATEF, INCOSE, SAE are potential partners in this initiative to engage the teaching, learning and competitive implementation of academic and technological skills of students—some going into commerce—some into higher education, and, ultimately, into the competitive markets of the world.

The competitons will mix people promoting the next generation of materials and manufacturing technologies and techniques, along with sales, marketing and servicing skills leading to continuous improvement. Those in commerce now can relate their present situation and their thoughts of the future and bring students into the realities of commerce, while other participants may generate new concepts of value to those in commerce. Students will form ideas for future careers. Employers will become aware of talented future employees/colleagues.

Education research can measure the impact on student attitudes toward technology; in particular the commitment to the pursuit of excellence.Testing to increase performance requires physical models and a test plan that matches directly to STEM courses. The crucial activity is measurement and testing to improve performance. This is the foundation for quality engineering.

From: "Tom Munnecke" <munnecke@gmail.com>
Subject: support for metadata approach to Health IT
Date: Fri, September 16, 2011 2:16 pm
To: pcast@ostp.gov,info@tvworldwide.com

I am one of the original software architects of both the VA VistA system (as a VA employee), and the DoD Composite Health Care Systems (CHCS) (as a contractor).

I would like to express my support for the PCAST focus on a metadata model of health IT. This is a model that I adopted in my earliest architectural designs of VistA - starting with a tiny (19 commands, 22 functions, 1 data type), which supported a meta data manager (Data dictionary - the roadmap to the database) which then served as a foundation for the future VistA and CHCS architectures over the years. (I collaborated with Paul Egerman on an early paper regarding these ideas).

I think that you are moving in the right direction in promoting metadata, but haven't gone far enough. Also, I think the government should focus on "what is the simplest possible initial condition?" to get started, and work their way forward from their rather than trying to define overblown, brittle requirements.

I look forward to helping to move forward this exciting technology.

Tom Munnecke
Independent Consultant

From: "Tom Munnecke" <munnecke@gmail.com>
Subject: Comments to Dr. Wennergren
Date: Fri, September 16, 2011 2:31 pm
To: pcast@ostp.gov,info@tvworldwide.com

For the record, here is a photo of the first VA/DoD health IT interface, driven by shared meta data between VA Loma Linda and March AFB:

http://www.flickr.com/photos/munnecket/143879841/

Dr. Wennergren speaks of data, whereas PCAST is talking about metadata. Is he planning to move to the PCAST-recommended meta-model?

Tom Munnecke, Ingeborg Kuhn, George Boyden, Beth Teeple showing off the first VA/DoD Health IT interface

1985... This was a PDP 11/34 computer that was the first VA/DoD Sharing system between the VA and the DoD, from March Air Force Base Hospital and Loma Linda VA. This demo of VA software in a DoD facility was a key factor in Congress' decision to hold a competition including the VA DHCP software for the Composite Health Care System. then Lt. Beth Teeple was director of Patient Affairs at March AFB, and invoked Rep. Sonny Montgomery's VA/DoD Sharing agreement to trigger the sharing between VA and DoD. She also formed "Moses' Blackbirds" as an offshoot of the Underground Railroad, but the organization didn't thrive in the military environment, it seems. George Boyden was the director of DP at Loma Linda VA medical center, and Ingeborg Kuhn was the director of the San Francisco Information Systems Center, who was supposedly managing me while I was at Loma Linda VA. I had been demoted as a civil service employee (as part of a larger purge by Central Office - I was working laterally with my peer group, rather than building a pyramid of employees under me). My reward for doing this work was that my demotion was reversed... and I later received a $75 bonus.

This interface used an SMTP interface - a novel technology at the time. I wrote one of the first SMTP processors for MailMan, working closely with Jon Postel. I registered VA.GOV through a phone call with Jon, and took what I think is the first civilian agency email address: tom@va.gov

This interface pioneered a number of technologies that are still being explored today: the use of a metadata-driven exchange model (the Data Dictionary used by the FileMan), the use of SMTP (used by HHS Direct program today), and the use of serialization standards (We didn't have XML and JSON back then, so I had to invent FileGrams and PackMan instead)

From: "Tom Munnecke" <munnecke@gmail.com>
Subject: Re: support for metadata approach to Health IT
Date: Fri, September 16, 2011 2:25 pm
To: pcast@ostp.gov,info@tvworldwide.com

Does Dr. Mostashari's envision applying a metadata model to the entire Health IT framework, including personalization, genomics, nanotech, and social networking, rather than just a minor subset of data elements?

Tom Munnecke

From: "Tom Munnecke" <munnecke@gmail.com>
Subject: Re: Comments to Dr. Wennergren
Date: Fri, September 16, 2011 2:37 pm
To: pcast@ostp.gov,info@tvworldwide.com

In my 30 year history, I've developed three separate VA-DoD interfaces that were technically correct, but politically incorrect.

What is being done to overcome the political barriers to VA-DoD sharing; and will these efforts be any different than any of the previous huffing and puffing on the hill to force improved sharing?

On Fri, Sep 16, 2011 at 11:31 AM, Tom Munnecke <munnecke@gmail.com > wrote:
> For the record, here is a photo of the first VA/DoD health IT
> interface, driven by shared meta data between VA Loma Linda and March
> AFB:
>
> http://www.flickr.com/photos/munnecket/143879841/
>
> Dr. Wennergren speaks of data, whereas PCAST is talking about
> metadata. Is he planning to move to the PCAST-recommended meta-model?
>

From: "Tom Munnecke" <munnecke@gmail.com>
Subject: Do we really have to call them "Consumers?"
Date: Fri, September 16, 2011 2:46 pm
To: pcast@ostp.gov,info@tvworldwide.com

I would like to register strong disapproval with Dr. Mostashari's use of the term "consumer" when speaking with patients.... none of the VA or DoD patients consider themselves as such.

This also gets in the way of peer-to-peer and social network approaches to health and "creating an epidemic of health" (per Jonas Salk's vision)

From: "Tom Munnecke" <munnecke@gmail.com>
Subject: HHS simple model of Direct mail
Date: Fri, September 16, 2011 2:56 pm
To: pcast@ostp.gov,info@tvworldwide.com

I applaud Dr. Mostashari's health email protocol... and the notion of starting with an agile structured approach.... this was exactly the approach I used for the VA/DoD interface in 1984... and used shared metadata to describe the model.... unfortunately, the politics between VA and DoD scuttled the effort....

VA and DoD sharing is constrained by politics, not technology.

From: "Tom Munnecke" <munnecke@gmail.com>
Subject: Lessons Learned studies?
Date: Fri, September 16, 2011 3:01 pm
To: pcast@ostp.gov,info@tvworldwide.com

agreed about the value of lessons learned...

I suggest that PCAST do a "deep dive" into the lessons learned in the existing large scale success stories they mention... particularly VistA in the VA and Epic in Kaiser. see http://munnecke.com/blog/?p=906 What is it that these approaches worked? What can be applied to the future?

They might be surprised that both use a nearly identical metadata model, and are both based on a 25 year success story of government health IT standardization (ANS MUMPS).

From: "Tom Munnecke" <munnecke@gmail.com>
Subject: +1 to Dr. Cassell's recommendations re VA and DoD applying PCAST recommendations
Date: Fri, September 16, 2011 3:12 pm
To: pcast@ostp.gov,info@tvworldwide.com

PCAST recommendations are on the right track, but haven't gone far enough

---

From: Charles Fotsch [mailto:cfotsch@bex.net]
Sent: Monday, September 26, 2011 8:41 PM
To: Stine, Deborah D.
Subject: Migration to the WWW

Most electronic health record systems and other essential data IT have migrated to the WWW. Power outages can disrupt the WWW, whether at the originator's office, final server destination or HOP points in-between. NIST say's the WWW should be limited to non-essentials because of security and privacy concerns. "Utilization of the WWW" would be a good PCAST study.

Welcome: Pcast@ostp.gov

PCAST and the Bill of Rights for Scientific Freedom

From: "Lloyd Etheredge" <lloyd.etheredge@policyscience.net>
Date: Mon, September 5, 2011 8:30 am
To: "Dr. John Holdren - Science Adviser to President Obama" [redacted]
Cc: "Dr. Rosina Bierbaum - PCAST" [redacted]
Priority: Normal
Options: View Full Header | View Printable Version | Download this as a file | Add to Address Book | View Message details | View as plain text

Dear Dr. Holdren, Dr. Lander, and Colleagues:

I enclose a draft **Bill of Rights for Scientific Freedom** for your consideration. Unless there is a legal countermove, Republicans will
continue to constrain and weaken the SBE sciences and our universities. It is not a very attractive future - and they will attack again.

I also attach a reference copy of Appelbaum's recent Times article re economic data. It is a small fraction of the evidence about how the current system will continue to function unless there is a light touch of high-level leadership and statesmanship by PCAST.

Lloyd Etheredge

Dr. Lloyd S. Etheredge - Director, Government Learning Project
Policy Sciences Center Inc.
c/o 7106 Bells Mill Rd.
Bethesda, MD 20817-1204
URL: www.policyscience.net
301-365-5241 (v); lloyd.etheredge@policyscience.net (email)

[The Policy Sciences Center, Inc. is a public foundation that develops and integrates knowledge and practice to advance human dignity. Its headquarters are 127 Wall St., Room 322 PO Box 208215 in New Haven, CT 06520-8215. It may be contacted at the office of its Chair, Michael Reisman (michael.reisman@yale.edu), 203-432-1993. Further information about the Policy Sciences Center and its projects, Society, and journal is available at www.policysciences.org.]

Attachments:

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2011.0904.BillofRightsLetter.AAAS+COSSA.pdf	2.2 M	[application/pdf]	Download
2011.0816.appelbaumeconomicdata.pdf	24 k	[application/pdf]	Download

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THE POLICY SCIENCES CENTER, INC.

Project Director: DR. LLOYD ETHERIDGE
7106 Bells Mill Rd.
Bethesda, MD 20817-1204
Tel: (301)-365-5241
E-mail: lloyd.etheredge@policyscience.net

September 4, 2011

Dr. Kenneth Prewitt - President
Consortium of Social Science Associations
1701 K St., NW - Suite 1150
Washington, D.C. 20006
&
Dr. Nina Fedoroff - President
American Association for the Advancement of Science
1200 New York Ave., NW
Washington, D.C. 20005

Dear Dr. Prewitt and Dr. Fedoroff:

I recommend that COSSA and AAAS move quickly to build upon the InterSociety Letter (and the strong support shown in Congressional testimony, discussed in Dr. Prewitt's invited editorial in Science (August 5, 2011), "Social Science, Spared Again") and secure agreement for a **Bill of Rights for Scientific Freedom**. I enclose a draft for your consideration. Scientists have a unique opportunity, now with a Democratic President and the Democratic control of the Senate, to secure these Rights for all scientists.

A Bill of Rights for Scientific Freedom will protect the rights of individual scientists. It will provide guidance, protection, and strengthen the political backbone of public officials, civil servants, and advisory panel members. Without this legal countermove, we can expect that Republican ideologues and lobbyists will continue to exploit the vulnerabilities that they have found.

The draft **Bill of Rights** focuses on the transgressions and breakdowns at the National Science Foundation/National Science Board system. The 140+ members of the coalition that supported the principles in the InterSociety Letter may find it reasonable to broaden the **Bill of Rights for Scientific Freedom** and enforcement mechanisms to include all federal granting agencies. As a first step, the **Bill of Rights** can be supported across the scientific community and a Presidential directive can make it binding across most agencies.

A National Backlog for Learning

I honor the recent (survival) accomplishment by Dr. Prewitt and others (". . . Spared Again.") However, this accomplishment is not good enough.

The "Republican Narrative" of Presidential candidate Rick Perry, discussed in the attached column by David Brooks, illustrates the national learning backlog. For the past three decades we could have had an exciting national rapid learning mechanism, on the model of the Michelson-Morley experiment in physics, to test these simple, repeating (and sometimes loud, and in some respects honest) truth claims. We might have learned something.[1] It is absurd, and a national embarrassment, that Presidential candidates can espouse (and reputable New York Times columnists can discuss) these causal theories while an accommodating National Science Foundation neutralizes our nation's universities, and blockades their independent role as honest scientific brokers and engines for fresh evidence, thinking, and rapid learning,

Principles of Democracy

Political scientists have a professional appreciation of the many competitive, hardball (and sometimes clever) tactics, accommodations, banal behavior, and alibis that have been involved in restricting the civic relevance of university-based science since the early Reagan years. Political scientists also have a professional appreciation of the centuries of battles, blood, vigilance, and hard work since Runnymede that were intended to prevent small groups of ambitious power-wielders in Washington, acting behind closed doors, from making secret decisions - falsely portrayed as judgments of scientific merit - to neutralize our national university system and kill lines of important investigation.

Republicans are entitled to fairness and scientific integrity in testing their Narrative, its diagnoses, and its remedies. However creating a Right-Wing Attack Machine, pressuring bureaucrats and the national Science Establishment, threatening the national science budget, and appointing compliant or timid public officials and members of advisory panels at NSF and to the National Science Board are not legitimate tactics in this area. If they wish to restrict scientific freedom in the use of public funds, they must do so by open political combat, achieving public votes and formal legal agreement by both Houses of Congress, a President, and the courts. Assuredly, in their political combat, they must convince many members of the electorate and leaders of national institutions who have attended college, and who believe in evidence-based and reality-connected public policy. They are less likely to attempt this legitimate route if a new, detailed **Bill of Rights for Scientific Freedom**, and enforcement mechanisms are agreed upon by thoughtful people of integrity and strengthen the defending walls.[2]

Unless AAAS, COSSA, and other leaders in our national Science Establishment take further, bold steps, the accommodationist future that we face for the next thirty years will have about the same

political and civic learning rate as we have seen in recent decades. We can do much better.

Yours truly,

Lloyd Etheredge

Dr. Lloyd S. Etheredge

Attachments: Bill of Rights for Scientific Freedom (draft), September 2011
David Brooks, "The Vigorous Virtues," The New York Times. September 1, 2011

1. It is unlikely that all of the truths about social, economic, and international policy, human nature, and human potential lie at one point along the current Left-Right dimension in American domestic politics. There are plausible and testable social science theories to suggest they do not lie along this dimension at all, although there can be elements of truth and insight in many strongly held current views.

Also: there are deep and shared concerns across the political spectrum - for example, an America with strong, healthy, and responsible individuals - where neuroscience paradigms offer the possibility of better empathy and new and faster solutions to societal problems.

2. A legal framework - i.e., the **Bill of Rights** - is wiser and preferable to the national "solution" of the past thirty years. Our national scientific Establishment does not hold legal office with top-down authority and the heady tradition of the past thirty years, with behind-closed-door Washington strategizing and political accommodations, gives the appearance of crossing many legal and ethical lines. For example, of conspiring against the due process rights (and damaging the careers) of individual scientists who have applied, across the past three decades, to further the Donald Campbell/learning tradition of testing ideological assumptions, or who have applied to do research that, to Republicans, would be socially disruptive or politically challenging, or investigate social pathologies (like racism) that Republicans firmly wished to remain invisible.

Similarly the compliant *en masse* restructuring of the SBE sciences via the National Academy of Sciences and the Luce Commission probably involved economic and scientific fraud; the same conspiracy against the civil and due process rights of activist- and reform-oriented scientists (including, probably, the entire UC Berkeley social science faculty); and cavalier violations of the racketeering statutes by Luce et al., who the National Academy of Sciences (Press, and later Alberts) allowed to use federal funds and to serve as judges while dishonestly manipulating the ranking process to achieve ten-year "leading edge" designation and competitive advantages for themselves, their ideas, and their friends. [Notably, the off-the-record meeting of David Hamburg's Carnegie Commission twenty years ago bluntly warned the power- and Washington-oriented members of our scientific Establishment not to do this - and that integrity, honesty, and political courage would be the wiser policy.] There may be stark lessons ahead, and an abundance of legal (and peer) sanctions that will be imposed for what already has occurred.

A Bill of Rights for Scientific Freedom (Draft)

by
Lloyd S. Etheredge [1]

Preamble

- Awards of public funds for research by the National Science Foundation must be made on the basis of scientific merit as determined by a peer-review process. Neither the National Science Foundation, the National Science Board, nor any of their officials and employees, advisory bodies, or peer-review panels will make any adverse recommendation concerning budget and funding priorities for programs and infrastructure initiatives, nor concerning individual grant applications, based on any other criteria, except as specified below.

- The purpose of this Bill of Rights is to confer and guarantee the rights of scientists. It also is intended to establish guidance and protections and strengthen political backbones of National Science Foundation and National Science Board officials and public employees, reviewers, and advisers; and to establish reliable enforcement mechanisms.

Scientific Rights

A.) Any truth claim made by any public official, or candidate for public office, or expressed in the news or opinion columns of national newspapers or other national media, shall be deemed legitimate for scientific investigation using public funds.

B.) Any social fact, condition, or pathology (or alleged pathology) and any cause that is claimed in public discourse or ideological statements, the news media, and/or standard textbooks or in peer-reviewed scientific journals shall be deemed legitimate for scientific investigation using public funds.

C.) Any truth claims or viewpoints that are acceptable for public funding by any other government agency (e.g., the National Endowment for the Humanities) shall be acceptable for scientific investigation using public funds.

D.) No adverse decision or recommendation by the National Science Foundation, National Science Board, or any of its officials, employees, reviewers, or advisers may be based on beliefs or claims, even if justified, that a line of research is (or might be) controversial, socially disruptive, or politically challenging or arouse criticism from any member of Congress or Committee. [This prohibition extends to all other political or sociological arguments and justifications for suppression, even if they might appear as valid - e.g., that "The American people are not ready for evidence--based public policy" or that any publicly funded research reflects a hateful "Nanny State," or that a public mood does not favor a specific, unsettling line of investigation; or a preference that

government-funded research must be “neutral” in its impact on partisan truth claims or public debates.]

E.) All recommendations for program initiatives, infrastructure investments, and grant applications shall receive a fair and honest evaluation of scientific merit by a peer-review process. The National Science Foundation, National Science Board, and advisory panels may not engage in prior screening or restrictive program definitions that deny unwanted, politically challenging, heterodox, or uncomfortable research ideas the right to evaluation based on scientific merit.

F.) Nothing in this Bill of Rights shall restrict the legitimate power of the federal government to determine the spending of public monies. However, these restrictions on scientific freedom must be enacted into law by a legal and democratic due process that secures agreement from both Houses of Congress, is signed by a President, and upheld by the courts. Restrictions may not be imposed by pressure or threat, nor by appointments of compliant officials or advisers, nor by other means. All of the legal and non-scientific criteria allowed to affect program-level, budget, and individual grant decisions must be reported publicly, fully, promptly, and in writing to all of the parties who are known to be affected.

Enforcement and Appeals

A.) All participants in advising, reviewing, influencing, or deciding budget and program initiatives and the award of individual grants at the National Science Foundation and the National Science Board must sign a legally binding oath to enforce and abide by this Bill of Rights fully and in good faith.

B.) [X - to be determined] shall establish, in consultation with professional and scientific societies, a public Scientific Integrity Board with assigned legal counsel, and procedures by which any adverse decision resulting in scientific suppression or alleged scientific suppression in violation of this Bill of Rights may be appealed.

Appeals may be filed concerning *de facto* decisions - for example, budget and program decisions which kill infrastructure investments or lines of investigation by omission or when formal votes do not occur. And when proposals are removed from agendas or circulation for formal review.

Appeals may be filed by individuals, recognized scientific and professional organizations and/or universities (individually or as a class action).

The Scientific Integrity Board shall operate with public hearings and due process, including the right to be represented by counsel. It shall have the power to compel all government officials,

employees and advisers to testify in public and under an oath. An appeal to the Board shall grant full rights of discovery and disclosure of all internal administrative documents and communications of the National Science Foundation, the National Science Board, its staff, and its advisory committee members, consultants, and reviewers bearing upon the decisions. No claims of privacy or administrative secrecy or confidentiality shall be acceptable.

There shall be appropriate penalties for any public officials or advisers who violate this Bill of Rights, or who induce or condone a violation by others.

September, 2011

1. Draft by Lloyd S. Etheredge, Director - Government Learning Project at the Policy Sciences Center, Inc., a public foundation. Email: lloyd.etheredge@policyscience.net. URL: www.policyscience.net; (301)-365-5241 (v). This draft is a working document prepared for discussion.

The New York Times. September 1, 2011

The Vigorous Virtues

By DAVID BROOKS

There's a specter haunting American politics: national decline. Is America on the way down, and, if so, what can be done about it?

The Republicans, and Rick Perry in particular, have a reasonably strong story to tell about decline. America became great, they explain, because its citizens possessed certain vigorous virtues: self-reliance, personal responsibility, industriousness and a passion for freedom.

But, over the years, government has grown and undermined these virtues. Wall Street financiers no longer have to behave prudently because they know government will bail them out. Middle-class families no longer have to practice thrift because they know they can use government to force future generations to pay for their retirements. Dads no longer have to marry the women they impregnate because government will step in and provide support.

Moreover, a growing government sucked resources away from the most productive parts of the economy — innovators, entrepreneurs and workers — and redirected it to the most politically connected parts. The byzantine tax code and regulatory state has clogged the arteries of American dynamism.

The current task, therefore, is, as Rick Perry says, to make the government "inconsequential" in people's lives — to pare back the state to revive personal responsibility and private initiative. There's much truth to this narrative. Stable societies are breeding grounds for interest groups. Over time, these interest groups use government to establish sinecures for themselves, which gradually strangle the economy they are built on — like parasitic vines around a tree.

Yet as great as the need is to streamline, reform and prune the state, that will not be enough to restore America's vigorous virtues. This is where current Republican orthodoxy is necessary but

insufficient. There are certain tasks ahead that cannot be addressed simply by getting government out of the way.

In the first place, there is the need to rebuild America's human capital. The United States became the wealthiest nation on earth primarily because Americans were the best educated. That advantage has entirely eroded over the past 30 years. It will take an active government to reverse this stagnation — from prenatal and early childhood education straight up through adult technical training and investments in scientific and other research. If government is "inconsequential" in this sphere, then continued American decline is inevitable.

Then there are the long-term structural problems plaguing the economy. There's strong evidence to suggest that the rate of technological innovation has been slowing down. In addition, America is producing fewer business start-ups. Job creation was dismal even in the seven years before the recession, when taxes were low and Republicans ran the regulatory agencies. As economist Michael Spence has argued, nearly all of the job growth over the past 20 years has been in sectors where American workers don't have to compete with workers overseas.

Meanwhile, middle-class wages have been stagnant for a generation. Inequality is rising, and society is stratifying. Americans are less likely to move in search of opportunity. Social mobility has been flat for decades, and American social mobility is no better than European social mobility.

Some of these problems are exacerbated by government regulations and could be eased if government pulled back. But most of them have nothing to do with government and are related to globalization, an aging society, cultural trends and the nature of technological change.

Republicans have done almost nothing to grapple with and address these deeper structural problems. Tackling them means shifting America's economic model — tilting the playing field away from consumption toward production; away from entitlement spending and more toward investment in infrastructure, skills and technology; mitigating those forces that concentrate wealth and nurturing instead a broad-based opportunity society.

These shifts cannot be done by government alone, but they can't be done without leadership from government. Just as the Washington and Lincoln administrations actively nurtured an industrial economy, so some future American administration will have to nurture a globalized producer society. Just as F.D.R. created a welfare model for the 20th century, some future administration will have to actively champion a sustainable welfare model for this one.

Finally, there is the problem of the social fabric. Segmented societies do not thrive, nor do ones, like ours, with diminishing social trust. Nanny-state government may have helped undermine personal responsibility and the social fabric, but that doesn't mean the older habits and arrangements will magically regrow simply by reducing government's role. For example, there has been a tragic rise in single parenthood, across all ethnic groups, but family structures won't spontaneously regenerate without some serious activism, from both religious and community groups and government agencies.

In short, the current Republican policy of negativism — cut, cut cut — is not enough. To restore the vigorous virtues, the nanny state will have to be cut back, but the instigator state will have to be built up. That's the only way to ward off national decline.

August 16, 2011.NYTimes, p. A1.

On Economy, Raw Data Gets a Grain of Salt

By BINYAMIN APPELBAUM

WASHINGTON — When the government announced in April that the economy had grown at a moderate annual pace of 1.8 percent in the first quarter, politicians and investors saw evidence that the nation was continuing its recovery from the depths of the financial crisis. The White House called the news "encouraging" and the stock market extended its bull run.

Three months later, the government announced a small change. The economy, it said, actually had expanded at a pace of only 0.4 percent in the first quarter.

Instead of chugging along in reasonable health, the United States had been hovering on the brink of a double-dip recession.

How can such an important number change so drastically? The answer in this case is surprisingly simple: the Bureau of Economic Analysis, charged with crunching the numbers, concluded that it had underestimated the value of vehicles sitting at dealerships and the nation's spending on imported oil.

More broadly, politicians and investors are placing a great deal of weight on a crude and rough estimate that has never been particularly reliable.

"People want the best information that we have right now. But people need to understand that the best information that we have right now isn't necessarily very informative," said Tara M. Sinclair, an assistant professor of economics and international affairs at George Washington University. "It's just the best information that we have."

The growth rate that the government announces roughly one month after the end of each quarter — news much anticipated in Washington and on Wall Street — has been off the mark over the period from 1983 to 2009 by an average of 1.3 percentage points, compared with more fully analyzed figures released years later, according to federal data.

The second and third estimates, announced at subsequent one-month intervals, are no more

reliable. The first quarter this year offers a typical example. The government estimated the annual growth rate at 1.8 percent in May and 1.9 percent in June before issuing its most recent estimate of 0.4 percent.

Perhaps more important, the government underestimated the depth of the recession by a wide margin, initially calculating that the economy contracted by an annual rate of 3.8 percent in the last quarter of 2008. It now estimates the contraction rate at 8.9 percent. Instead of an annual growth rate of 0.2 percent from the fourth quarter of 2007 through the first quarter of 2011, the government now estimates that the economy contracted at an annual rate of 0.2 percent during that period.

The basic problem is easy to understand: More than half of the ingredients in the first estimate are based in whole or in part on projections from past months. The government doesn't actually know how much people spend on their cellphone bills or how much companies spend on construction. It simply makes an educated guess based on past spending. Even in the third estimate, 22 percent of the data still comes from projections.

If basic assumptions start changing rapidly — business failures during a recession, start-ups during a recovery — the estimates can quickly lose touch with economic reality.

"When we most want timely information is when they're least able to give it to us," said Professor Sinclair. "That's exactly when those historical patterns are breaking down."

The Bureau of Economic Analysis, an arm of the Commerce Department, makes some efforts to warn users about these problems. It emphasizes transparency and is uncommonly open to public questions. It says it provides a valuable public service, but that the data reflects only the best available information. But policy makers, investors and the public continue to treat the data as highly significant.

"These are really not much more than educated guesses and yet the marketplace puts enormous weight on them because financial markets are high-frequency trading places based on immediate data," said Madeline Schnapp, director of macroeconomic research at TrimTabs Investment Research.

A growing number of economists say that the government should shift its approach to measuring growth. The current system emphasizes data on spending, but the bureau also collects data

on income. In theory the two should match perfectly — a penny spent is a penny earned by someone else. But estimates of the two measures can diverge widely, particularly in the short term, and a body of recent research suggests that the income estimates are more accurate.

Justin Wolfers, a professor of business and public policy at the Wharton School of the University of Pennsylvania, publicly predicted earlier this summer that the government would sharply reduce its estimate of first-quarter growth, simply by looking at the income estimate buried inside the bureau's initial release.

The income data also captured the depth of the recession much sooner.

"It is appalling how little attention we economists pay to measurement issues," Professor Wolfers said. "The expenditure data looked bad but not dreadful. The income data was dreadful. And it subsequently turned out the absence of urgency among policy makers was largely a result of looking at faulty data."

Professor Wolfers said that in his native Australia, the government estimates growth by averaging the two techniques with a third, related approach. Private firms use similar methods.

Officials at the bureau have said that measuring expenditures has proved to be a more reliable methodology. The estimates are very accurate in one important respect: it is exceedingly rare for the bureau to estimate that the economy is shrinking when it is actually growing, or that it is growing when it is actually shrinking. The bureau meets that standard 98 percent of the time.

What went wrong in the first quarter?

The largest change was because of an annual event. The Census Bureau completed an estimate of the value of vehicles awaiting sale in 2010, based on data collected directly from dealers.

Until July, the bureau had relied on an estimate from a private company, Ward's, which counts vehicles but estimates their values. Based on that data, the bureau estimated that inventories had declined by $30.3 billion in the fourth quarter as sales outpaced the arrival of new cars.

Last month, based on new data, it concluded that inventories fell by only $17.9 billion.

The bureau estimates that inventories shrank by an even smaller amount in the first quarter —

although it won't get equally accurate data until next July — but the effect of the revision was to reduce the difference between the two quarters, and thus to reduce the rate of growth.

The bureau estimates that this change alone is responsible for nearly half the difference between its initial estimate of 1.8 percent first-quarter growth and its current 0.4 percent estimate.

A second major change involves the value of imported oil. The bureau announced a permanent change to its methodology last month to improve the way that it calculates the value of oil, and it concluded that spending on imported oil was higher than it had originally estimated. The details are byzantine but the result is clear enough: roughly 0.5 percentage points of growth vanished.

From: Lloyd Etheredge [mailto:lloyd.etheredge@policyscience.net]
Sen[redacted]
Sub[redacted]
of ti[redacted]

Dea[redacted]

This message forwards, as an attached *.pdf file, a cover letter to AAAS and (draft) plan for the **Scientific Integrity Board**. The attachments explain the case for the Board and document the problems at NSF that it is intended to correct. The unwritten restrictions that NSF now places on the civic role of universities were not reported to Congress - e.g., the exclusion of racism and its effects.

I hope that PCAST will understand and support the plan (unless you have a better idea).

Concerning my letter of August 9: I draw your attention, urgently, to the requirements concerning economic growth and recovery, discussed on p. 2. Remembering the political effects of economic hardship and delayed recovery in the Depression, PCAST is at a unique historical moment and we are running out of time.

Yours truly,
Lloyd Etheredge

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September 17, 2011

Dr. Nina Fedoroff, President
Dr. Alice Huang, Chair - AAAS Council
1200 New York Ave., NW
Washington, D.C. 20005

Dear President Fedoroff, Dr. Huang, and Colleagues:

This letter forwards a (draft) plan for the **Scientific Integrity Board**. The attachments explain the case for the Board and document the problems that it is intended to correct. I hope that the AAAS Directors will develop the plan and present it to the Council. America places great trust in the self-governance of science. We have a responsibility to recommend needed improvements.

I also attach a copy of Kenneth Prewitt's editorial in Science (August 5, 2011), "Social Science, Spared Again." Prewitt references his similar editorial in Science, published thirty years ago in 1981. Today, in 2011, AAAS's splendid leadership has organized the InterSociety Letter and support by 140+ scientific and academic institutions. The foundation has been laid to move beyond mere survival, to build rapid learning systems for the most challenging problems that we face, and (in the terms of the AAAS mission) to advance science "for the benefit of all people."

It is regrettable that, across the arc of the past thirty years, so few people and agenda-setting institutions have been willing to stand against the Republican political and lobbyist pressures. At NSF - alongside a justly honored peer review system for individual grants - a range of devices, especially at the program and budget levels and appointments, continue to kill all new social science research initiatives and data systems of scientific merit that Republicans view as socially disruptive, politically challenging, or that might be used to advocate a more activist government role in the economy.

The National Science Board: A Medical Malpractice Standard

The current system has not been self-correcting. And this still is true, even after the catastrophic failure of the NSF Economics program. This failure of science and stewardship illustrates the brutal human cost, worldwide, when the National Science Board/NSF system knowingly abandons scientific integrity and statistical controls and excludes classes of variables and causal pathways from scientific data systems and investigation. At this point, I apply the standard of medical malpractice, which I hope the new **Scientific Integrity Board** (supported by AAAS and 140+ partners) also will apply.

Urgency and Exciting Opportunities to Design Rapid Learning Systems

It is urgent that we solve these problems of integrity and begin to build rapid learning systems:

1.) Economic Recovery and Growth. We are missing too much data. NSF must move quickly, here and with scientific partners in other countries, to understand the missing variables and improved data systems that are needed to accelerate GDP/capita and jobs recovery and secure a 1% annual GDP/capita increase, above baseline, worldwide.

- Remembering the effects of economic hardship during the Depression, we are running out of time. It is urgent for the scientific community to be confrontational about the comfortable, pro-Republican accommodations of the National Science Board under the leadership of Dr. Ray Bowen (George W. Bush's appointee - now in his second term, a mechanical engineer and the former President of Texas A&M). The levels of youth unemployment in Western Europe, and UDCs (including in the Arab world) and even Black youth unemployment in some US cities are at levels that predict to demagogic, messianic, angry and fear-driven political movements with new, agitational leaders; to political instability, greater violence and terrorist recruitment; and to the potential for ethnic scapegoating. Also, the brutal debt repayment burdens and wholesale abdication of government obligations in Western Europe are just getting underway: There will be political consequences.[1]

There is an extraordinary upside potential, but we should be more scared than we are.

2.) Neuroscience and Resistant Societal Problems. The exciting advances in neuroscience cannot produce breakthroughs in our approaches to many resistant social problems affecting lower status populations until NSF builds a rapid learning system that expands beyond the politically safe "cognitive" applications. For example, it is time to test human predictions - e.g., of the hierarchical psychodrama paradigm concerning unrecognized inhibitions and a submission/ followership mechanism (including endocrine effects) that operates implicitly and automatically, without conscious or rational choice, via the visual cortex in related animal species. Yet despite its public endorsement of transformative science, the NSF/NSB system is suppressing progress by unwritten rules - undisclosed in NSF publications and to Congress, and probably illegal - that have protected White racism and its effects [in addition to Republican ideas] from scientific investigation at American research universities.

3.) International Relations. We are in an exciting new historical era with an extraordinary upside potential for international cooperation. There are many - delayed - lines of investigation that can foster rapid learning, here and abroad, to achieve this potential.

One of many areas for rapid learning is obvious: America is enmeshed in a new era of wars being fought - for many years and at the cost of many lives (Americans and foreigners) and trillions of dollars - according to behavioral science assumptions. Even Henry Kissinger - viewing similar problems across four wars - now agrees that America has a problem of nonlearning.[2]

Intense hardball players on the political Right who want to dominate national security policy and to strangle the possibility of political competition and reactivating the anti-War, campus-based activism of the 1960s, have successfully scared the NSB/NSF system. They will continue to threaten attack and use political pressure to neutralize the role of universities. As a countermove, public accountability and a Scientific Integrity Board will help to strengthen political backbones in the NSF system and the defensive wall.[3]

Yours truly,

Lloyd S. Etheredge

Dr. Lloyd S. Etheredge

cc: AAAS Board and Council; COSSA Board; Dr. Holdren

Enclosures

Kenneth Prewitt, "Social Science, Spared Again" Science, August 5, 2011.

LSE, "The Bill of Rights for Scientific Freedom - # 1. The Need for a Scientific Integrity Board," w/ a cover letter to the U. S. House Committee on Science, Technology and Space, 9/13/2011.

Endnotes

1. Scientists cannot upgrade NSF Economics and achieve rapid learning without preparing for political warfare: After WWI, the unwillingness of wealthy and powerful Germans to pay higher taxes to meet Germany's debt/reparation obligations increased national economic hardship and political instability. Honest NSF research will give support to some reformist policies (like tax increases) that the Republican lobbying machine will fight to the last billable hour. They have been better funded and more effective than AAAS and COSSA.

2. In a recent (June 7, 2011) Op Ed column in The Washington Post. He notes that this (Afghanistan) war is the fourth American War that the US government has entered with a nonlearning baseline of overconfidence, and without a clear understanding of the foreign peoples and circumstances involved; where an unexpectedly prolonged war is being fought to unsatisfactory results at an enormously high and unanticipated cost; and where - next - the processes of political settlement and exit are hasty and without learning.

Cycles of non-learning involving hundreds of thousands of military and civilian deaths and trillions of dollars in American costs are a grim and outrageous price to pay for a weakened NSF/academic system of social science that cannot do its job of diagnosis, analysis, learning, institutional memory, and steady improvement. Kissinger's views are discussed online in "Memorandum 270. Red Team Update: Kissinger on Four Wars with Non-Learning and a Missing Theory," online at www.policyscience.net at II.D. September 5, 2011.

3. Re national security research: it also may help to create a peace treaty with enough of the Republican leadership if - on the model of the Michelson-Morley experiment in physics - the National Science Board and NSF assure that all theories and points of view are evaluated honestly, to our best scientific abilities. The domino theory, for example, has never been tested to acceptable scientific standards and we are seeing, in the Arab Spring, the possibility of a Leftist-contagion version of this theory. The DNI system spends $80 billion/year so it is prudent to have at least a small fraction of this amount available for independent scientific analysis and fresh thinking at universities.

Kenneth Prewitt is a professor at the School of International and Public Affairs at Columbia University and president of the Consortium of Social Science Associations. E-mail: kp2058@columbia.edu

Social Science, Spared Again

LAST MONTH, A U.S. CONGRESSIONAL COMMITTEE WISELY DECIDED NOT TO CUT FUNDING OF SOCIAL science research by the National Science Foundation (NSF), despite an attack that cleverly framed the discipline as "good, just not good enough for NSF." This claim was rebutted across the political spectrum, by physical and biological as well as social scientists, and in the business sector. In May, Senator Tom Coburn (R-OK) issued a report arguing that NSF-funded social science should be eliminated. Oddly, however, his report endorsed such funding by other agencies, where, one supposes, it meets a priority test. Indeed, the Departments of Agriculture, Commerce, Defense, Education, Health and Human Services, and the Congress itself hire, consult, fund, and contract with social scientists in great number. The senator acknowledged that the country needs social science, just not at NSF. This makes no sense. If the country needs social science at all, it needs NSF-supported fundamental research. NSF funds frontier science in physics that underpins more-applied research supported by the National Aeronautics and Space Administration and National Oceanic and Atmospheric Administration. This intelligent division of labor works equally for the social sciences, making continued funding by NSF of the highest priority.

The battle waged against the social sciences is a familiar one. In the 1940s, Vannevar Bush, the director of the Office of Scientific and Research Development, declared social science insufficiently "scientific" to warrant inclusion in NSF. He won the battle but lost the war. Yes, NSF excluded social science, but the nation, as it had during the Depression years and the war years, needed social science. When, in the 1960s, Congress wanted to learn whether policies were working as intended, it did not ask the natural sciences. It issued requests for proposals to the social sciences. Congress even discovered the "human dimensions" in policies that were largely technical in nature, such as disposing of toxic waste or building a space station. The nation needed a science of social behavior and structure. NSF funding for social science started gradually in the 1960s, and by 1975 NSF welcomed a social scientist, Richard Atkinson, as its director, under whose leadership the agency steadily funded basic methodological and theoretical research that underpinned the growing use of social science across the government and in America's businesses.

But in 1981, the Reagan Administration, initially missing the point, returned to the attack, though with a new rationale: Social science was too successful! The field had helped design Great Society domestic programs that the Reaganites intended to end. In a backhanded compliment, defunding at NSF was a step toward disempowering social science. Wiser heads stepped in. In substantial amounts, private money flowed into neoconservative think tanks, leading to outstanding work by excellent scholars who understood that social science is not inherently pro-market or pro-government. It is a science of social consequences, no less useful for designing market solutions than government policies. In fact, documenting the unintended and costly consequences of the latter justified the former. Thanks to social science, America's businesses benefitted from operations research, market surveys, employee testing, cost/benefit analysis, and risk assessment. Lobbyists cited social science research to advance anti-tax and deregulation policies. As a result, government-funded social science, NSF included, increased in the Reagan years, from $197 million [in fiscal year (FY) 1982] to $373 million (FY 1989).

In 1981, I hesitantly submitted a version of this editorial to *Science*,* doubting that it would be accepted, and was uncertain whether natural scientists, conservative social scientists, or business leaders would support the usefulness of the social sciences. Times have changed. In 2011, *Science* invited this editorial.

– Kenneth Prewitt

10.1126/science.1210207

*K. Prewitt, *Science* **211**, 659 (1981).

Published by AAAS

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September 13, 2011

Hon. Ralph M. Hall, Chair
Hon. Eddie Johnson, Vice-Chair
House Committee on Science, Space, and Technology
2321 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Hall, Ranking Member Johnson, and Members:

I write to bring to your Committee's attention an alarming gap, in two important cases, between reality and the public description of its Merit Review system that the National Science Foundation and the Chair of the National Science Board have given to your Committee.

1.) NSF Suppresses the Study of Racism and its Effects

Earlier in the Obama Administration, pursuant to the announcement of NSF's commitment to transformative research, I met with NSF's Assistant Director (SBE) to brief him about new and possibly transformative research in neuroscience concerning the effect of hierarchical psychology on the brain (including effects on the endocrine system). One of many implications is that unsolved problems of educational attainment and social and economic participation affecting Blacks and other lower status populations in America could reflect unrecognized and primitive followership/submission mechanisms (observed in related animal species) activated through the visual cortex. If so, creative psychologists may be able to produce breakthroughs and a better future for everyone.[1]

I was stunned by his aggressive response: "This is the National Science Foundation! The National Science Foundation does not study [the effects of] racism!" I was not aware that the NSF suppressed research concerning social pathologies.

After the meeting I wrote immediately to the Assistant Director to criticize the policy. I also wrote to Dr. Bowen, the head of the National Science Board, and his staff to ask the NSB - as part of their solicitation of comments to monitor and improve the NSF Merit Review process - to review and change these suppressive policies.

Since, I have searched online: I find no written legal authority from Congress, or notification to your Committee, of NSF/NSB policies and Merit Review criteria that suppress studies of social

pathologies and better solutions (and *de facto*, censor and change the civic role of our universities). I am told by colleagues that there is indirect evidence (for example, an ethics case at the University of Michigan, involving research by the psychologist, David Winter, in which the current Assistant NSF Director was involved) that NSF's undisclosed suppressive role has been operating for many years, reportedly with an inhibiting effect on applications.[2]

The only public disclosures of criteria that NSF and the National Science Board provide are those contained in official publications - i.e., scientific merit and societal benefit. They are silent about broad, hateful, and deeply controversial categories of suppression based on nonscientific criteria.[3] Dr. Bowen's recent testimony to your Committee may have been a coverup.

2.) **The Politicization of the NSF Economics Program: The National Science Board's Self-Destruction of Scientific Integrity**

The second case concerns NSF's Economics program. The catastrophic failures that have emerged, with growing costs to Americans and worldwide, can be traced to a set of devices to neutralize honest scientific testing of key Republican ideas. These ideas that have shaped Republican policy thinking since the election of President Reagan were described recently as the "Republican Narrative" by the columnist David Brooks (attached). There have been many serious and failed efforts to restore Merit Review and build a rapid learning system for Economics at NSF and to include these kinds of cultural and psychological variables.

These imposed failures of scientific integrity have changed NSF's traditional Honest Broker role that was part of the intent of Congress when NSF was created as an independent agency (to be supervised by a National Science Board). Merit Review of individual grants has been undermined by devices (including program level decisions) to avoid public controversy arising from socially disruptive or politically challenging lines of investigation at universities.

These growing problems that limit the relevance and effectiveness of NSF's SBE Directorate have a history of thirty years. They are described in more detail, with documentation, in the attached paper concerning the need for a Scientific Integrity Board to supervise the work of the National Science Board, NSF, and their bureaucracies.

Our foundation is committed to the vision of our founders, including the late Harold Lasswell. Our goal is rapid learning and the growth of relevant social science to create a better future for everyone. If I can be of further assistance, please call me at (301)-365-5241.

Yours truly.

Lloyd Etheredge

Dr. Lloyd S. Etheredge, Director
Government Learning Project

Enclosures:

Lloyd S. Etheredge, "A Bill of Rights for Scientific Freedom - # 1.) The Need for a Scientific Integrity Board," with supporting documentation. September 11, 2011.

Excerpts from Report to the National Science Board on the National Science Foundation's Merit Review Process. Fiscal Year 2010. (May, 2011). NSB-11-41 online at http://www.nsf.gov/nsb/publications/2011/nsb1141.pdf, pp. 21-22, 26.

Excerpt from Testimony of Dr. Ray Bowen Chairman, National Science Board to the House Committee on Science, Space, and Technology, March 11, 2011, p. 4. online at http://www.nsf.gov/nsb/publications/2011/2011_03_11_testimony_space.pdf, p. 4

1. These exciting possibilities were outlined in an earlier filing with the President's Council of Advisers on Science and Technology. The filing is archived online at www.policyscience.net at II. A [concerning neuropsychology and rapid learning systems, January 2010.]

2. The David Winter ethics case involved an application for a national sample with measures of achievement motivation. The University Administration jettisoned the research from a university grant application on the grounds that a government official in Washington, published Merit Review criteria notwithstanding, would imagine that Black-White differences could be computed from Dr. Winter's dataset and, thus, the government bureaucracy would invoke an unwritten rule and quietly kill the entire package if Dr. Winter's research was included. The "no studies of racism" rule apparently has a very wide and chilling application since Dr. Winter's research was not about racism. It is unlikely that the University of Michigan would have turned against one of its distinguished scientists without a reasonable basis to believe that the threat was credible.

3. I attach relevant pages from: Report to the National Science Board on the National Science Foundation's Merit Review Process. Fiscal Year 2010. (May, 2011). NSB-11-41 online at http://www.nsf.gov/nsb/publications/2011/nsb1141.pdf, pp. 21-22, 26.

By contrast with what (now) appears to have been NSF's tradition of suppressive practices, the effects of social status on health, even with assurance of equal access to healthcare in the UK, is part of the exciting research network of ideas about brain mechanisms and endocrine effects, for which Marmot (The Status Syndrome, 2004) has been knighted in England.

NSF assures Congress and that public that "All relevant review criteria are described in the program announcement of solicitation" (p. 22). However, the solicitation for transformative research make no mention of criteria related (negatively) to the investigation of social pathologies and better solutions here or abroad, nor prohibitions against socially disruptive or politically challenging ideas.

Across the centuries, the history of science suggests that you cannot support transformative science without (sometimes) being socially disruptive and producing very angry attack from a

conservative/political Right. However, looking back, we are very happy that the scientific investigations were pursued: The history of the Plague shows many centuries of passionate, and even polarized, disagreement between a Right (that believed in foreign sources of infection and quarantine) and a Left (that believed in a miasmatic "bad air" theory, public sanitation, and other societal reforms to improve conditions in the low-lying dock areas inhabited by the poor). Yet we could not solve the problem until scientists - in this case, both social and physical science approaches - could provide the basis for evidence-based (rather than only belief-based) responses.

P. 4. Testimony of Dr. Ray Bowen to the House Committee on Science, Space & Technology, 3/11/2011

outstanding administrative staff to support them. The need for first-class scientific review is very high as just in the last year, NSF staff directed reviews of over 55,000 proposals. Each was thoroughly examined to ensure only the highest quality research would be supported. To sustain this excellence in merit review, the Board urges full funding for NSF's AOAM account.

For the National Science Board Office, the Board requests $4.84 million, an increase of $340,000, or 6.6 percent, for FY 2012. This proposed increase will allow the Board to continue to strengthen its national and NSF policy role and in oversight for NSF.

NSB Oversight Role

When Congress established the National Science Foundation in 1950, it defined dual responsibilities for the National Science Board. First, the Board was to oversee the activities of, and establish the policies for, the National Science Foundation. Second, the Board was to serve as an advisory body to the President and Congress on national policy issues related to science and engineering and education in science and engineering. For today's testimony, I'd like to focus on our first responsibility, that of oversight of NSF.

-Merit Review

As you all know, NSF-funded research and education projects are selected through competitive, merit-based review. This is often cited as the 'gold standard' for funding research, and is emulated by many countries as they develop and enhance their own scientific research efforts. Expert panels rely on two criteria to evaluate proposals: intellectual merit and broader impacts.

Every year, the Board reviews the outcomes of the agency's merit review process. In the latest report (for FY 2009), NSF made nearly 10,000 awards with Omnibus funding. An additional 4,620 awards were supported with the $3 billion of American Recovery and Reinvestment Act (ARRA) funding. With the ARRA funding, NSF reached a 32 percent funding rate in FY 2009, significantly exceeding the 25 percent funding rate in the previous year.

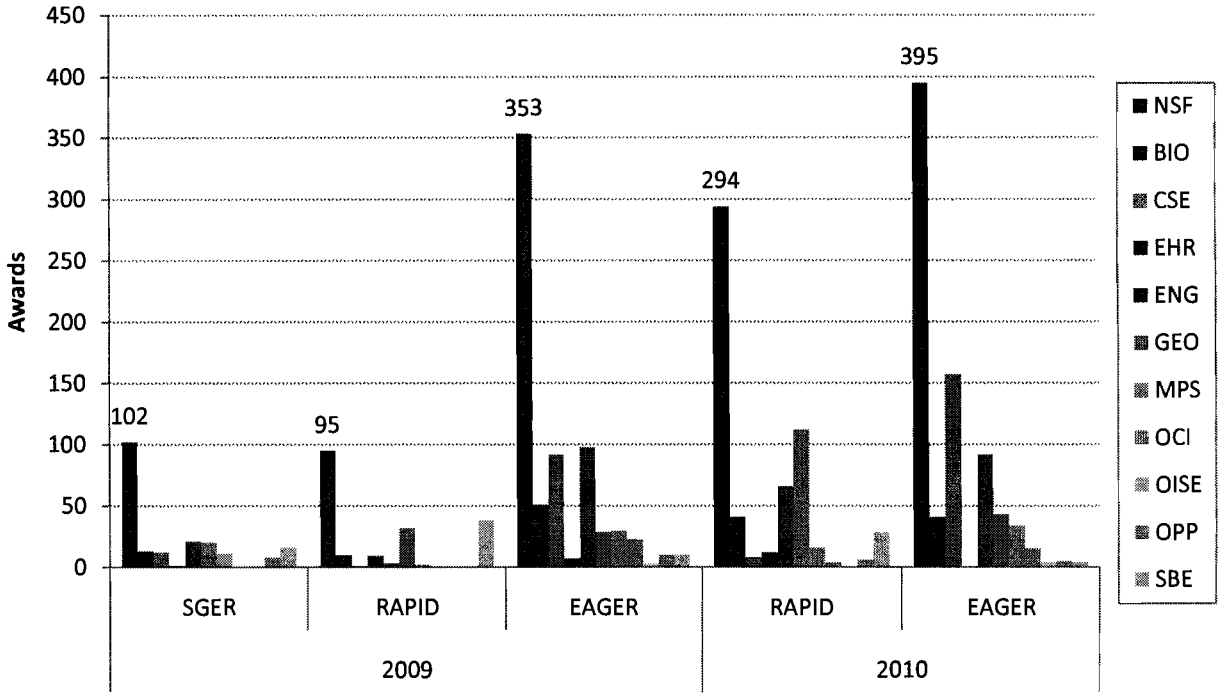
A large number of meritorious proposals are declined each year. Every year, NSF must decline highly rated scientific proposals due to budget limitations. For FY 2009, approximately $1.3 billion in added funding could have supported the many proposals that merited awards. This represents a substantial lost opportunity in terms of both innovation and job creation.

-MREFC

The National Science Board has statutory responsibility for the oversight of activities funded from the Major Research Equipment and Facilities Construction (MREFC) account. These are high profile, high cost activities that are unique, meaning that they must often be designed and developed without a template. In my time on the Board, the agency has made great strides in overseeing both the design and construction of these critical facilities. It is a substantial challenge to prioritize and manage MREFCs, and the Board invests substantial efforts to review scientific needs, construction costs, and operations and maintenance costs in the MREFC process.

Future operating costs for facilities are considered when the Board decides whether to approve construction of a new facility under the MREFC account. Projects are repeatedly assessed throughout the planning and construction period to ensure accurate awareness of projected operating costs. Beginning with the NSF FY 2009 budget request, the NSF Director instituted a "no cost overrun" policy requiring that the project cost estimate include adequate contingency funds to cover all foreseeable risks, and that any cost increases not

Figure 12
SGER, EAGER and RAPID Awards by Directorate



Source: NSF Enterprise Information System 12/15/10.

Additional information on SGERS, RAPIDs, and EAGERs can be found in Appendix 10.

V. The NSF Merit Review Process

A. Merit Review Criteria

In FY 1998, the National Science Board approved the use of the two current NSF merit review criteria, and, in FY 2007, modified the criteria to promote potentially transformative research. The two criteria now in effect are:

Intellectual Merit. What is the intellectual merit of the proposed activity? How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of prior work.) To what extent does the proposed activity suggest and explore creative, original, or potentially transformative concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

Broader Impacts. What are the broader impacts of the proposed activity? How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what

extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

Careful consideration is also given to the following in making funding decisions: 1) *Integration of Research and Education* and 2) *Integrating Diversity into NSF Programs, Projects, and Activities*, as is indicated in the *Grant Proposal Guide*[9]. Programs may have additional review criteria specific to the goals and objectives of the program. All relevant review criteria are described in the program announcement or solicitation.

Effective October 1, 2002, NSF returned without review proposals that failed to separately address both merit review criteria within the Project Summary. The number of proposals returned without review for failing to address both NSB merit review criteria had been steadily decreasing since 2003. There was a departure from that trend in 2008 and 2009, with a slight increase in the number of proposals returned without review for failing to address both merit review criteria. However, in FY 2010 the number of proposals returned without review decreased and the percentage fell to a historical low of less than a quarter of one percent.

Table 11
Proposals Returned Without Review for Failing to Address both Merit Review Criteria

Fiscal Year	2004	2005	2006	2007	2008	2009	2010
Number of Proposals	236	176	134	117	124	147	131
Percent of all Proposals Decisions	0.54%	0.42%	0.32%	0.26%	0.28%	0.33%	0.24%

Source: NSF Enterprise Information System 10/01/10.

B. Transformative Research

The March 2007 NSB report *Enhancing Support of Transformative Research at the National Science Foundation* (NSB 07-32) has been instrumental in informing NSF's efforts to promote and support potentially transformative research. The statement of the Intellectual Merit review criteria was modified effective January 5, 2008 to reference explicitly transformative research. An Important Notice No. 130 was sent on September 24, 2007 from the NSF Director to presidents of universities and colleges and heads of other NSF grantee organizations to inform the community of the changes in the merit review criteria and NSF's effort to promote and support potentially transformative concepts.

All NSF programs encourage and support potentially transformative research proposals. This attention to promoting potentially transformative research proposals has been increased through efforts such as:

[9]The National Science Foundation *Grant Proposal Guide* can be accessed online at: http://www.nsf.gov/pubs/policydocs/pappguide/nsf08_1/gpg_index.jsp.

years. COVs examine the integrity and efficiency of merit review processes and the results from the programmatic investments.

- NSF directorates and offices have advisory committees (comprised of scientists, engineers, and educators). One of the tasks of these advisory committees is to review COV reports and staff responses in order to provide guidance to the Foundation. The COV reports and NSF responses are publically available on the NSF website.

- An external contractor performs an independent verification and validation of the programmatic performance measurements, which include aspects of the merit review process.

Additional information about COVs, and NSF Advisory Committees, is provided in **Appendix 11**.

D. Program Officer Award/Decline Recommendations

As noted above, the narrative comments and summary ratings provided by external reviewers are essential inputs for program officers who formulate award and decline recommendations to NSF senior management.

NSF program officers are experts themselves in the scientific areas that they manage. They have advanced educational training (e.g., a Ph.D. or equivalent credentials) in science or engineering and relevant experience in research, education, and/or administration. They are expected to produce and manage a balanced portfolio of awards that addresses a variety of considerations and objectives. When making funding recommendations, in addition to information contained in the external proposal reviews, NSF program officers evaluate proposals in the larger context of their overall portfolio and consider issues such as:

- Support for potentially transformative advances in a field;
- Novel approaches to significant research questions;
- Capacity building in a new and promising research area;
- Potential impact on the development of human resources and infrastructure;
- NSF core strategies, such as 1) the integration of research and education and 2) broadening participation;
- Achievement of special program objectives and initiatives;
- Other available funding sources; and
- Geographic distribution.

E. Review Information to Proposer and Appeal Process

Proposers receive notification of the award/decline decision, copies of all reviews used in the decision with reviewer-identifying information redacted, and a copy of the panel summary (if panel review was conducted). A "context statement" is also sent that

The Bill of Rights for Scientific Freedom:
1 - The Need for a Scientific Integrity Board

by
Lloyd S. Etheredge [1]

This paper discusses the destroyed scientific integrity of NSF's Economics program that has proven deeply damaging to our country and to the world. It uses the case to illustrate why it is essential that, as a deterrent, the new Bill of Rights for Scientific Freedom include a Scientific Integrity Board with assured public hearings, full disclosure, and accountability.[1]

I. How the National Science Foundation Killed Scientific Integrity: The Republican "Nanny State" Model

For thirty years the Republican "Nanny State" Narrative, described in the attached column by David Brooks, has been untested because a creative array of suppressive devices was deployed by the National Science Foundation and the country's scientific Establishment. For example, concerning Economics: These Republican ideas differ from the assumptions of autonomous, rational individuals with fixed motivations enshrined in the economic models and limited national data systems developed by Kuznets et al. beginning in the 1930s. Since President Reagan's election, Republicans have drawn upon their own scientific ideas about cultural and psychological variables to boost economic performance and remedy a wide range of social problems. While political parties unite diverse groups with many motives, and ideological claims are believed and used for a variety of reasons, a core Republican policy logic has this moral and psychological purpose to restore (in their conception) strong, healthy, self-starting and responsible individuals.

The National Science Foundation/National Science Board system was created, by federal law, to be an independent scientific agency. whose integrity the nation could rely upon. Traditionally, it has

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played an honest-broker role and, as it should, makes awards on the basis of scientific merit as determined by independent peer reviews. However an attack on NSF's scientific independence (and the independence of our nation's research universities) began with a pre-emptive strike by President Reagan's first OMB Director, David Stockman. The story of what happened after he threatened to zero-out all behavioral science funds in the federal budget has been told, in greater detail, elsewhere.[2] For purposes of this letter it is relevant that Stockman - while his political threats would have been legal if he was still a member of Congress - probably violated the law by seeking, as the OMB Director, to suborn the functioning of an independent agency. There has been no legal obligation of the National Science Boards, NSF Directors, the National Academy of Sciences and a national science Establishment to surrender to this *juvenilia*. (If they appear to have been suborned, or decided to surrender rather than fight, it was - as Stockman's lawyer might argue - their choice). [3]

The suppression entailed knowing destruction of the scientific integrity of the NSF Economics program. Here is why: Macroeconomics models are estimated by regression methods applied to time series data. When sets of variables are missing and uncontrolled - for example the cultural and psychological variables and pathways of Republican ideas - the linear regression methods incorrectly distribute variance across the (remaining) measured variables and make mistakes about the size, and perhaps even the arithmetic sign, of coefficients. Every social scientist learns the basic scientific logic: either control for variables statistically or experimentally or you are not doing science: and disciplines that use regression analysis methods always teach that uninterpretable results are caused by missing variables.

By now, at a time of national emergency when a successful GDP/capita and jobs recovery need reliable equations, they are not available; the historical data are unavailable to repair the damage. The conventional wisdom ("more stimulus is better") probably is still true but with the biases already introduced into equations (i.e., weighted by the 120 quarters with missing variables since 1981) the cumulative mathematical effects are beyond the ability of scientists to correct. Instead of rapid learning to improve economic performance and reduce the range of political polarization by evidence and thoughtful analysis, NSF's secret accommodations to a very small and vocal group of zealots made it complicit in Republican mindlessness and blocked the progress in evidence-based democratic decision making that NSF was created to support.

Concerning reliable data: NSF and the National Academy of Sciences obediently imposed a "Not Unless Requested to Do So" rule and, by aggressively silencing policy-relevant social science initiatives, they also killed required quality improvements in standard government data systems.[4] Typically, NSF supports the standard for accurate and reliable scientific measurement that physical scientists seek to achieve. [For example: In August NASA announced the discovery of a Jupiter-sized gas giant planet, TrES-2b (with a surface temperature of 980 degrees Celsius) that is orbiting a star 750 light years away.] But the aggressively obedient NSF neutralized the Committee on National Statistics (NAS/NRC) for which it provides core funding - i.e., the Committee being a standard route to bring scientific requests and standards to the federal data system. And it refused to include funds for innovative, interdisciplinary, and improved R&D data systems and new measures in its infrastructure planning: instead, NSF and the National Science Board covered-up the growing problems in Reports to Congress and in their five-year plans, even after scientists filed formal complaints with the NSF Inspector General and (with support from Dr. Reischauer and others) assured that the suppressive decisions were known, and being made, at the highest levels of NSF and the National Science Board. As the recent front page story by Binyamin Applebaum in the New York Times (August 16, 2011 - attached) illustrates, even the conventional parts of the national scientific data system are unacceptable for scientific and policy work - and the problems are much wider than reported.

For current purposes, may I emphasize four observations from this history:

II. Four Lessons

A.) Physical scientists were to blame. Recently, the social sciences were attacked publicly (by Republicans in Congress) as "not scientific enough" for funding by NSF. In truth, the decisions to jettison the scientific and civic integrity of the SBE sciences were made and enforced by physical scientists who served as NSF Directors, filled almost all of the voting positions on the National Science Board, served as Presidents of the National Academy of Sciences and other positions as *seigneurs* of America's science Establishment.

B.) The real battles across three+ decades have not been with Republicans but were elite battles within the science Establishment and (in the early years) they often were Cambridge-based. It was Frank Press from MIT who came to Washington, became head of the National Academy of Sciences,

and played a leading role to surrender to Republican demands and betray a national trust in the integrity of science. My friend Bruce Mazlish, a psychohistorian and former Dean of Humanities at MIT, believed that suppression was statesmanlike stewardship because the American people "weren't ready" to move beyond the technocratic benefits of science to a world of evidence-based, rational public policy. David Hamburg MD, a distinguished psychiatrist (and formerly a member of Harvard's faculty) was a leader on the other side - for maintaining scientific integrity, the independent role of university-based research and evidence-based social, economic and foreign policy. He organized the off-the-record elite meeting with the wrongdoers that - as it turns out - now establishes *prima facie* evidence of their legal culpability and knowledge that they did not have a consensus for what they were doing to the social sciences and to America, where people would need reliable Economic models in the years ahead. (Today, the same test of scientific integrity is on the desk of NSF's Director, Subra Suresh from MIT.)

Later many others were involved. Donald Kennedy (an ex-President of Stanford) emerged as a key player, using (misusing, in my view) his office as Editor-in-Chief of Science to suppress reporting even as the NSF Economics program unraveled further and scientists urged him to reconsider (his response is enclosed). On the pro-integrity side, the late Carl Sagan published The Demon-Haunted World: Science as a Candle in the Dark (1996) although there is no evidence, on the public record, that the National Science Board considered his thesis about the necessity to fight cultural wars. Robert Reischauer, an economist, an expert and former head of the Congressional Budget Office and one of the seven members of the Harvard Corporation wrote a splendid and refreshingly honest letter (attached) and tried to help.

C.) The long reign of the suppressionists has been deeply destructive. It will take many years to repair national capacities and morale. The suppressive policies have, by now, changed the nature of the SBE sciences and the national civic role of our universities. Few of today's macroeconomists, for example, are concerned with problems of forecasting and public data systems: More than two decades ago economists reached the point of diminishing returns from perpetual re-analysis of the stagnant government datasets and capable people moved on to problems where they could do first-rate science. One of the obvious initiatives for new R&D data systems - measures of hierarchical psychodrama to test part of the Republican Narrative - produced such intense hostility that few other people from

other disciplines were willing to waste their time with similar ideas for lines of transformational research that could be censored as socially disruptive or politically challenging without an evaluation of scientific merits: Across the past two+ decades, at these higher, strategic and program levels I have never seen a single piece of paper evidencing an honest and independent evaluation of scientific merit before the writs of execution and suppression were issued.[5]

D.) <u>These breakdowns were possible, and uncorrected, because of secrecy</u>. At the top, our national scientific Establishment operates with strong social pressures for in-group secrecy. Secrecy, in turn, has allowed and encouraged dysfunctional arrogance, top-down manipulation, evasion, and breakdowns of legal rights and of wider civic and ethical obligations. The combination of egregious scientific secrecy and government (NSF/NSB) secrecy blocked a clear, well-informed, and timely recognition by the victims (social scientists and the American people) about what was being done by people they trusted.

III. <u>Quis Custodiet Ipsos Custodes?</u>

As a deterrent, the scientific community and the nation need an independent, supervisory Scientific Integrity Board. that will operate with open hearings and full public disclosure and accountability. Yes, according to Public Administration theory the National Science Board was supposed to fulfill this role in supervising NSF. And Yes, too - if they want to work hard enough, and have sustained political control in Washington, Republican zealots and lobbyists eventually may be able to bully and suborn even the Scientific Integrity Board. However, the only really critical barrier appears to be the testing of ideological truth claims. And a rapid learning system could make the required breakthroughs before Republican lobbyists organize against the new defensive wall.

The suppressive policies have been continued by the recent Bush-era National Science Board even after the catastrophic failure of models and data systems. By the standard of medical malpractice there was not a great deal of innocence during the era of Republican mindlessness.

The 140+ scientific organizations and universities that signed the recent InterSociety letter to support NSF and the NSF budget did so with the belief that NSF supports scientific research on the basis of scientific merit as determined by peer reviews. This defense was overdrawn and all universities and the national science budget - and America and the world - have paid a very large and growing

price for the unexpected NSF/NSB failures of scientific integrity and stewardship and the coverup. The magnitude of the betrayals and the costs make it one of the extraordinary scandals in the history of American science and higher education; and possibly a source of many teachable lessons.

September, 2011

Enclosures:

- David Brooks, "The Vigorous Virtues," The New York Times, September 1, 2011. Editorial page column.
- Lloyd Etheredge, "President Reagan's Counseling" from Political Psychology 5:4 (1984), pp. 737-740.
- Appeal from Lloyd Etheredge to Duncan Luce, co-Chair of the National Academy of Sciences *en masse* restructuring project for the next decade, re breakdowns of scientific integrity for economics research and the future of non-learning. July 31, 1992.
- Letter from Robert Reischauer, December 23, 2002. Dr. Reischauer, an economist, was part head of the Congressional Budget Office and one of seven members of the Harvard Corporation.
- Letter from Donald Kennedy, Editor-in-Chief of Science, declining to hire an investigative reporter to inform AAAS members and other readers of the sharp intra-Establishment disagreements about abandoning scientific integrity (the Hamburg/Lederberg/Carnegie Commission meeting, that he already knew about). Even in the face of worsening performance of economic models. August 4, 2006
- Lloyd Etheredge, "Better Science and Economic Recovery: Four Areas Where Rapid Improvement is Possible," with a cover letter of August 9, 2011 to Dr. Holdren and Lander - Co-Chairs, PCAST. [The supporting letter of Robert Reischauer of December 23, 2002 also is an attachment to this letter.]
- Binyamin Applebaum, "On Economy, Raw Data Gets a Grain of Salt," The New York Times, August 16, 2011, p. A1.

Endnotes

1. Economics is not the only NSF-caused stagnation, but it is easiest to demonstrate. Alongside killing the scientific integrity and learning rate of Economics, the scientific Establishment also betrayed the legacy of such extraordinary social scientists as Harold Lasswell and Donald Campbell. Their traditions were killed without regard to the scientific merits and potential value of analyzing the full range of new Republican policy ideas as informative experiments for rapid learning. A good dustup about the nature of reality would have been an extraordinary vehicle for undergraduate teaching.

2. For example, the background filing with the Department of Justice, "Breach of Contract, Conspiracy, Fraud, and Coverups Affecting NSF Programs," (September 2007). Tab 3 includes the earlier background filing for the NSF Inspector General, " A Breakdown Crafted by Silences" (2002). Reference copies are online at www.policyscience.net at II. A. I wrote the DOJ filing after incomplete investigations by the NSF Inspector General were conducted by a mid-level investigator who was not an economist or expert in social science.

3. The national scientific Establishment and NSF probably violated both legal and ethical principles. They became involved, without legal authority, in a conspiracy to violate the rights of individual scientists and grant applicants to honest evaluations based on scientific merit. An analogy would be the compliant hanging of innocent Black defendants by Southern judges and juries with the rationale that the defendants would be lynched by a mob anyway.

4. Another dimension of NSF data problems is that the world has changed, which should require new and competing R&D Economic models and new R&D interdisciplinary data systems funded by NSF (that have not been available). For example if a new international economic paradigm of predator-prey models (based on the Lotka-Volterra equations) is tested and accurate, the same group of actors will try to continue and repeat their (i.e., from their perspective) success. From the late 1970s until 2003 there were 117 systemic banking crises in 93 countries and in 27 of the earlier financial crises in the world system the national taxpayers were stuck with public debt equal to or greater than 10% of GDP. The new, competing paradigm is that we are not observing old-fashioned "irrational exuberance" but a growing *modus operandi* of alpha predators in a system with asymmetries of brainpower and wealth. It is another paradigm-transformative idea worth testing.

Testing the "Nanny State" model is only the simple beginning of the challenges that our NSF and the National Science Board have to meet if they want transformative science.

5. The last round before the catastrophic failure is at Tab 2 at "NSF Recommendations: Fresh Thinking for the 21st Century. Selected Recommendations for NSF's Five-Year Plan (2006-2011)," March 2007. Online at *ibid.* An FOIA filing indicated that the case was never circulated for evaluation of the scientific merits of taking corrective action during 2006-2011.

The new hierarchical psychodrama/neuroscience paradigm and measures for testing ideologi-

cal truth claims are an independent dimension of the story and outside the focus of this discussion. The new paradigm was vetted with the Group for the Advancement of Psychiatry when I was Ittelson Consultant to that organization: the connect-the-dots mappings across disciplines and narratives are in several online documents on the Website: e.g., "Wisdom and Public Policy" in Robert Sternberg and Jennifer Jordan (Eds.) A Handbook of Wisdom: Psychological Perspectives (NY: Cambridge University Press, 2005), pp. 312-314 and the diagram "In Plato's Cave" and pp. 319-321, online (ibid.) A further set of applications and predictions for rapid learning and potential breakthroughs about a range of societal problems, integrating findings by Robert Sapolsky, were outlined for PCAST in the second filings of Recapitalization ideas from 2010, also at II. A.

The hierarchical paradigm really is worth testing: intense resistance and evasion can suggest, to a psychologist, that we are observing a key area for learning.

The New York Times. September 1, 2011

The Vigorous Virtues

By DAVID BROOKS

There's a specter haunting American politics: national decline. Is America on the way down, and, if so, what can be done about it?

The Republicans, and Rick Perry in particular, have a reasonably strong story to tell about decline. America became great, they explain, because its citizens possessed certain vigorous virtues: self-reliance, personal responsibility, industriousness and a passion for freedom.

But, over the years, government has grown and undermined these virtues. Wall Street financiers no longer have to behave prudently because they know government will bail them out. Middle-class families no longer have to practice thrift because they know they can use government to force future generations to pay for their retirements. Dads no longer have to marry the women they impregnate because government will step in and provide support.

Moreover, a growing government sucked resources away from the most productive parts of the economy — innovators, entrepreneurs and workers — and redirected it to the most politically connected parts. The byzantine tax code and regulatory state has clogged the arteries of American dynamism.

The current task, therefore, is, as Rick Perry says, to make the government "inconsequential" in people's lives — to pare back the state to revive personal responsibility and private initiative. There's much truth to this narrative. Stable societies are breeding grounds for interest groups. Over time, these interest groups use government to establish sinecures for themselves, which gradually strangle the economy they are built on — like parasitic vines around a tree.

Yet as great as the need is to streamline, reform and prune the state, that will not be enough to restore America's vigorous virtues. This is where current Republican orthodoxy is necessary but

insufficient. There are certain tasks ahead that cannot be addressed simply by getting government out of the way.

In the first place, there is the need to rebuild America's human capital. The United States became the wealthiest nation on earth primarily because Americans were the best educated. That advantage has entirely eroded over the past 30 years. It will take an active government to reverse this stagnation — from prenatal and early childhood education straight up through adult technical training and investments in scientific and other research. If government is "inconsequential" in this sphere, then continued American decline is inevitable.

Then there are the long-term structural problems plaguing the economy. There's strong evidence to suggest that the rate of technological innovation has been slowing down. In addition, America is producing fewer business start-ups. Job creation was dismal even in the seven years before the recession, when taxes were low and Republicans ran the regulatory agencies. As economist Michael Spence has argued, nearly all of the job growth over the past 20 years has been in sectors where American workers don't have to compete with workers overseas.

Meanwhile, middle-class wages have been stagnant for a generation. Inequality is rising, and society is stratifying. Americans are less likely to move in search of opportunity. Social mobility has been flat for decades, and American social mobility is no better than European social mobility.

Some of these problems are exacerbated by government regulations and could be eased if government pulled back. But most of them have nothing to do with government and are related to globalization, an aging society, cultural trends and the nature of technological change.

Republicans have done almost nothing to grapple with and address these deeper structural problems. Tackling them means shifting America's economic model — tilting the playing field away from consumption toward production; away from entitlement spending and more toward investment in infrastructure, skills and technology; mitigating those forces that concentrate wealth and nurturing instead a broad-based opportunity society.

These shifts cannot be done by government alone, but they can't be done without leadership from government. Just as the Washington and Lincoln administrations actively nurtured an industrial economy, so some future American administration will have to nurture a globalized producer society. Just as F.D.R. created a welfare model for the 20th century, some future administration will have to actively champion a sustainable welfare model for this one.

Finally, there is the problem of the social fabric. Segmented societies do not thrive, nor do ones, like ours, with diminishing social trust. Nanny-state government may have helped undermine personal responsibility and the social fabric, but that doesn't mean the older habits and arrangements will magically regrow simply by reducing government's role. For example, there has been a tragic rise in single parenthood, across all ethnic groups, but family structures won't spontaneously regenerate without some serious activism, from both religious and community groups and government agencies.

In short, the current Republican policy of negativism — cut, cut cut — is not enough. To restore the vigorous virtues, the nanny state will have to be cut back, but the instigator state will have to be built up. That's the only way to ward off national decline.

PRESIDENT REAGAN'S COUNSELING

May, 1984

Lloyd S. Etheredge

[Research Note published in Political Psychology, 5:4 (1984), pp. 737 - 740.]

For decades, economic policy has been the territory of economists, governed by their idea that we are a nation of rational choices. President Reagan has changed the assumptions. He is using ideas familiar to psychoanalysts and clinical psychologists to diagnose the problems of the American economy and design a course of treatment. He has posed a set of problems which political psychologists can solve with great benefit to the intelligence of national policy.

The President's idea is simple. He says our economy's lack of vitality is produced because government has become a powerful, substantial presence "above" us here in America. Over the past thirty years as, in our national imagination, government became "bigger," we grew subjectively smaller to develop a national dependence. There was a "zero-sum" effect on each person's mind: as "it" (government) assumed more responsibility in national life, "we" (the people) took less. The work ethic disintegrated; productivity increases stopped; the economy stalled.

The President's economic policy follows logically. It is intellectually serious and urgent: he must provide national psychotherapy for a depressed, passive nation that expects its therapist to have a prompt and magical solution.

To effect the change he desires, our President-psychiatrist has designed a national psychodrama to inspire us, to create open space, and to reduce our idealized illusions. He is warm and supportive. He is cutting taxes and expenditures to make government above us "smaller." It may not be a cure we like, and there will be painful withdrawal symptoms, but we must again take responsibility for our own lives.

From personal experience, Dr. Reagan knows he is right. The dire predictions of his theory, made thirty years ago, appear correct to him. And in his autobiography, Where's the Rest of Me?, he sketches how he, too, was once dependent, in his case on the Hollywood studio system. He was well paid but unhappy, reading scripts written by others, never getting the leading dramatic roles he wanted to play. But then he became more

assertive, struck out on his own. Once he became his own man, life started to work for him. He made a successful

second marriage. Speaking his own ideas, he was elected Governor of California. Now, he has the leading role in the country.

Other aspects of the President's life and experience confirm the same intuitive truth. He enjoys exhilaration, and a sense of freedom, when he rides the open range on horseback, the experience of the open range for free entrepreneurship he has told us we will regain in our national psychology by cutting back that "big government" in the sky. When he escapes to California from Washington and clears brush on his ranch, he feels recharged. He knows we will feel that way too, as the American Congress "stays the course" to effect the psychological transformation he wants.

To be sure, this is a closed system of beliefs. Evidence is always interpreted in the light of what the President calls his "basic principles." If the economic recovery is slow, it only means problems of dependency and addiction to big government are deep in our national psyche. So he is under an even greater obligation to persevere until we regain our independence and self-confidence and restart the economy. He has no choice.

From the President's perspective there is likely a second cause of a slow recovery, a cause psychoanalysts and clinical psychologists often cite: we are resisting. To an unprecedented degree American news media refuse to discuss a national problem in the language a President uses. He has been stonewalled. CBS News runs nightly news stories about the sufferings imposed by Reaganomics but has not yet discussed the real national problem, our psychology of dependency. It is as though the Eastern liberal news media are so addicted to the drama of an activist government, so psychologically dependent, so accustomed to demand that the President do something, that they will never admit even the possibility he could be profoundly right.

If Reagan is right, these skeptics slow the cure. The President can cut taxes and expenditures; these are actions in physical reality. But the stakes are psychological reality. For the therapy to work we must agree - that the diagnosis of dependency is right, that big government is receding, that the therapist knows what he is doing.

It is also possible our actor-President is wrong. A powerful bond to government may be true of only 2% of the population: actors, intellectuals, reporters, the people who give money to political causes or end up in Washington. How can we tell?

The President has profoundly challenged the discipline of economics. His idea about how the economy works does not come from the hundreds of complex equations of their mathematical models. The basic problem, in his view, is simple: the economy is deeply political; we orient ourselves dependently toward government in a larger-than-life drama.

Lacking objective evidence, we now are adrift and debates about economic policy are decoupled, without intellectual integrity. Administration economists have given no evidence to support the intuitive psychological ideas about the economy the President uses to set policy. They have developed no national indicators for the substantiality of images of a "big" government in the sky, for changes in achievement motivation, for the alleged zero-sum allocations of responsibility.

Now, as we "stay the course," we navigate blind, on faith alone. Congress has applied no rules of evidence. The Report of the U.S. government's Council of Economic Advisers is intellectually irrelevant; it would be rejected as a test of the President's theories by any psychology department.

If the President is right, good national psychological indicators will tell us. And, refining our understanding, they might improve the President's policy. John F. Kennedy cut taxes and the economy leaped ahead - but Kennedy also talked about achievement - a New Frontier, a man on the moon by 1970. If psychodrama is needed, perhaps these are

the themes to emphasize.

The President is not speaking in metaphors. He believes he is talking about our reality: solid, strong constituents of individual's imagination so powerful in their effects as to destroy the health of a multi-trillion dollar economy and our national spirit. His theories reflect ideas many psychologists have voiced seriously in the past: psychoanalysts have told us that, via transference, many people related to government authority, in our "mass psychology," the way as children they regarded their magically powerful parents; David McClelland of Harvard explained the economic rise and fall of civilizations by changes in the imaginations of citizens.

Currently, empirical evidence bearing upon the President's fundamental assumption is indirect and inconsistent. Self-report measures seem to deny his model: Americans say they blame themselves for economic hardship. Yet macro-level studies of election results, and individual-difference measures of self-interested and "socio-tropic" voting suggest Reagan is correct and responsibility for management of the economy is assigned to the party in power.

Such measures of attitudes and voting are open to different interpretations as reflecting either rational and secular or psychodramatic processes. Alone, they cannot dispel the fog. The deeper question is the psychological nature of American government, and what is needed is that our public debates begin to be informed by evidence, from appropriate, clinically-derived measures, of the location and substance of citizens' experience of government.

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July 31, 1992

Dr. Duncan Luce
School of Social Sciences
University of CA, Irvine
Irvine, CA 92717

Dear Dr. Luce:

Thank you for your two letters and advice.

My basic criticism of the National Academy of Sciences arises because your panels serve key gatekeeper roles. They are believed to give the best advice of our most distinguished scientists on such matters as the creation of new national indicators and funding priorities for behavioral science. They give a degree of endorsement - and political protection - that can shape the decisions of foundations and government agencies. Any new line of investigation that depends upon new data series and significant funds to challenge orthodoxy - e.g., to evaluate and learn lessons from such quasi-experiments as Reaganomics - is dead without this support, especially as your panels and commissions give preferential endorsement for government and foundation funding to other (apolitical, to use your adjective) priorities.

I think we agree that your organization does not truly represent the best scientific advice of its members. Surely, as scientists, most of your members believe the Republican experiments to alter the modal personality of the American people and foster economic growth (reduce dependency, increase self-confidence and the work ethic, etc.) should be evaluated by the development of appropriate indicators.

I appreciate your organization's preference to avoid unnecessary political controversy. But there are creative ways to proceed, just as Surgeon Generals have moved, steadily but incrementally, to develop scientific studies concerning the effects of smoking on health. Or you could be oblique about raising critical questions, as in your new and inspired edited collection by Breslauer and Tetlock, Learning in U.S. and Soviet Foreign Policy.

I still think my original suggestion - of a sponsored competition to design new indicators and Michelson-Morley tests of a full range of untested ideological ideas - would be good for the country and science, fun, greeted with enthusiasm, and produce sufficiently long-term arguments about construct validity, data interpretation (etc.) to prevent a sharp and definitive political

challenge; and that there is only a low probability that John Ferejohn (for example) would be sent to the guillotine if he directed the project for the National Academy.

A team assembled by John Ferejohn probably could nail these questions by the end of the decade. I believe it would be a wise investment, and I hope you and other national leaders in the social sciences can bring it about.

Political independence - telling the truth without fear or favor, letting the chips fall where they may - will be healthier for science and the nation. A politically-neutered National Academy of Sciences is unworthy of free men and women.

May I suggest a nightmare scenario? Perhaps, all along, Congressional leaders and the public have truly wanted the best forthright, honest, and politically-independent advice of our best scientists? As a nation we go to great length to support the intellectual integrity of scientific institutions. The members of the Academy have academic tenure and are elected for life. Its institutional integrity is guarded by mechanisms stronger than we provide even our judges - rights to elect your members and officers. The Academy may acquire funds for projects, and its advising role, without a requirement to rely upon government appropriations. Yet our best political and social safeguards have failed. And perhaps, after a decade, the leaders of Congress, the public, and the social science community (and even President Bush) deeply wish that you had played a more independent role.

Congress cannot require honesty and forthrightness from the Academy. But if Congress wishes independent scientific advice, perhaps this entire matter needs to be reviewed by its oversight committees. Not to assign blame for the fierce price the nation may have paid for a decade of unnecessary ignorance and self-created scientific silence, but to consider what changes might assure intellectually independent advice and a brighter decade ahead, with improved economic growth.

I hope we have a chance to meet in the future, and under less contentious circumstances.

Yours truly,

/s/

(Dr.) Lloyd S. Etheredge

cc: Kenneth Arrow
John Ferejohn
James Q. Wilson

THE URBAN INSTITUTE 2100 M STREET, N.W. / WASHINGTON D.C. 20037

ROBERT D. REISCHAUER
President

Direct Dial: 202-261-5400
Fax: 202-223-1335
E-mail: RReischa@ui.urban.org

December 23, 2002

Dr. Lloyd S. Etheredge, Director
Government Learning Project
The Policy Sciences Center, Inc.
P. O. Box 208215
New Haven, CT 06520-8215

Dear Dr. Etheredge:

Thank you for your letter and thoughtful attachment. I am in complete agreement that the economic data we collect has significant deficiencies that limit our ability to understand the economy's problems and chart future policy.

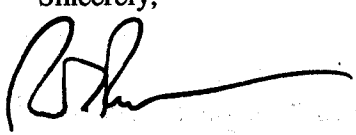
We don't collect some information that is needed and gather much that we could do without. We collect other data in insufficient detail and almost always take too long to release the data for it to be useful in policy decisions.

As you know better than I, there are many reasons for this situation. What we collect and how we collect it reflects the forces at play in the first half of the last century and those forces do not want to give anything up. Congress has little interest in devoting more scarce budget resources to collect new and better information. Few economists who use the data appreciate its limitations. They have been raised on certain data sets and treat them as if they are part of the underlying environment, not subject to change. They put a premium on continuity and don't want discontinuity in the data sets they know and use.

I don't think I would be as critical as you are about CNSTAT/NCR. I don't think they would have much of an impact even if they had done the studies and made the recommendations you think warranted. Nor do I think universities (Yale or Harvard) or the Fed could make much of a dent in the problem. Rather, I think a presidential or congressional study commission is called for—one with a clear mandate and a promise that added resources will be devoted to strengthening the statistical system based on the commission's report. Unfortunately, the prospects for such an initiative rising to the top of policymakers' lists of things to do is very, very low.

Nevertheless, I wish you well in your efforts.

Sincerely,



Science
AAAS

August 4, 2006

Dr. Lloyd Etheredge, Director
Government Learning Project
The Policy Sciences Center, Inc.
127 Wall Street, Room 232
P.O. Box 208215
New Haven, CT 06520-8215

Dear Dr. Etheredge,

Thanks for your letter of July 11 and for several ~~editions~~ e-mails that have followed. I've known for some time, both because of my service on Dave Hamburg's Commission and because you've written me from time to time, of your concern about the social, behavioral, and economic sciences at NSF and at the Academies. I don't think this is an area in which the AAAS, through its elected Board of Directors is likely to take a position. On the other hand, the News department at *Science* is always interested in issues relating to how the scientific community is served is being treated by government or by other entities. I'm forwarding a copy of your letter to Colin Norman, the news director, so that his staff can be made aware of this concern.

With best regards,

Sincerely yours,

Donald Kennedy
Editor-in-Chief

DK/jw

Headquarters
1200 New York Avenue, NW, Washington, DC 20005 USA Tel: +1 202 326 6550 Fax: +1 202 289 7562
Europe Office
Bateman House, 82-88 Hills Road, Cambridge CB2 1LQ, UK Tel: +44 1223 326500 Fax: +44 1223 326501
Published by the American Association for the Advancement of Science

THE POLICY SCIENCES CENTER, INC.

Project Director: DR. LLOYD ETHEREDGE
7106 Bells Mill Rd.
Bethesda, MD 20817-1204
Tel: (301)-365-5241
E-mail: lloyd.etheredge@policyscience.net

August 9, 2011

Drs. John Holdren and Eric Lander, Co-Chairs
Presidents Council of Advisers on Science and Technology
725 17th St., NW - Room 5228
Washington, DC 20502

Dear Dr. Holdren and Dr. Lander:

Economics is an unreliable science, but we have the brainpower and technology to do much better. I recommend that you convene a high-level panel of distinguished scientists and experienced practitioners to review and improve upon the unreliability of the models and data systems used by Dr. Summers et al. to design our economic recovery package.

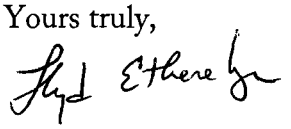
When the space shuttle Challenger exploded, or when a bridge collapses, we know the proper scientific response.

The panel will be tasked to answer the question: Where did the science go wrong and how can we do better? The job will have two components: 1.) an urgent assignment to design and deploy R&D data systems to learn the sources and causes of scientific unreliability in the recovery process equations; 2.) a long term assignment to develop an R&D rapid learning system to improve models and data systems as a foundation to raise the rate of GDP/capita (by 1%/year) above the pre-crisis baseline.

I attach a discussion of four areas where rapid scientific improvement is possible.

This is the second collapse of a bridge using the same models, methods, materials, and consulting engineers. The science - generously supported for many decades by NSF - also was supposed to be sufficiently in contact with reality to keep us from awakening to discover the worst global economic crisis since the Depression. We can stipulate that Dr. Summers et al. were brilliant and did the best that they could: we should test the hypotheses that the underlying science should be improved.

Yours truly,



Dr. Lloyd S. Etheredge

August 9, 2011

To: Drs. John Holdren and Eric Lander, Co-Chairs - PCAST

From: Dr. Lloyd Etheredge - Project Director [1]

Re: Better Science and Economic Recovery: Four Areas Where Rapid Improvement is Possible

PCAST members may believe that somewhere - for example, at the National Science Foundation - academic scientists are being funded for creative, multi-disciplinary work that quietly, but continually, is improving macroeconomic models and data systems as quickly as possible. This image is false. The NSF system is dysfunctional. If there were to be an independent, blame-oriented panel it would quickly discover a legacy of blunt and angry and ignored communications, including by former CEA Chairs from both Democratic and Republican Administrations (who questioned whether there was something mentally wrong with NSF's Republican-era leadership). The scientific warnings extend back almost a decade to the enclosed letter from Bob Reischauer, former head of CBO, who began to warn in the late 1990s that older forecasting models, data systems, and methods were scientifically, eroding. In no other serious scientific field would an NSF Director be unresponsive to such a problem. The current head of the Social, Behavioral, and Economics Directorate - a legacy from the Republican/Bement period - is a historian experienced in light analysis of demographic data and with other agendas and interests.

Here are ideas in four areas where we can do better, and a high-level panel can get us moving:

1.) Coefficient estimation. We need faster and better ways to estimate coefficients. Traditionally, national datasets were expensive and economists accepted quarterly data. However, since the profession estimates coefficients by regression equations this method updates too slowly when the world is changing.

---

[1] Government Learning Project, Policy Sciences Center. Contact: lloyd.etheredge@policyscience.net; 301-365-5241 (v). URL: www.policyscience.net

2.) Better and Faster Data. Several retrospective studies have identified that the greatest source of error in government macroeconomic forecasting arises from an astonishingly large degree of unreliability and error that are typical of the government's own data that are supplied for the forecast. Government economic data evolve across a cycle of estimates and revisions that can extend up to three years. In the current recovery, the latest revisions show a typically large error (20%, 5% drop v. 4% drop) in starting numbers that informed the design of the recovery package.

We should be more outraged about this component of unreliable science. Today, the banking system uses electronic transactions and clears most of the transactions of the entire economy reliably within a few days. Wal-Mart has terabytes of data and sales results from all stores and products, worldwide, updated every 24 hours. We can do better. We need an independent evaluation and a high-level panel to provide a roadmap and priorities and to tell people to get moving.

3.) The Psychology (etc.) of Downturns and Recoveries

Much of econometric forecasting is designed to estimate normal periods and trends: the methods are not good at forecasting turning points, which is when new measures and refined analysis methods must be designed and deployed quickly to shape public policies. We need to set aside the hope that recessions are behind us and develop, instead, emergency measures that can be deployed to understand the psychology and other features of the decline and recovery processes. We resort to broad, general psychological terms ("confidence") and guess (probably correctly) that fiscal stimulus should be high and interest rates low. But even if confidence is the key term, we do not yet have a good theoretical model of how to do better than we are doing. The null hypothesis is that we are doing the best that we can and that nothing will make much difference - but this hypothesis and state of mind needs to be challenged.

A related point: We do not have a large N of these recessions/catastrophies. We should be capturing a lot more data that could help us, and other countries worldwide, in the future.

4.) Double-Value Recoveries

The Obama Administration has provided bold leadership to think about double-value recovery policies - how should a stimulus package be structured to buy new infrastructure investments with

extra long-term benefits? The Journal of Economic Literature has a recent review article on productivity research which suggests another path to a better and faster recovery. There appear to be large variations in the productivity of firms in each business category: a plant at the 90th percentile in each category produced twice the output, for the same measured inputs, as a plant at the 10th percentile. [2] This suggests that, with timely information about best practices (which can be available) many companies that now have growing profits and retained earnings could be guided to make new, smart investments - from these funds or by borrowing at the very low interest rates - that both stimulate the economy and increase their own performance in the long run. A modest amount of additional data could be a catalyst to an exciting new dimension for the recovery process. [Jack Grayson would be an excellent consultant: his www.apqc.org initiative is mapping best practices across industries.] The panel can acquire the additional data that it needs and establish priorities for a rapid outreach program that is future oriented, confident, exciting and about creating a better future for each company.

Drawing Upon Financial Sector and Other Expertise

There are several reasons to ask leading scientists from several fields and practitioners to constitute this panel, rather than academic economists alone. Three brief comments:

1.) Scientists in other fields, like meteorology or biology, are accustomed to modeling complex, adaptive systems with even more advanced models and equations than are standard in macroeconomic forecasting. Scientists in these fields also will be shocked and outraged at the unreliability and lags in acquiring data and will be a strong voice to upgrade data systems quickly.

2.) Most academic economists left the field of macro-economic forecasting years ago. Government datasets have been stagnant and eroding in a changing world: there were just too many diminishing returns to continual reanalysis and - a much longer story - to fighting with an uninterested NSF and others. You will find fewer bold and creative specialists to recruit from the academic world than you might imagine: Dr. Summers did the best that he could.

---

[2] Chad Syverson, "What Determines Productivity?" (June, 2011). The same mechanisms (+ low current interest rates) could stimulate recovery globally: Syverson reports data of even larger variations (e.g., 5:1) for China and India.

3.) We have brilliant people in the financial sector, with a fierce and rigorous respect for data - and able to make billions of dollars in highly competitive markets. We ought to ask them what additional data, processed how quickly, they would want if they were designing a state-of-the-art data and decision making system for a maximum-rationality national policy? Dr. Shaw may be able to advise you about their potential interest. It could be a brilliant package: Nobody will object to abundant financial-sector billionaires if their brainpower also is deployed on the side of speeding and sustaining GDP growth for everyone; and they probably will benefit from raising GDP/capita growth, in the US and worldwide, by 1% above the pre-crisis baseline, too.

Attachment: Letter from Bob Reischauer

THE URBAN INSTITUTE 2100 M STREET, N.W. / WASHINGTON D.C. 20037

ROBERT D. REISCHAUER
President

Direct Dial: 202-261-5400
Fax: 202-223-1335
E-mail: RReischa@ui.urban.org

December 23, 2002

Dr. Lloyd S. Etheredge, Director
Government Learning Project
The Policy Sciences Center, Inc.
P. O. Box 208215
New Haven, CT 06520-8215

Dear Dr. Etheredge:

Thank you for your letter and thoughtful attachment. I am in complete agreement that the economic data we collect has significant deficiencies that limit our ability to understand the economy's problems and chart future policy.

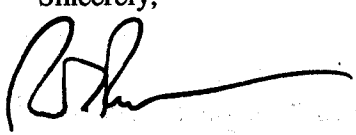
We don't collect some information that is needed and gather much that we could do without. We collect other data in insufficient detail and almost always take too long to release the data for it to be useful in policy decisions.

As you know better than I, there are many reasons for this situation. What we collect and how we collect it reflects the forces at play in the first half of the last century and those forces do not want to give anything up. Congress has little interest in devoting more scarce budget resources to collect new and better information. Few economists who use the data appreciate its limitations. They have been raised on certain data sets and treat them as if they are part of the underlying environment, not subject to change. They put a premium on continuity and don't want discontinuity in the data sets they know and use.

I don't think I would be as critical as you are about CNSTAT/NCR. I don't think they would have much of an impact even if they had done the studies and made the recommendations you think warranted. Nor do I think universities (Yale or Harvard) or the Fed could make much of a dent in the problem. Rather, I think a presidential or congressional study commission is called for—one with a clear mandate and a promise that added resources will be devoted to strengthening the statistical system based on the commission's report. Unfortunately, the prospects for such an initiative rising to the top of policymakers' lists of things to do is very, very low.

Nevertheless, I wish you well in your efforts.

Sincerely,



August 16, 2011.NYTimes, p. A1.

On Economy, Raw Data Gets a Grain of Salt

By BINYAMIN APPELBAUM

WASHINGTON — When the government announced in April that the economy had grown at a moderate annual pace of 1.8 percent in the first quarter, politicians and investors saw evidence that the nation was continuing its recovery from the depths of the financial crisis. The White House called the news "encouraging" and the stock market extended its bull run.

Three months later, the government announced a small change. The economy, it said, actually had expanded at a pace of only 0.4 percent in the first quarter.

Instead of chugging along in reasonable health, the United States had been hovering on the brink of a double-dip recession.

How can such an important number change so drastically? The answer in this case is surprisingly simple: the Bureau of Economic Analysis, charged with crunching the numbers, concluded that it had underestimated the value of vehicles sitting at dealerships and the nation's spending on imported oil.

More broadly, politicians and investors are placing a great deal of weight on a crude and rough estimate that has never been particularly reliable.

"People want the best information that we have right now. But people need to understand that the best information that we have right now isn't necessarily very informative," said Tara M. Sinclair, an assistant professor of economics and international affairs at George Washington University. "It's just the best information that we have."

The growth rate that the government announces roughly one month after the end of each quarter — news much anticipated in Washington and on Wall Street — has been off the mark over the period from 1983 to 2009 by an average of 1.3 percentage points, compared with more fully analyzed figures released years later, according to federal data.

The second and third estimates, announced at subsequent one-month intervals, are no more

reliable. The first quarter this year offers a typical example. The government estimated the annual growth rate at 1.8 percent in May and 1.9 percent in June before issuing its most recent estimate of 0.4 percent.

Perhaps more important, the government underestimated the depth of the recession by a wide margin, initially calculating that the economy contracted by an annual rate of 3.8 percent in the last quarter of 2008. It now estimates the contraction rate at 8.9 percent. Instead of an annual growth rate of 0.2 percent from the fourth quarter of 2007 through the first quarter of 2011, the government now estimates that the economy contracted at an annual rate of 0.2 percent during that period.

The basic problem is easy to understand: More than half of the ingredients in the first estimate are based in whole or in part on projections from past months. The government doesn't actually know how much people spend on their cellphone bills or how much companies spend on construction. It simply makes an educated guess based on past spending. Even in the third estimate, 22 percent of the data still comes from projections.

If basic assumptions start changing rapidly — business failures during a recession, start-ups during a recovery — the estimates can quickly lose touch with economic reality.

"When we most want timely information is when they're least able to give it to us," said Professor Sinclair. "That's exactly when those historical patterns are breaking down."

The Bureau of Economic Analysis, an arm of the Commerce Department, makes some efforts to warn users about these problems. It emphasizes transparency and is uncommonly open to public questions. It says it provides a valuable public service, but that the data reflects only the best available information. But policy makers, investors and the public continue to treat the data as highly significant.

"These are really not much more than educated guesses and yet the marketplace puts enormous weight on them because financial markets are high-frequency trading places based on immediate data," said Madeline Schnapp, director of macroeconomic research at TrimTabs Investment Research.

A growing number of economists say that the government should shift its approach to measuring growth. The current system emphasizes data on spending, but the bureau also collects data

on income. In theory the two should match perfectly — a penny spent is a penny earned by someone else. But estimates of the two measures can diverge widely, particularly in the short term, and a body of recent research suggests that the income estimates are more accurate.

Justin Wolfers, a professor of business and public policy at the Wharton School of the University of Pennsylvania, publicly predicted earlier this summer that the government would sharply reduce its estimate of first-quarter growth, simply by looking at the income estimate buried inside the bureau's initial release.

The income data also captured the depth of the recession much sooner.

"It is appalling how little attention we economists pay to measurement issues," Professor Wolfers said. "The expenditure data looked bad but not dreadful. The income data was dreadful. And it subsequently turned out the absence of urgency among policy makers was largely a result of looking at faulty data."

Professor Wolfers said that in his native Australia, the government estimates growth by averaging the two techniques with a third, related approach. Private firms use similar methods.

Officials at the bureau have said that measuring expenditures has proved to be a more reliable methodology. The estimates are very accurate in one important respect: it is exceedingly rare for the bureau to estimate that the economy is shrinking when it is actually growing, or that it is growing when it is actually shrinking. The bureau meets that standard 98 percent of the time.

What went wrong in the first quarter?

The largest change was because of an annual event. The Census Bureau completed an estimate of the value of vehicles awaiting sale in 2010, based on data collected directly from dealers.

Until July, the bureau had relied on an estimate from a private company, Ward's, which counts vehicles but estimates their values. Based on that data, the bureau estimated that inventories had declined by $30.3 billion in the fourth quarter as sales outpaced the arrival of new cars.

Last month, based on new data, it concluded that inventories fell by only $17.9 billion.

The bureau estimates that inventories shrank by an even smaller amount in the first quarter —

although it won't get equally accurate data until next July — but the effect of the revision was to reduce the difference between the two quarters, and thus to reduce the rate of growth.

The bureau estimates that this change alone is responsible for nearly half the difference between its initial estimate of 1.8 percent first-quarter growth and its current 0.4 percent estimate.

A second major change involves the value of imported oil. The bureau announced a permanent change to its methodology last month to improve the way that it calculates the value of oil, and it concluded that spending on imported oil was higher than it had originally estimated. The details are byzantine but the result is clear enough: roughly 0.5 percentage points of growth vanished.

From: dscepki@aol.com [mailto:dscepki@aol.com]
Sent: Monday, October 03, 2011 2:49 PM
To: Stine, Deborah D.
Subject: Fwd: From: Dorothy Szczepkowski, Streamwood, IL. RE: U.S. Patent Number 6,587,720B2, Jul. 1, 2003, "Apparatus for Audibly Communicating Speech Using the RF Hearing Effect

Dorothy Szczepkowski
[redacted]

October 3, 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
[redacted]
Washington, D.C. 20502

Dear Dr. Stine:

On August 8, 2011, I forwarded to you **U.S. Patent Number 4877027, "Microwave Technology for Making People Hear Voices in Head."** Today, I am forwarding to you **U.S. Patent Number 6, 587,729 B2, Jul. 1, 2003, "Apparatus for Audibly Communicating Speech Using the Radio Frequency Hearing Effect."**

Dr. Stine, I realize the duplication of the process/devices was done by someone who knew the processes/devices and turned criminal. I am in absolutely no way insinuating my government, knowingly, would try to harm me. I have never done anything wrong or illegal that would give them cause. But, Dr. Stine, does my government want me harmed by a gang of criminals when I am giving my government all the information to assist them in an investigation and get these deadly criminals off of our streets to make everyone safe.

Very respectfully,

Dorothy Szczepkowski

Attachment

-----Original Message-----
From: dscepki <dscepki@aol.com>
To: Deborah_D._Stine <Deborah_D._Stine@ostp.eop.gov>
Sent: Thu, Aug 25, 2011 4:54 pm
Subject: Fwd: From: Dorothy Szczepkowski, Streamwood, IL. RE: “First” Known Police Report taken Seriously by any Police Department from a Targeted Individual by the Richmond, California Police Department from Amy Lee Anderson

Dorothy Szczepkowski
[redacted]

August 25, 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
[redacted]
Washington, D.C. 20502

Dear Dr. Stine:

I have attached a copy of the “first” known Police Report taken seriously by any Police Department from a Targeted Individual by the Richmond, California Police Department from Amy Lee Anderson.

On the attached Police Report, Under “Synopsis – M.O.,” please note, **“Ms. Anderson complains of being a victim of electronic torture and harassment through electronic mind control technology. Ms. Anderson believes this technology is designed to drive a person insane because it is a silent killer using subliminal sound radio wave frequencies. Further stating, this mind control technology tunes one’s brain waves like a radio station that broadcast subliminal messages to one’s mind.”**

Please note on Page 4 of 4 (Page number handwritten, located in lower right hand corner on the page,) in the 4th complete paragraph, "Ms Anderson said sometimes the symptoms she experience is like having her face burning on fire. **I told Ms. Anderson that the police department is limited on the resources available to investigate and provide remedies for such scientifically sophisticated matters."**

Dr. Stine, I ask you, as a United States Citizen, always doing the right and responsible thing, who is going to step up, within our government and fine land, and do the right thing? What about our land's laws? Are deadly criminals, now, going to start having the run of the land?

Please help me, us.

Respectfully,

Dorothy Szczepkowski

Attachment: Police Report

-----Original Message-----
From: dscepki <dscepki@aol.com>
To: Deborah_D._Stine <Deborah_D._Stine@ostp.eop.gov>
Sent: Tue, Aug 9, 2011 4:36 pm
Subject: Fwd: From: Dorothy Szczepkowski, Streamwood, IL. RE: President Obama's 2nd Bioethics Committee Conference, May 18, 2011

Dorothy Szczepkowski
[redacted]

August 8, 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
[redacted]
Washington, D.C. 20502

Dear Dr. Stine:

I am forwarding to you, in my first attachment, U.S. Patent Number 4877027, "Microwave Technology for Making People Hear Voices in Head." Dr. Stine, if you are unfamiliar with this Patent, after reading it, surely it will give validity to what I have been writing to you over the last two (2) years. Dr. Stine, I am asking you to please have the appropriate federal law enforcement agency start an investigation into the torture of U.S. citizens, of which I am one, who endure daily, life threatening torture and assaults on and to our bodies on a 24 hour basis. These assaults and torture are speeding up the natural process for our deaths. These assaults are destroying our bodies. If the appropriate branch of our government in our great country is not willing to take the responsibility for these atrocities, is this and will this be the "modern day" Holocaust.

With sincere respect,

Dorothy Szczepkowski

Attachments (5)

-----Original Message-----
From: dscepki <dscepki@aol.com>
To: Deborah_D._Stine <Deborah_D._Stine@ostp.eop.gov>
Sent: Tue, Jul 12, 2011 4:14 pm
Subject: Fwd: From: Dorothy Szczepkowski, Streamwood, IL. RE: President Obama's 2nd Bioethics Committee Conference, May 18, 2011

Dorothy Szczepkowski
[redacted]

July 12, 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
[redacted]
Washington, D.C. 20502

Dear Dr. Stine:

I am sending you **an Internet link of a recording, June 14, 2011, of the program "Technology -To Serve or to Be Served," hosted by Ms. Johnnette Benkovic, "Women of Grace" with and interviewing Father Joseph Esper, St. Edward on the Lake Parish, Lakeport, Michigan, Roman Catholic Archdiocese of Detroit, Michigan.** It is 26 minutes long.

http://www.womenofgrace.com/tv-shows/10249-Technology-To-Serve-or-to-Be-Served.html

In these 26 minutes, Father Esper is talking about present day, the real world, constant surveillance, rfid chips and mind control by the government. (In the crimes being committed against me, it is a gang of criminals.) It is so hard to believe that a Catholic priest, whose life is devoted to God, could be so knowledgeable about what is happening. Father Esper is factual, to the point, accurate and no nonsense. **In Father** Esper's **holy world, he has so much knowledge and facts about what is happening in our society from a standpoint of 24 hour surveillance, monitoring and all of the (deadly) consequences and there is no one in my government, village, state and federal that is willing to investigate and acknowledge that I and innocent Americans are being targeted in their own homes too, with deadly devices and no one is taking any action.** Please have a staff member take the time to listen to the Internet link with Father Esper and assign a staff member to investigate all of these deadly crimes. The **Microwave Hearing Effect transmissions** that are being used on me is shortening my life, threatening my health and life.

These are crimes of treason and espionage that is now taking place in our great land; an extreme violation of our country's principles. My government burying their heads in the sand on these crimes will not make them go away, it will only worsen them.....the more time to perpetrate. This type of criminal 24/7/365 surveillance is what our country will have to contend with in the future. Thank you.

Respectfully,

Dorothy Szczepkowski

-----Original Message-----
From: dscepki <dscepki@aol.com>
To: Deborah_D._Stine <Deborah_D._Stine@ostp.eop.gov>
Sent: Tue, May 31, 2011 2:44 pm
Subject: Fwd: From: Dorothy Szczepkowski, Streamwood, IL. RE: President Obama's 2nd Bioethics Committee Conference, May 18, 2011

Dorothy Szczepkowski
[redacted]

May 31, 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
[redacted]
Washington, D.C. 20502

Dear Dr. Stine:

Following are emails/letters I sent to you on Fri., April 15, 2011, 11:44AM; Mon. March 7, 2011, 2:03PM, in this correspondence I included the first **President Obama's Commission for the Study of Bioethical Issues Conference in Washington, D.C. February 28 through March 1, 2011, Internet link,**
http://www.tvworldwide.com/events/bioethics/110228/default.cfm?id=13288&type=flv&test=0&live=0 ,
of Targeted Individuals, like myself, who were able to express concerns and their deadly experiences due to the widespread use of electromagnetic tracking devices and Microwave Hearing Effect transmissions; Wed. August 25, 2010, 8:12PM; and Wed., August 19, 2009, 13:05:59.

Dr. Stine, I am now sending you more proof of the ongoing torture of Targeted Individuals from the second **President Obama's Commission for the Study of Bioethical Issues Conference in New York, NY, May 18, 2011.** Below are five (5) Internet links, 10 minutes each, in which 20 Targeted Individuals, like myself, were able to give a 2 minute expressions of concern during the Public Comments Session, detailing their daily torture and begging and pleading for help. 300 Targeted Individuals requested floor time. The time allotted only permitted for 20. 300 Targeted Individuals were willing to take time off of work and incur, to them, a sizeable expense to tell of their torture and get help. Dr. Stine, **these are cells of murder mills** on our American soil**. Americans are being Targeted for torture, resulting in death, from criminals here in America without anyone in our great land investigating the accusations of many?** Dr. Stine, it is only a matter of time, before these crimes are carried and publicized through news stations and the media. There is more and more information, and out crying over the Internet. **More and more good, law abiding citizens are complaining and crying out about these deadly, unbearable crimes;** would they target another criminal.

http://www.youtube.com/watch?v=vmhdsQ8fPSc&feature=related

http://www.youtube.com/watch?v=nKMgHd-gn1M&feature=related

http://www.youtube.com/watch?v=DenV-MTVo80&feature=related

http://www.youtube.com/watch?v=_ZwNgM0RCY0&feature=related

http://www.youtube.com/watch?v=GmBOWSeXxjA&feature=related

"There are a thousand hacking at the branches of evil to the one who is striking at the root." -- Henry D. Thoreau. Please find the appropriate government agency to help us.

Sincerely,

Dorothy Szczepkowski
[redacted]

-----Original Message-----
From: dscepki <dscepki@aol.com>
To: Deborah_D._Stine <Deborah_D._Stine@ostp.eop.gov>
Sent: Fri, Apr 15, 2011 11:44 am
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 Premeditated Attempted Murder

Dear Dr. Stine,

The organized criminal gang is killing me, in my own home. Their sleep deprivation tactics/murder attempt has escalated to zero (0) minutes per night of sleep. Is anyone in our government helping me? **Is it OK to our government to lose a few citizens here and there to murderers?**

Very respectfully,

Dorothy Szczepkowski
[redacted]

-----Original Message-----
From: dscepki <dscepki@aol.com>
To: Deborah_D._Stine <Deborah_D._Stine@ostp.eop.gov>
Cc: wpress <wpress@cs.utexas.edu>; zewail <zewail@caltech.edu>
Sent: Mon, Mar 7, 2011 2:03 pm
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 Premeditated Attempted Murder

Dorothy Szczepkowski
[redacted]

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
[redacted]
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
[redacted]
(630) 483-1685

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 [redacted]
[redacted] 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

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
[redacted]

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

US006587729B2

(12) **United States Patent**
O'Loughlin et al.

(10) **Patent No.: US 6,587,729 B2**
(45) **Date of Patent: Jul. 1, 2003**

(54) **APPARATUS FOR AUDIBLY COMMUNICATING SPEECH USING THE RADIO FREQUENCY HEARING EFFECT**

(75) Inventors: **James P. O'Loughlin**, Placitas, NM (US); **Diana L. Loree**, Albuquerque, NM (US)

(73) Assignee: **The United States of America as represented by the Secretary of the Air Force**, Washington, DC (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/131,626**

(22) Filed: **Apr. 24, 2002**

(65) **Prior Publication Data**

US 2002/0123775 A1 Sep. 5, 2002

Related U.S. Application Data

(62) Division of application No. 08/766,687, filed on Dec. 13, 1996, now Pat. No. 6,470,214.

(51) **Int. Cl.**[7] **H03C 1/54**

(52) **U.S. Cl.** **607/55**; 128/897; 332/167; 381/151; 600/586

(58) **Field of Search** 332/167; 381/151; 607/56, 55; 340/384.1; 600/559, 23, 586; 128/897, 898

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,563,246	A *	2/1971	Puharich et al.	607/55
3,629,521	A *	12/1971	Puharich et al.	607/56
4,835,791	A *	5/1989	Daoud	375/301
5,450,044	A *	9/1995	Hulick	332/103

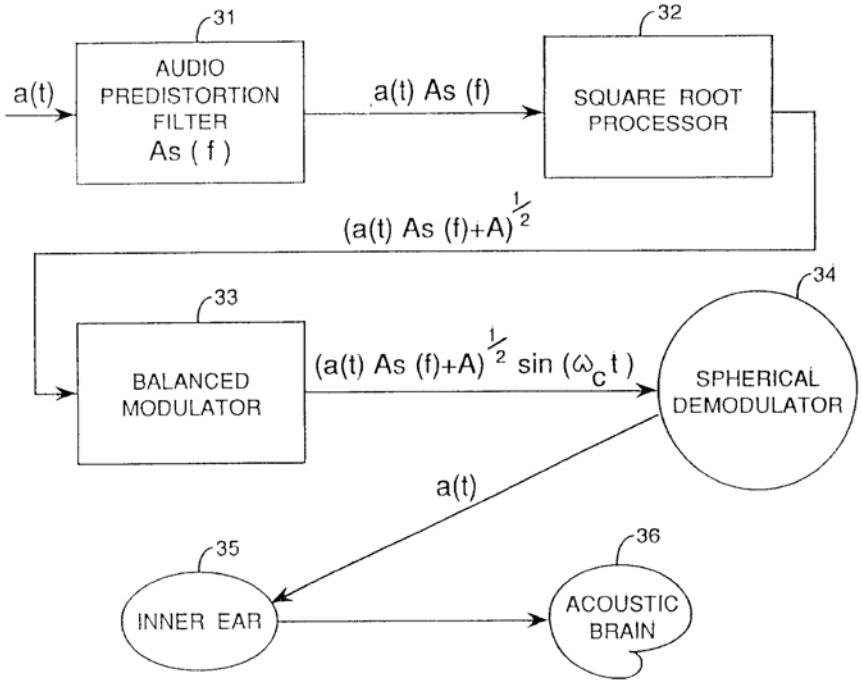
* cited by examiner

Primary Examiner—Kennedy Schaetzle
(74) *Attorney, Agent, or Firm*—James M. Skorich

(57) **ABSTRACT**

A modulation process with a fully suppressed carrier and input preprocessor filtering to produce an encoded output; for amplitude modulation (AM) and audio speech preprocessor filtering, intelligible subjective sound is produced when the encoded signal is demodulated using the RF Hearing Effect. Suitable forms of carrier suppressed modulation include single sideband (SSB) and carrier suppressed amplitude modulation (CSAM), with both sidebands present.

11 Claims, 3 Drawing Sheets



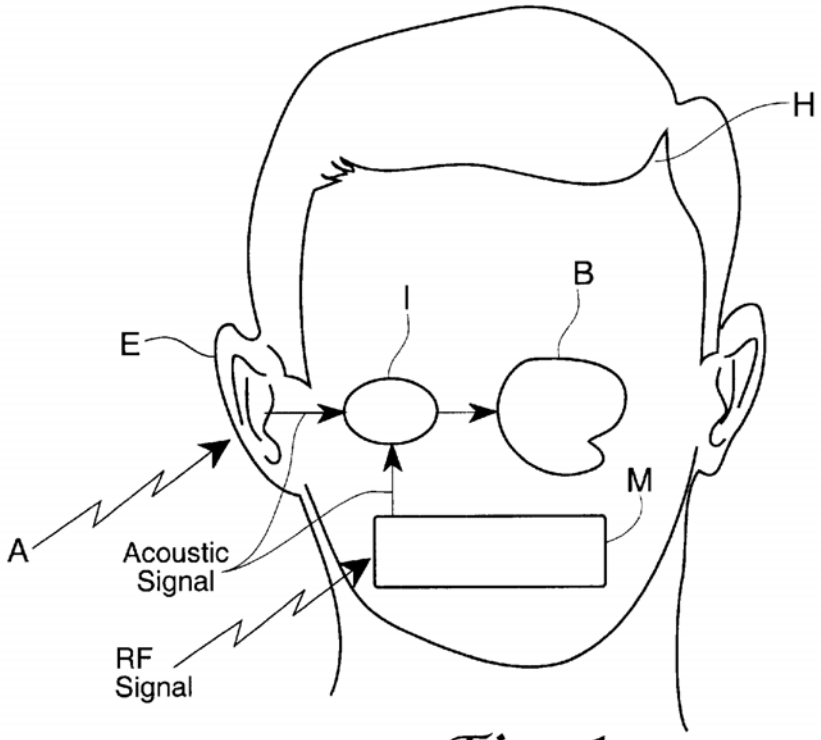


Fig. 1

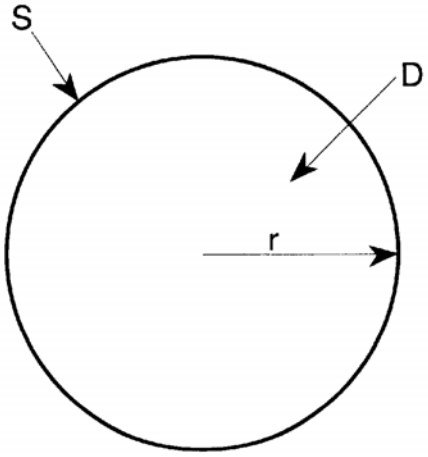


Fig. 2

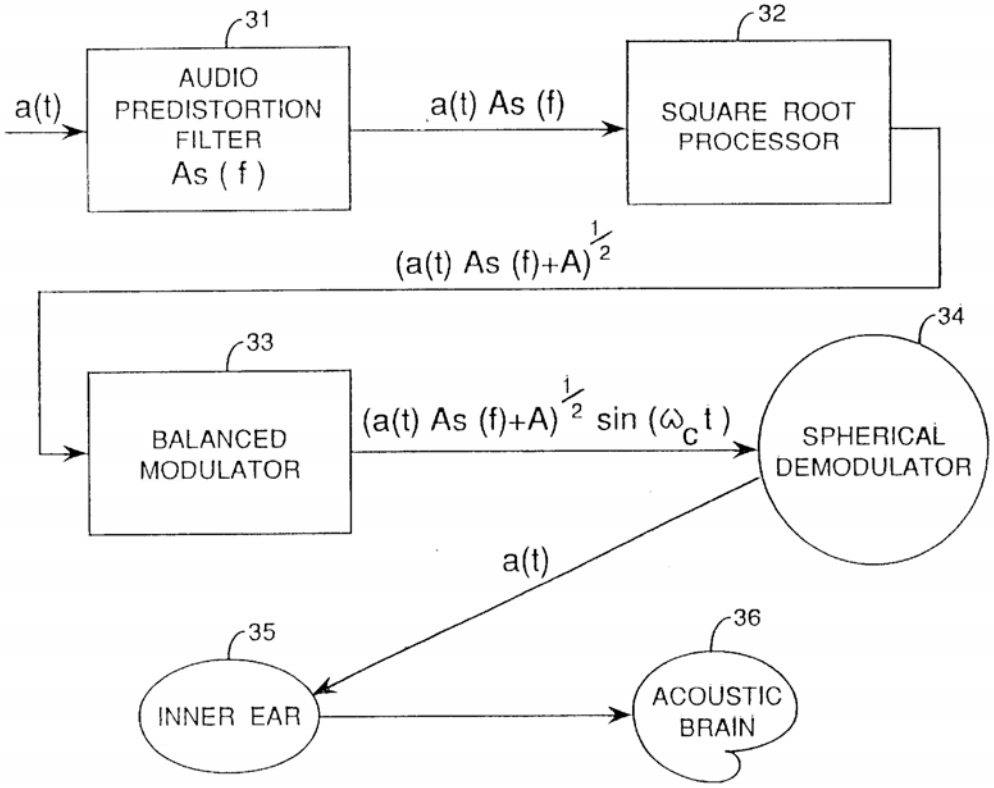

31
AUDIO
PREDISTORTION
FILTER
As (f)
a(t)
a(t) As (f)
32
SQUARE ROOT
PROCESSOR
(a(t) As (f)+A)^1/2
33
BALANCED
MODULATOR
(a(t) As (f)+A)^1/2 sin (ωc t)
34
SPHERICAL
DEMODULATOR
a(t)
35
INNER EAR
36
ACOUSTIC
BRAIN

FIG. 3

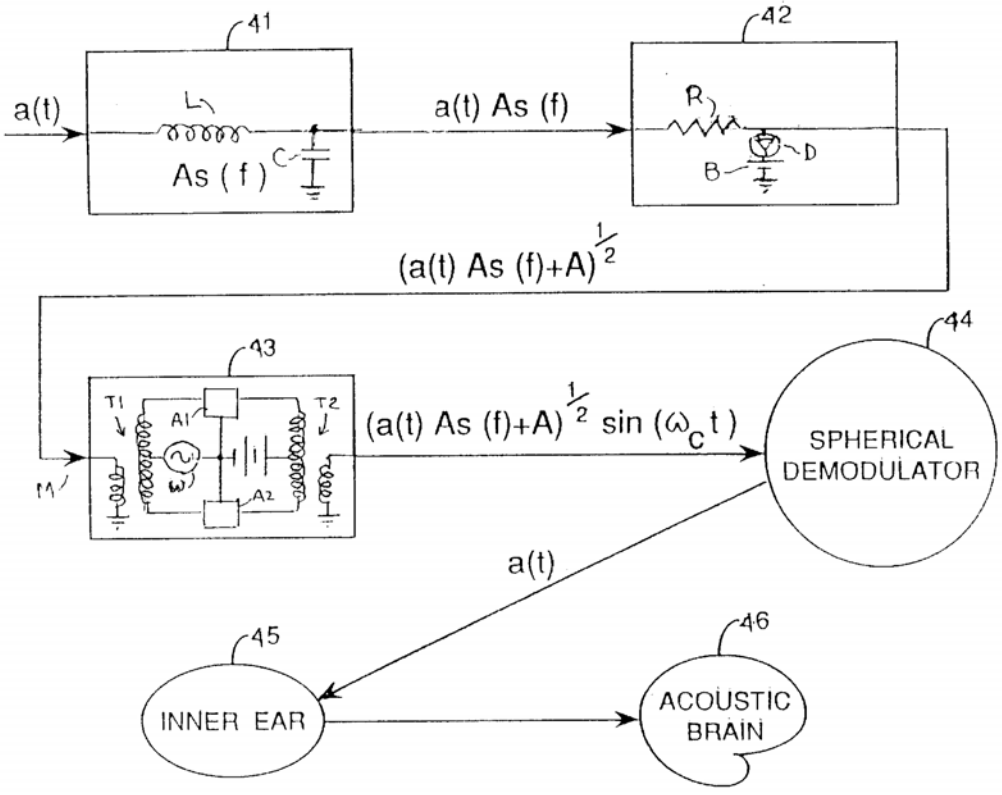

41
42
a(t)
L
As (f)
C
a(t) As (f)
R
B
D
(a(t) As (f)+A)^1/2
43
44
T1
A1
T2
M
ω
A2
(a(t) As (f)+A)^1/2 sin (ωc t)
SPHERICAL DEMODULATOR
a(t)
45
46
INNER EAR
ACOUSTIC BRAIN

FIG. 4

APPARATUS FOR AUDIBLY COMMUNICATING SPEECH USING THE RADIO FREQUENCY HEARING EFFECT

This application is a division of U.S. patent application Ser. No. 08/766,687 filed on Dec. 13, 1996, now U.S. Pat. No. 6,470,214, and claims the benefit of the foregoing filing date.

The invention described herein may be manufactured and used by or for the Government for governmental purposes without the payment of any royalty thereon.

BACKGROUND OF THE INVENTION

This invention relates to the modulating of signals on carriers, which are transmitted and the signals intelligibly recovered, and more particularly, to the modulation of speech on a carrier and the intelligible recover of the speech by means of the Radio Frequency Hearing Effect.

The Radio Frequency ("RF") Hearing Effect was first noticed during World War II as a subjective "click" produced by a pulsed radar signal when the transmitted power is above a "threshold" level. Below the threshold level, the click cannot be heard.

The discovery of the Radio Frequency Hearing Effect suggested that a pulsed RF carrier could be encoded with an amplitude modulated ("AM") envelope. In one approach to pulsed carrier modulation, it was assumed that the "click" of the pulsed carrier was similar to a data sample and could be used to synthesize both simple and complex tones such as speech. Although pulsed carrier modulation can induce a subjective sensation for simple tones, it severely distorts the complex waveforms of speech, as has been confirmed experimentally.

The presence of this kind of distortion has prevented the click process for the encoding of intelligible speech. An example is provided by AM sampled data modulation

Upon demodulation the perceived speech signal has some of the envelope characteristics of an audio signal. Consequently a message can be recognized as speech when a listener is pre-advised that speech has been sent. However, if the listener does not know the content of the message, the audio signal is unintelligible.

The attempt to use the click process to encode speech has been based on the assumption that if simple tones can be encoded, speech can be encoded as well, but this is not so. A simple tone can contain several distortions and still be perceived as a tone whereas the same degree of distortion applied to speech renders it unintelligible.

SUMMARY OF THE INVENTION

In accomplishing the foregoing and related object the invention uses a modulation process with a fully suppressed carrier and pre-processor filtering of the input to produce an encoded output. Where amplitude modulation (AM) is employed and the pre-processor filtering is of audio speech input, intelligible subjective sound is produced when the encoded signal is demodulated by means of the RF Hearing Effect. Suitable forms of carrier suppressed modulation include single sideband (SSB) and carrier suppressed amplitude modulation (CSAM), with both sidebands present.

The invention further provides for analysis of the RE hearing phenomena based on an RF to acoustic transducer model. Analysis of the model suggests a new modulation process which permits the RF Hearing Effect to be used following the transmission of encoded speech.

In accordance with one aspect of the invention the pre-processing of an input speech signal takes place with a filter that de-emphasizes the high frequency content of the input speech signal. The de-emphasis can provide a signal reduction of about 40 dB (decibels) per decade. Further processing of the speech signal then takes place by adding a bias level and taking a root of the predistorted waveform. The resultant signal is used to modulated an RF carrier in the AM fully suppressed carrier mode, with single or double sidebands.

The modulated RF signal is demodulated by an RF to acoustic demodulator that produces an intelligible acoustic replication of the original input speech.

The RF Hearing Effect is explained and analyzed as a thermal to acoustic demodulating process. Energy absorption in a medium, such as the head, causes mechanical expansion and contraction, and thus an acoustic signal.

When the expansion and contraction take place in the head of an animal, the acoustic signal is passed by conduction to the inner ear where it is further processed as if it were an acoustic signal from the outer ear.

The RF to Acoustic Demodulator thus has characteristics which permit the conversion of the RF energy input to an acoustic output.

Accordingly, it is an object of the invention to provide a novel technique for the intelligible encoding of signals. A related object is to provide for the intelligible encoding of speech.

Another object of the invention is to make use of the Radio Frequency ("RF") Hearing Effect in the intelligible demodulation of encoded signals, including speech.

Still another object of the invention is to suitably encode a pulsed RF carrier with an amplitude modulated ("AM") envelope such that the modulation will be intelligibly demodulated by means of the RF Hearing Effect. A related object is to permit a message to be identified and understood as speech when a listener does not know beforehand that the message is speech.

Other aspects of the invention will be come apparent after considering several illustrative embodiments, taken in conjunction with the drawings.

DESCRIPTION OF THE DRAWINGS

FIG. **1** is a block diagram model of RF to Acoustic Demodulation Process making use of the Radio Frequency ("RF") Hearing Effect;

FIG. **2** is a spherical demodulator and radiator having a specific acoustic impedance for demodulation using the RF Hearing Effect;

FIG. **3** is a diagram illustrating the overall process and constituents of the invention; and

FIG. **4** is an illustrative circuit and wiring diagram for the components of FIG. **3**.

DETAINED DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to the drawings, FIG. **1** illustrates the RF to acoustic demodulation process of the invention. Ordinarily an acoustic signal A reaches the outer ear E of the head H and traverses first to the inner ear I and then to the acoustic receptors of the brain B. A modulated RF signal, however, enters a demodulator D, which is illustratively provided by the mass M of the brain, and is approximated, as shown in FIG. **2**, by a sphere S of radius r in the head H. The radius

r of the sphere S is about 7 cm to make the sphere S equivalent to about the volume of the brain B. It will be appreciated that where the demodulator D, which can be an external component, is not employed with the acoustic receptors of the brain B, it can have other forms.

The sphere S, or its equivalent ellipsoid or similar solid, absorbs RF power which causes an increase in temperature that in turn causes an expansion and contraction which results in an acoustic wave. As a first approximation, it is assumed that the RF power is absorbed uniformly in the brain. Where the demodulator D is external to the brain B, the medium and/or RF carrier frequency can be selected to assure sufficiently uniform absorption.

For the modulated RF signal of FIG. **1**, the power absorbed in the sphere S is proportional to the power waveform of the modulated RF signal. The absorption rate is characterized quantitatively in terms of the SAR (Specific Absorption Rate) in the units of absorbed watts per kilogram per incident watt per square centimeter.

The temperature of the sphere S is taken as following the integrated heat input from the power waveform, i.e. the process is approximated as being adiabatic, at least for short term intervals on the order of a few minutes.

The radial expansion of the sphere follows temperature and is converted to sound pressure, p(t), determined by the radial velocity (U_r) multiplied by the real part of the specific acoustic impedance (Z_s) of the sphere, as indicated in equation (1), below.

$$Z_s=\rho_o c(jkr)/(1+jkr)=\rho_o c\ jf/f_c/(1+jf/f_c) \quad (1)$$

Where:

ρ_o=density, 1000 kg/m^3 for water

c=speed of sound, 1560 m/s, in water @ 37° C.

k=wave number, 2π/wavelength

r=sphere radius, in meters (m)

f=audio frequency

f_c=lower cutoff break frequency,=c/(2πr)

j=the 90 degree phase-shift operator

The specific acoustic impedance for a sphere of 7 cm radius, on the order of the size of the brain, has a lower cut-off break frequency of about 3,547 Hertz (Hz) for the parameters given for equation (1). The essential frequency range of speech is about 300 to 3000 Hz, i.e., below the cut-off frequency. It is therefore the Real part (R_e) of Z_s times the radial particle velocity (U_r) which determines the sound pressure, p(t). The real part of Z_s is given by equation (1a), below:

$$R_e(Z_s)=\rho_o c(f/f_c)^2/(1+(f/f_c)^2) \quad (1a)$$

In the speech spectrum, which is below the brain cut-off frequency, the sphere S is an acoustic filter which "rolls off", i.e. decreases in amplitude at −40 dB per decade with decreasing frequency. In addition to any other demodulation processes to be analyzed below, the filter characteristics of the sphere will modify the acoustic signal with a 40 dB per decade slope in favor of the high frequencies.

Results for an AM Modulated Single Tone

An RF carrier with amplitude A_c at frequency ω_c is AM modulated 100 percent with a single tone audio signal at frequency ω_1. The voltage (time) equation of this modulated signal is given by equation (2), below:

$$V(t)=A_c \sin(\omega_c t)(1+\sin(\omega_a t)) \quad (2)$$

The power signal is $V(t)^2$ as given by equation (3), below:

$$P(t)=A_c^2[¾+\sin(\omega_3 t)-¼\cos(2\omega_3 t)-¾\cos(2\omega_c t)-\cos(2\omega_c t)\sin(\omega_3 t)+¼\cos(2\omega_c t)\cos(2\omega_3 t)] \quad (3)$$

To find the energy absorbed in the sphere, the time integral of equation (3) is taken times absorption coefficient, K. The result is divided by the specific heat, SH to obtain the temperature of the sphere and then multiplied by the volume expansion coefficient, Mv to obtain the change in volume. The change in volume is related to the change in radius by equation (4), below:

$$dV/V=3dr/r \quad (4)$$

To obtain the amplitude of the radius change, there is multiplication by the radius and division by three. The rms radial surface velocity, U_r is determined by multiplying the time derivative by r and dividing by $2^{1/2}$. The result, U_r, is proportional to the power function, P(t) in equation (5), below.

$$U_r=0.3535\ P(t)rKM_v/(3SH) \quad (5)$$

The acoustic pressure, p(t), is given in equation (6), below, as the result of multiplying equation (5) by the Real part of the specific acoustic impedance, R_e (1).

$$p(t)=R_e\{Z_s U_r\}=R_e(Z_s)U_r \quad (6)$$

The SPL (Sound Pressure Level), in acoustic dB, is approximated as 20 log[p(t)/2E−5]. The standard acoustic reference level of 2E−5 Newtons per square meter is based on a signal in air; however, the head has a water-like consistency. Therefore, the subjective level in acoustic dB is only approximate, but sufficient for first order accuracy.

In a single tone case the incident RF power, P(t), from equation (3) has two terms as shown in equation (7), below, which are in the hearing range.

$$\sin(\omega_a t)-¼\cos(2\omega_a t) \quad (7)$$

This is converted to the acoustic pressure wave, p(t), by multiplying by the specific acoustic impedance calculated at the two frequencies. Therefore, the resulting pressure wave as indicated in equation (8), below, becomes

$$p(t)=C[Z_s(\omega_a)\sin(\omega_a t)-¼Z_s(2\omega_a)\cos(2\omega_3 t)] \quad (8)$$

The result is an audio frequency and a second harmonic at about ¼ amplitude. Thus using an RF carrier, AM modulated by a single tone, the pressure wave audio signal will consist of the audio tone and a second harmonic at about −6 dB, if the specific acoustic impedances at the two frequencies are the same. However, from equation (1) the break frequency of a model 7 cm sphere is 3.547 Hz. Most of the speech spectrum is below this frequency therefore the specific acoustic impedance is reactive and the real component is given by equation (8a), below:

$$R_e\{Z_s(f)\}=\rho_o c(f/f_c)^2/(1+(f/f_c)) \quad (8a)$$

Below the cutoff frequency the real part of the impedance varies as the square of the frequency or gives a boost of 40 dB per decade. Therefore, if the input modulation signal is 1 kHz, the second harmonic will have a boost of about 4 time in amplitude, or 12 dB, due to the variation of the real part of the specific acoustic impedance with frequency. So the second harmonic pressure term in equation (8) is actually four times the power or 6 dB higher than the fundamental

term. If the second harmonic falls above the cutoff frequency then the boost begins to fall back to 0 dB. However, for most of the speech spectrum there is a sever distortion and strong boost of the high frequency distortion components.

Results for Two Tone AM Modulation Analysis

Because of the distortion attending single tone modulation, predistortion of the modulation could be attempted such that the resulting demodulated pressure wave will not contain harmonic distortion. This will not work, however, because of the non-linear cross-products of two-tone modulation are quite different from single tone modulation as shown below.

Nevertheless, two-tone modulation distortion provides an insight for the design of a corrective process for a complex modulation signal such as speech. The nature of the distortion is defined in terms of relative amplitudes and frequencies.

Equation (8b) is that of an AM modulated carrier for the two-tone case where ω_{a1} and ω_{a2} are of equal amplitude and together modulate the carrier to a maximum peak value of 100 percent. The total modulated RF signal is given by equation (8b), below:

$$V(t)=A_c \sin(\omega_c t)[1+\tfrac{1}{2}\sin(\omega_{a1}t)+\tfrac{1}{2}\sin(\omega_{a2}t)]$$

The square of (8b) is the power signal, which has the same form as the particle velocity, $U_r(t)$, of equation (9), below.

From the square of (8b) the following frequencies and relative amplitudes are obtained for the particle velocity wave, $U_r(t)$, which are in the audio range;

$$U_r(t)=C[\sin(\omega_{a1}t)+\sin(\omega_{a2}t)+\tfrac{1}{4}\cos((\omega_{a1}-\omega_{a2})(t)=\tfrac{1}{4}\cos((\omega_{a1}+\omega_{a2})t)-\tfrac{1}{8}\cos(2\omega_{a1}t)-\tfrac{1}{8}\cos(2\omega_{a2}t)] \quad (9)$$

If the frequencies in equation (9) are below the cut-off frequency, the impedance boost correction will result in a pressure wave with relative amplitudes given in equation (9a), below:

$$p(t)=C[\sin(\omega_{a1}t)+b^2\sin(\omega_{a2}t)+(1-b^2)/4\cos((\omega_{a1}-\omega_{a2})t)+(1+b^2)/4\cos((\omega_{a1}+\omega_{a2})t)-\tfrac{1}{2}\cos(2\omega_{a1})t)-b^2/2\cos(2\omega_{a2}t) \quad (9a)$$

where: $b=\omega_{a2}/\omega_{a1}$ and $\omega_{a2}>\omega_{a1}$

Equation (9a) contains a correction factor, b, for the specific acoustic impedance variation with frequency. The first two terms of (9a) are the two tones of the input modulation with the relative amplitudes modified by the impedance correction factor. The other terms are the distortion cross products which are quite different from the single tone distortion case. In addition to the second harmonics, there are sum and difference frequencies. From this two-tone analysis it is obvious that more complex multiple tone modulations, such as speech, will be severely distorted with even more complicated cross-product and sum and difference components. This is not unexpected since the process which creates the distortion is nonlinear. This leads to the conclusion that a simple passive predistortion filter will not work on a speech signal modulated on an RF carrier by a conventional AM process, because the distortion is a function of the signal by a nonlinear process.

However, the serious distortion problem can be overcome by means of the invention which exploits the characteristics of a different type of RF modulation process in addition to special signal processing.

AM Modulation With Fully Suppressed Carrier for the Intelligible Encoding of Speech by the Invention for Compatibility With the RF Hearing Phenomena

The equation for AM modulation with a fully suppressed carrier is given by equation (10), below:

$$V(t)=a(t)\sin(\omega_c t) \quad (10)$$

This modulation is commonly accomplished in hardware by means of a circuit known as a balanced modulator, as disclosed, for example in "Radio Engineering", Frederick E. Terman, p.481–3, McGraw-Hill, 1947.

The power signal has the same form as the particle velocity signal which is obtained from the square of equation (10) as shown in equation (11), below:

$$P(t)=C\ U_r=a(t)^2/2-(a(t)^2/2)\cos(2\omega_c t)) \quad (11)$$

From inspection of equations (10) and (11) it is seen that, if the input audio signal, a(t), is pre-processed by taking the square root and then modulating the carrier, the audio term in the particle velocity equation will be an exact, undistorted, replication of the input audio signal. Since the audio signal from a microphone is bipolar, it must be modified by adding a very low frequency (essential d.c.) bias term, A, such that the resultant sum, [a(t)+A]>0.0, is always positive. This is necessary in order to insure a real square root. The use of a custom digital speech processor implements the addition of the term A, i.e. as shown in equation (10*), below:

$$V(t)=(a(t)+A)^{1/2}\sin(\omega_c t) \quad (10^*)$$

The pressure wave is given by equation (11*), below:

$$p(t)=C\ U_r=A/2+a(t)/2-(a(t)/2)\cos(2\omega_c t)-(A/2)\cos(2\omega_c t) \quad (11^*)$$

When the second term of the pressure wave of equation (11*) is processed through the specific acoustic impedance it will result in the replication of the input audio signal but will be modified by the filter characteristics of the Real part of the specific acoustic impedance, $R_e\{Z_s(f)\}$, as given in equation (8a). The first term of equation (11*) is the d.c. bias, which is added to obtain a real square root; it will not be audible or cause distortion. The third and fourth terms of (11*) are a.c. terms at twice the carrier frequency and therefore will not distort or interfere with the audio range signal, a(t).

Since the filter characteristic of equation (7) is a linear process in amplitude, the audio input can be predistorted before the modulation is applied to the carrier and then the pressure or wound wave audio signal, which is the result of the velocity wave times the impedance function, $R_e\{Z_s(f)\}$, will be the true replication of the original input audio signal.

A diagram illustrating the overall system **30** and process of the invention is shown in FIG. **3**. Then input signal a(t) is applied to an Audio Predistortion Filter **31** with a filter function As(f) to produce a signal a(t)As(f), which is applied to a Square Root Processor **32**, providing an output=$(a(t)As(f)+A)^{1/2}$, which goes to a balanced modulator **33**. The modulation process known as suppressed carrier, produces a double sideband output=$(a(t)As(f)+A)^{1/2}\sin(\omega_c t)$, where ω_c is the carrier frequency. If one of the sidebands and the carrier are suppressed (not shown) the result is single sideband (SSB) modulation and will function in the same manner discussed above for the purposes of implementing the invention. However, the AM double sideband suppressed carrier as described is more easily implemented.

The output of the balanced modulator is applied to a spherical demodulator **34**, which recovers the input signal a(t) that is applied to the inner ear **35** and then to the acoustic receptors in the brain **36**.

The various components **31–33** of FIG. **3** are easily implemented as shown, for example by the corresponding components **41–42** in FIG. **4**, where the Filter **41** can take

the form of a low pass filter, such as a constant-K filter formed by series inductor L and a shunt capacitor C. Other low-pass filters are shown, for example, in the ITT Federal Handbook, 4th Ed., 1949. As a result the filter output is AS(f) a $1/f^2$. The Root Processor **42** can be implemented by any square-law device, such as the diode D biased by a battery B and in series with a large impedance (resistance) R, so that the voltage developed across the diode D is proportional to the square root of the input voltage a(t)As(f). The balanced modulator **43**, as discussed in Terman, op.cit., has symmetrical diodes **A1** and **A2** with the modulating voltage M applied in opposite phase to the diodes **A1** and **A2** through an input transformer **T1**, with the carrier, O, applied commonly to the diodes in the same phase, while the modulating signal is applied to the diodes in opposite phase so that the carrier cancels in the primary of the output transformer **T2** and the secondary output is the desired double side band output.

Finally the Spherical Demodulator **45** is the brain as discussed above, or an equivalent mass that provides uniform expansion and contraction due to thermal effects of RF energy.

The invention provides a new and useful encoding for speech on an RF carrier such that the speech will be intelligible to a human subject by means of the RF hearing demodulation phenomena. Features of the invention include the use of AM fully suppressed carrier modulation, the preprocessing of an input speech signal be a compensation filter to de-emphasize the high frequency content by 40 dB per decade and the further processing of the audio signal by adding a bias terms to permit the taking of the square root of the signal before the AM suppressed carrier modulation process.

The invention may also be implemented using the same audio signal processing and Single Sideband (SSB) modulation in place of AM suppressed carrier modulation. The same signal processing may also be used on Conventional AM modulation contains both sideband and the carrier; however, there is a serious disadvantage. The carrier is always present with AM modulation, even when there is no signal. The carrier power does not contain any information but contributes substantially to the heating of the thermal-acoustic demodulator, i.e. the brain, which is undesirable. The degree of this extraneous heating is more than twice the heating caused by the signal or information power in the RF signal. Therefore conventional AM modulation is an inefficient and poor choice compared to the double side-band suppressed carrier and the SSB types of transmissions.

The invention further may be implemented using various degrees of speech compression commonly used with all types of AM modulation. Speech compression is implemented by raising the level of the low amplitude portions of the speech waveform and limiting or compressing the high peak amplitudes of the speech waveform. Speech compression increases the average power content of the waveform and thus loudness. Speech compression introduces some distortion, so that a balance must be made between the increase in distortion and the increase in loudness to obtain the optimum result.

Another implementation is by digital signal processing of the input signal through to the modulation of the RF carrier.

What is claimed is:

1. An apparatus for communicating an audio signal a(t), comprising:

an audio predistortion filter having a filter function As(f) for producing a first output signal a(t)As(t) from the audio signal a(t);

means for adding a bias A to the first output signal, to produce a second output signal a(t)As(f)+A;

a square root processor for producing a third output signal $(a(t)As(f)+A)^{1/2}$ responsive to the second output signal; and

a modulator for producing a double sideband output signal responsive to the third output signal, having a carrier frequency of ω_c, and being mathematically described by $(a(t)As(f)+A)^{1/2} \sin(\omega_c t)$; and

transmitting the double sideband output signal to a demodulator, whereby the audio signal a(t) is recovered from the double sideband output signal.

2. The communication apparatus defined in claim **1** wherein:

the double sideband output signal has RF power; and

the demodulator is for converting the RF power into acoustic pressure waves.

3. The communication apparatus defined in claim **2** wherein:

the demodulator converts the RF power into the acoustic pressure waves by means of thermal expansion and contraction, whereby

the acoustic pressure waves approximate the audio signal a(t).

4. The communication apparatus defined in claim **2** wherein the demodulator includes a mass that expands and contracts responsive to the RE power of the double sideband output signal.

5. The communication apparatus defined in claim **4** wherein the mass is approximately spherical.

6. The communication apparatus defined in claim **1** wherein:

the double sideband output signal is comprised of a first sideband component and a second sideband component; and

means for suppressing the second sideband component, whereby

the demodulator recovers the audio signal a(t) solely from the first sideband component.

7. The communication apparatus defined in claim **1** wherein the audio predistortion filter is a low-pass filter.

8. The communication apparatus defined in claim **7** wherein the audio predistortion filter is a digital processor.

9. The communication apparatus defined in claim **1** wherein:

the square root processor is a diode biased by a voltage source, in series with a resistance, whereby

a voltage across the diode is proportional to a square root of the second output signal a(t)As(t)+A.

10. The communication apparatus defined in claim **1** wherein the modulator is a balanced modulator.

11. The communication apparatus defined in claim **1** wherein:

the audio signal a(t) includes a high frequency component; and

the audio predistortion filter de-emphasizes the high frequency component by approximately 40 dB per decade.

* * * * *

US Patent 4877027: Microwave Technology for Making People Hear Voices in Head

US Patent 4877027: Microwave Technology for Making People Hear Voices in Head

United States Patent 4,877,027
Brunkan October 31, 1989
Hearing system
http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=4,877,027.PN.&OS=PN/4,877,027&RS=PN/4,877,027

Abstract

Sound is induced in the head of a person by radiating the head with microwaves in the range of 100 megahertz to 10,000 megahertz that are modulated with a particular waveform. The waveform consists of frequency modulated bursts. Each burst is made up of ten to twenty uniformly spaced pulses grouped tightly together. The burst width is between 500 nanoseconds and 100 microseconds. The pulse width is in the range of 10 nanoseconds to 1 microsecond. **The bursts are frequency modulated by the audio input to create the sensation of hearing in the person whose head is irradiated.**

Inventors: Brunkan; Wayne B. (Goleta, CA)
Appl. No.: 07/202,679
Filed: June 6, 1988

Current U.S. Class: 607/56
Current International Class: A61F 11/04 (20060101); A61F 11/00 (20060101); A61N 005/00 ()
Field of Search: 128/420.5,804,419R,421,422,746 381/68
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Microwave Auditory Effects and Applications, Lin, 1978, pp. 176-177..

Primary Examiner: Cohen; Lee S.
Attorney, Agent or Firm: Brelsford; Harry W.
Claims

I claim:

1. Apparatus for creating human hearing comprising:

(a) an audio source for creating electrical audio waves having positive peaks;

(b) a frequency modulator generator connected to the audio source to create frequency modulated bursts;

(c) a source of constant voltage to create a voltage standard that is in the range of 25% to 85% of the peak voltage of the audio waves;

(d) a comparator connected to the voltage source and the audio source to compare the instantaneous voltage of the waves from the audio source with the voltage standard;

(e) a connection of the comparator to the frequency modulator generator to activate the frequency modulator generator when the instantaneous voltage of the audio wave exceeds the standard voltage;

(f) a microwave generator creating microwaves in the range of 100 megahertz to 10,000 megahertz and connected to the frequency modulator generator, generating microwaves only when pulsed by the frequency modulator generator; and

(g) an antenna connected to the microwave generator to radiate the head of a human being to produce the sounds of the audio source.

2. Apparatus as set forth in claim 1 wherein the frequency generating range of the frequency modulator generator is 1 Khz to 100 KHz for bursts and 100 KHz to 20 MHZ for pulses within a burst.

3. Apparatus as set forth in claim 1 wherein the frequency generating range of

the frequency modulator generator is one Khz to 100 KHz for bursts and 100 KHz to 20 MHZ for pulses within a burst and the duration of each pulse of the frequency modulator generator is in the range of 10 nanoseconds to 1 microsecond.

4. Apparatus as set forth in claim 1 wherein the voltage standard is approximately 50% of the peak of the audio waves.

5. Apparatus as set forth in claim 1 wherein the antenna is of the type that projects the microwaves in space to the head of a person.

6. Apparatus for creating human hearing comprising:

(a) an oscillator creating an electromagnetic carrier wave at a selected frequency in the range of 100 Mhz to 10,000 Mhz;

(b) a pulse generator connected to said oscillator to pulse the carrier with pulses having a width in the range of 10 nanoseconds to 1 microsecond with a minimum spacing between pulses of about 25 nanoseconds;

(c) a frequency modulator connected to the pulse generator;

(d) an audio signal generator connected to the modulator which modulates the pulses in accordance with the audio signal; and

(e) a transmitting antenna connected to the oscillator to transmit the carrier wave as thus modified to project the electromagnetic energy through space to the head of a person.

7. Apparatus as set forth in claim 6 wherein the modulator is a frequency modulator to vary the density of bursts within an audio envelope as a function of the audio amplitude.

8. The method of irradiating a person's head to produce sound in the head of the person comprising

(a) irridiating the head of a person with microwaves in the range of 100 Mhz to 10,000 Mhz;

(b) pulsing said microwaves with pulses in the range of 10 nanoseconds to 1 microsecond; and

(c) frequency modulating groups of pulses called bursts by audio waves wherein the modulation extends from 1 Khz to 100 Khz.

Description

This invention relates to a hearing system for human beings in which high frequency electromagnetic energy is projected through the air to the head of a human being and the electromagnetic energy is modulated to create signals that can be discerned by the human being regardless of the hearing ability of the person.

THE PRIOR ART

Various types of apparatus and modes of application have been proposed and tried to inject intelligible sounds into the heads of human beings. Some of these have been devised to simulate speech and other sounds in deaf persons and other systems have been used to inject intelligible signals in persons of good hearing, but bypassing the normal human hearing organs.

U.S. Pat. No. 3,629,521 issued Dec. 21, 1971 describes the use of a pair of electrodes applied to a person's head to inject speech into the head of a deaf person. An oscillator creates a carrier in the range of 18 to 36 KHz that is amplitude modulated by a microphone.

Science magazine volume 181, page 356 describes a hearing system utilizing a radio frequency carrier of 1.245 GHz delivered through the air by means of a waveguide and horn antenna. The carrier was pulsed at the rate of 50 pulses per second. The human test subject reported a buzzing sound and the intensity varied with the peak power.

Similar methods of creating "clicks" inside the human head are reported in I.E.E.E. Transactions of Biomedical Engineering, volume BME 25, No. 3, May 1978.

The transmission of intelligible speech by audio modulated Microwave is described in the book Microwave Auditory Effects and Applications by James C. Lin 1978 publisher Charles C. Thomas.

BRIEF SUMMARY OF THE INVENTION

I have discovered that a pulsed signal on a radio frequency carrier of about 1,000 megahertz (1000 MHz) is effective in creating intelligible signals inside the head of a person if this electromagnetic (EM) energy is projected through the air to the head of the person. Intelligible signals are applied to the carrier by microphone or other audio source and I cause the bursts to be frequency modulated. The bursts are composed of a group of pulses. The pulses are carefully selected for peak strength and pulse width. Various objects, advantages and features of the invention will be apparent in the

specification and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings forming an integral part of this specification:

FIG. 1 is a block diagram of the system of the invention.

FIG. 2 is a diagram of an audio wave which is the input to be perceived by the recipient.

FIG. 3 is a diagram on the same time coordinate as FIG. 2 showing bursts that are frequency modulated by the wave form of FIG. 2.

FIG. 4 shows, on an enlarged time coordinate, that each vertical line depicted in FIG. 3 is a burst of pulses. (A burst is a group of pulses).

FIG. 5 shows, on a further enlarged time coordinate, a single continues pulse, Depicted as a vertical line in FIG. 4.

DETAILED DESCRIPTION OF THE INVENTION

Inasmuch as microwaves can damage human tissue, any projected energy must be carefully regulated to stay within safe limits. The guideline for 1,000 MHz, set by the American Standards Institute, is 3.3 mw/cm2 (3.3 milliwatts per square centimeter). The apparatus described herein must be regulated to stay within this upper limit.

Referring to FIG. 1 a microphone 10 or other generator of audio frequencies, delivers its output by wire 11 to an FM capable pulse generator 12 and by branch wire 13 to a comparator 14. The comparator 14 also receives a signal from a voltage standard 16. When the peak voltage of the audio generator 10 falls below the standard 16 the comparator delivers a signal by wire 17 to the FM capable pulse generator 12 to shut down the pulse generator 12. This avoids spurious signals being generated. The output of the FM pulse generator 12 is delivered by wire 18 to a microwave generator 19 which delivers its output to the head of a human being 23. In this fashion the person 23 is radiated with microwaves that are in short bursts.

The microwave generator 19 operates at a steady frequency presently preferred at 1,000 megahertz (1,000 million). I presently prefer to pulse the microwave energy at pulse widths of 10 nanoseconds to 1 microsecond. For any one setting of the FM capable generator 12, this width is fixed. The pulses are arranged in bursts. The timing between bursts is controlled by the height of the audio envelope above the voltage standard line. In addition the bursts are spaced from

one another at a non-uniform rate of 1 to 100 KHz. This non-uniform spacing of bursts is created in the FM capable generator 12.

Referring to FIG. 2 there is illustrated an audio wave 27 generated by the audio input 10 wherein the horizontal axis is time and the vertical axis is voltage. For illustrative purposes the wave 27 is shown as having a voltage peak 28 on the left part of FIG. 2 and a voltage peak 29 of the right side of FIG. 2. The voltage standard 16 of FIG. 1 generates a dc voltage designated at 31 in FIG. 2. This standard voltage is preferably at about 50% of the peak voltage 28. The comparator 14 of FIG. 1 actuates the FM capable generator 12 only when the positive envelope of the audio wave 27 exceeds the voltage standard. The negative portions of the audio wave are not utilized.

Referring now to FIG. 3 there is illustrated two groups of bursts of microwave energy that are delivered by the antenna 22 of FIG. 1 to the head of the person 23. FIG. 3 has a horizontal time axis identical to the time axis of FIG. 2 and has a vertical axis that in this case represents the power of the microwaves from generator 19. At the left part of FIG. 3 are a plurality of microwave bursts 32 that occur on the time axis from the point of intersection of the standard voltage 31 with the positive part of the audio wave 27, designated as the time point 33 to time point 34 on FIG. 2. It will be noted in FIG. 3 that the bursts 32 are non-uniform in spacing and that they are closer together at the time of maximum audio voltage 28 and are more spread out toward the time points 33 and 34. This is the frequency modulation effected by the FM pulse generator 12.

Referring to the right part of FIG. 3 there are a plurality of microwave bursts 36 that are fewer in number and over a shorter time period than the pulses 32. These extend on the time axis of FIG. 2 from point 37 to point 38. These bursts 36 are also frequency modulated with the closest groupings appearing opposite peak 29 of FIG. 2 and greater spacing near time points 37 and 38.

Referring now to FIG. 4 there is illustrated the fact that a single burst shown as straight lines 32 or 36 on FIG. 3 are made up of ten to twenty separate microwave pulses. The duration of the burst is between 500 nanoseconds and 100 microseconds, with an optimum of 2 microseconds. The duration of each pulse within the burst is 10 nanoseconds to 1 microsecond and a time duration of 100 nanoseconds is preferred. The bursts 32 of FIG. 3 are spaced non-uniformly from each other caused by the frequency modulation of 12. FIG. 4 depicts a burst. Each vertical line 40 in FIG. 4 represents a single pulse. Each pulse is represented by the envelope 41 of FIG. 5. The pulses within a burst are spaced uniformly from eachother. The spacing between pulses may vary from 5 nanoseconds to 10 microseconds.

Referring now to FIG. 3, the concentration of bursts 32 opposite the peak 28 of FIG. 2 can be expressed as a frequency of repetition. I presently prefer to adjust

the FM capable generator 12 to have a maximum frequency of repetition in the range of 25 Khz to 100 Khz. I deliberately keep this range low to reduce the amount of heating caused by the microwaves. The wider spacing of the pulses 32 opposite the cutoff points 33 and 34 of FIG. 2 can also be expressed as a frequency of reptition and I presently prefer a minimum repetition rate of 1 KHz. I find that this low repetition rate, altnough in the audio range, does not disrupt the transmission of auoio intelligence to the person 23. The aim, again, is to reduce the amount of heat transmitted to the subject 23.

OPERATION

Referring to FIG. 1, **the intelligence to be perceived by the person 23 is introduced at the audio source 10 which may be a microphone for voice, or a tape player for music, instruction,** etc. This audio signal is transmitted to the FM capable generator 12 and to the comparator 14. The comparator 14 compares the positive portions of the audio wave with voltage from the voltage standard 16 and when the audio wave instantaneously exceeds the standard voltage, the FM generator is actuated by the wire 17 connecting the comparator 14 and the FM generator 12. The FM generator 12 then sends a plurality of signals to the microwave generator 19 at each peak of the audio wave above the voltage standard.

This is shown graphically in FIGS. 2-5. The audio signal 27 of FIG. 2 exceeds the standard voltage 31 at point 33 whereupon the FM generator 12 starts emitting burst signals 32 at its lowest frequency of about 1 Khz. As time progresses past point 33 the voltage above the standard increases and the FM generator 12 responds by making the burst signals closer together until at peak 28 the maximum density of burst signals 32 is achieved, for example at a frequency of 50 Khz. The time duration of each pulse 40 (FIG. 4) is also controlled by a fixed adjustment of the FM generator 12 and for example the duration may be 100 nanoseconds.

The frequency modulated burst signals are delivered by FM generator 12 to the microwave generator as interrupted dc and the microwave generator is turned on in response to each pulse 40 and its output is delivered by coaxial cable 21 to the parabolic antenna 22 to project microwaves onto the head of a person 23. These microwaves penetrate the brain enough so that the electrical activity inside of the brain produces the sensation of sound. When the parameters are adjusted for the particular individual, **he perceives intelligible audio, entirely independently of his external hearing organs.**

PRESENTLY PREFERRED QUANTITIES

As mentioned previously, I prefer rhat the standard voltage 31 of FIG. 2 be

about 50% of peak audio voltage. This not only helps to reduce heating in the person 2 but also reduces spurious audio. This 50% is not vital and the useful range is 25% to 85% of peak audio.

The minimum burst repetition frequency (for example at time points 33 and 34) is preferably 1 KHz and the maximum repetition frequency is in the range of 25 KHz to 100 KHz, with the lower frequencies resulting in less heating.

The time duration of each individual pulse of microwave radiation is in the range of 10 nanoseconds to 1 microsecond as indicated in FIG. 5, with the shorter time periods resulting in less heating.

CONTROL OF POWER OUTPUT

As stated above, I maintain the power output of the parabolic antenna 22 within the present safe standard of 3.3 mw/cm2 (3.3 milliwatts per square centimeter). I control the power output by controlling the strengtn of the audio modulation. This results in a duty cycle of 0.005, the decimal measure of the time in any second that the transmitter is on full power. The peak power level can be between 500 mw and 5 w and at 0.005 duty cycle these peaks will result in an average power of 2.5 mw and 25 mw respectively. However, these values are further reduced by adjusting the audio modulation so that zero input produces a zero output. Since a voice signal, for example, is at maximum amplitude only a small fraction of the rime, the average power will be below the 3.3 mw/cm2 standard, even with 5 watts peak power.

THEORY OF OPERATION

I have not been able to experiment to determine how my microwave system works, but from my interpretation of prior work done in this field I believe that the process is as follows. Any group of bursts related to the audio ek 28 of FIG. 2 causes an increasing ultrasonic build up within the head of a human being starting with a low level for the first bursts pulses and building up to a high level with the last bursts pulses of a group. This buildup, I believe, causes the direct discharge of random brain neurons. These discharges at audio frequency create a perception of sound. This process, I believe, bypasses the normal hearing organs and can create sound in a person who is nerve-dead deaf. However, this theory of operation is only my guess and may prove to be in error in the future.

APPARATUS

The apparatus of FIG. 1 for carrying out my invention may include as a microwave generator Model PH40K of Applied Microwave Laboratories and described as Signal Source. The cable 21 connecting the microwave generator 19 and the antenna is RG8 coaxial cable by Belden Industries. The antenna 22

may be a standard parabolic antenna. The FM generator 12 has to be specially built to include the spacing runction which is obtained by a frequency generator built into a standard FM generator.

I have described my invention with respect to a presently preferred embodiment as required by the patent statutes. It will be apparent to those skilled in the technology that many variations, modification and additions can be made. All such variations, modifications and additions that come within the true spirit and scope of the invention are included in the claims.

Re: US Patent 4877027: Microwave Technology for Making People Hear Voices in Head

CIA Project Pandora Radio Remote Brain Manipulation

Dr Ross Adey's research at the Brain Research Institute of the University of California, was funded by the CIA. In their Pandora project a catalogue of different brain signals for specific actions, emotions and pathological states of mind were recorded. It was found that when microwaves were used to fire these signals at victims' brains, they experienced the moods, behaviour, and the pathological states,

carried by the signals. This meant that by mimicking natural brain frequencies, the human brain could be controlled remotely by use of extremely low frequency broadcast carried by pulse modulated microwave beams (ELF pulse modulated microwave remote mind control technology). MICROWAVE MIND CONTROL by Tim Rifat

The TETRA system pulses at 17.6 Hz broadcast at 400 MHz which is essentially the Pandora Project funded by the CIA in the late '60s and early '70s. Dr Ross Adey, the chief researcher on the Pandora Project has released a video to leading UK researchers which proves that not only does the TETRA system cause ELF zombification by massive release of calcium ions in the cerebral cortex and the nervous system, but the activated calcium ions also cause massive hormonal disturbances which lead to frenzied imbalances, emotional and physical states..... Use of the TETRA system by the police will lead to psychotronicaly controlled officers who may be totally controlled in any situation and are very useful for states of economic or social chaos where extreme and violent behaviour is needed without any conscious or moral compunction - so-called police robots. [2001] The TETRA System: Mass UK Mind Control Technology and the Zombification Of Britain's Police is Now A Reality by Tim Rifat

In quoting this research I refer to documents listed under Reference 15. So sophisticated is this research, and I refer to Operation Pandora Joint CIA/MI6 Operation since the 1960s, Operation Woodpecker USSR 1976, Operation HAARP still running in USA; they are able to define specific pulse frequencies to cause specific brain malfunctions or illnesses. For instance: 4.5: Illness Caused, 6.6: Depression/Suicide, 11: Manic behaviour/Anger, 25:Blindness if aimed at the head/Heart attack if aimed at the chest. Other consequences of frequencies used but not listed here are hysteria, trauma, lust, murder and cancer, and may all be induced. Confidential Report on TETRA for the Police of England and Wales by B Trower

I need your help. I am a Targeted Individual, by a criminal gang, who talks to me via Microwave Hearing Effect transmissions, stalks me verbally via Microwave Hearing Effect 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 Microwave Hearing Effect 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 Microwave Hearing Effect 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, exploitation and sleep deprivation. 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 Microwave Hearing Effect transmissions has somehow tagged, tapped, and set-up into me/my body and are verbally stalking me 24/7/365, and physically when I leave my home. I am a 62 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 (43 years old) and Alicia Ailene (Carr) Bailey (44 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 Microwave Hearing Effect transmissions to me, to his peer gang who is**

the paid criminal staff of the 24/7/365 surveillance/monitor/stalk and perpetrators of the Microwave Hearing Effect 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 the Microwave Hearing Effect,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, electromagnetic spectrum surveillance has characteristics very similar to the National Security Agency's (NSA's,) although I don't think Raymond Bailey's electromagnetic spectrum 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 electromagnetic spectrum 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, Microwave Hearing Effect 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 the Microwave Hearing Effect transmissions on me exactly after it has left my mouth and is in my epiglottis/larynx. She goes in spurts with the Microwave Hearing Effect 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 the Microwave Hearing Effect 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." <u>They almost always preface every statement with "Ray."</u> When they speak to me intrarcranially/in my head, using the Microwave Hearing Effect 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 6 years, the criminal gang does all of the Microwave Hearing Effect 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 the Microwave Hearing Effect transmissions on me, **<u>I would hear Raymond Bailey tell the gang, "Follow her around in her ears." Or, "Follow her around in her head."</u>** That means no matter what I do during the day or no matter where I go, the gang is to stalk me and keep talking to me in my ears or head through the Microwave Hearing Effect transmissions.

The criminal gang is able to create vibrations, at their will, that I can feel bounce around me and under my feet through the electromagnetic fields/energy.

Raymond Bailey and his associates'/gang have a paid criminal staff monitoring/surveillancing me 24/7/365 consisting of one female, white, about 44 years old, a male with a deep/low voice, probably about 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 40 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 the Microwave Hearing Effect 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 the Microwave Hearing Effect transmissions on me. At night when I lay down for bed, they keep talking in my ears or head through the Microwave Hearing Effect transmissions 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; **<u>as of this date, because of the criminal gang's constant Microwave Hearing Effect transmissions, I have had sleep deprivation for months, no REM cycles.</u>** 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 the Microwave Hearing Effect 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 Microwave Hearing Effect transmissions were to start, immediately, perpetrated by the criminal staff female on the shift.** There are no uninterrupted 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 of the 24/7/365 use of the Microwave Hearing Effect transmissions. **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 into my head, using the Microwave Hearing Effect transmissions.

When I am driving my car, their Microwave Hearing Effect 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 44 years old, 99% of the time, and the paid staff male with the deep, low voice, 1% of the time, verbally stalk me using the Microwave Hearing Effect transmissions, to the 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 as a consequence 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 electromagnetically 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 through the use of the Microwave Hearing Effect 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., Amanda and Brannon Marshall and the previous renter 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 and it is aggressive.** 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 can understand it or even want to. (The paid staff criminal 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 Microwave Hearing Effect, electromagnetic spectrum 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 Microwave Hearing Effect, electromagnetic spectrum surveillance is tied to the Internet or P2P 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 and Lakshmi Gara, my common wall neighbors, 401 Locksley Dr., Phyllis and William Lamack, Owner of ERA Countrywood Realty, South Barrington, IL (who also stalks me,) 351 Locksley Drive, renters, License Plate A624050 (who also stalks me,) 205 Locksley Dr., Trivini and Vishnu Gaugamela, 423 Locksley Dr., Rebecca and Shaugn Davenport, 425 Locksley Dr., Andrej Petrykowski and his live-in, 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 Neirynck 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 and Stacy Lindemann 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 was 40 years old and I am 5'1" and was 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 to me using Microwave Hearing Effect 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 using Microwave Hearing Effect 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 Microwave Hearing Effect 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 Microwave Hearing Effect, electromagnetic spectrum surveillance system on who aren't even aware of it.** **It is extremely dangerous for this criminal gang to be able to hunt, stalk, Remote View, try to choke a Targeted Individual while they are eating their meals, and distract their attention while they drive, anyone they choose, plus know every detail of their life, to the nano.**

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 stalks me using Microwave Hearing Effect transmissions 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 or night, not one nano.

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 using the Microwave Hearing Effect to talk 24/7**. 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."** I do not even have the freedom to go to the toilet without this criminal gang verbally stalking me, detailing to me through the Microwave Hearing Effect, what I am doing and then either the female or **male saying "Ray" 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 the Microwave Hearing Effect's result is "hearing voices," I should have it checked

out through the medical profession. **I know my situation is not medical. It is a result of the Microwave Hearing Effect being used on me 24/7/365, criminally and illegally.**

I have been trying for five (5) years to have our government or someone to do the lawful and right thing and figure out and confirm the Microwave Hearing Effect and its surveillance capabilities and 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 immediately start to use the Microwave Hearing Effect and 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 criminal 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 the precise moment I swallow, the paid staff criminal female will use the Microwave Hearing Effect to say "Ray." Most of the time, she says it jokingly, tongue-in-cheek. 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 Microwave Hearing Effect method/device, 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 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.

Attachments: Picture – Raymond Bailey
Picture – Bhaskara Gara
Billboard – Los Angeles, Stalking and Remote Electronic Assaults