

Praise and Criticism for "Just a Bunch of Crazy Ideas"

"Many of Ponnapalli's essays are intellectually challenging, short, well written, and entertaining. ...Ponnapalli's enthusiasm for each topic is refreshing and can't help but pique one's interest in looking at the stuff of life with a more creative eye." – Patty Sutherland, Foreword Reviews

"... This book is infused with humor and encouragement to readers to discuss the author's

suggestions and come up with their own creative solutions.....Just a Bunch of Crazy Ideas is fun and informative. The author presents a broad spectrum of topics that will challenge readers and possibly spark a streak of innovation among them." -Melissa Brown Levine, Independent Professional Book Reviewers

Some of my fondest memories of university were those informal gab sessions in the common room. You'd walk into the room and two or three guys would be adamantly discussing how to solve world hunger or which Star Trek captain would win in a fistfight. Before long, others had joined the conversation. Everyone was welcome.

Just a Bunch of Crazy Ideas reminds me of those times. We were all so filled with ideas, most of which had very little to do with what we were studying. Afterwards, paying our bills and living our lives took precedent and no one ever made good on any of those crazy ideas.

As with all those gab sessions in the university common room, Just a Bunch of Crazy Ideas presents some good ideas and some not so good ideas. Take them as you will. Laugh at them or be inspired by them. Please, please find a better way to deal with cat litter odor but don't you dare change my hockey game". —Tami Brady, TCM Reviews

- "... In fact, every reader will find this book extremely interesting and will, perhaps, spark other imaginations out there to sit down and create!" Amy Lignor, Feathered Quill Reviews
- "The act of brainstorming can result in new ideas and surprising results. The author ends each chapter with the words, "Discuss and enjoy!" That is exactly what the reader of this "bunch of crazy ideas" will do." Libby Grandy, US Review of Books
- "... Ponnapalli's thinking shows both the strength of inspired dilettantism and the need for expert analysis to rein it in. Still, there are some nifty ideas here, and even the questionable ones will provoke reflection. A stimulating grab bag of outside-the-box—sometimes out-of-left-field—brainstorms".- Perry Crowe, Kirkus Indie Reviews

"Ponnapalli's crazy (impulsive, but fun and thought provoking) ideas cover some timely and popular topics; U.S debt and defecit, overweight, stock market, space exploration, alternative energies, cat litter and more. The book is easy to read."- Recommended & Reviewed in The Mindquest Review of Books, by Lightword Publishing

"There has never been a more accurately or honestly titled book than that of Just a Bunch of Crazy Ideas... As a handbook of solutions to major and minor problems, it falters a bit, but as a conversation sparker, Just a Bunch of Crazy Ideas is a success." San Fransisco Book Review – September 15, 2011

"Sometimes you throw things at the wall and see what sticks. "Just a Bunch of Crazy Ideas" is a collection titular crazy ideas from Pardu S. Ponnapalli as he offers his random thoughts about the world as he sits on his Ph.D in Physics that's currently getting him nowhere. With a decent dose of logic and humor, "Just a Bunch of Crazy Ideas" is a thoughtful collection of life and everything else, highly recommended." Willis M. Buhle, MidWest Book Review

Just a Bunch of Crazy Ideas, 4th Edition

By

Pardu S. Ponnapalli, Ph.D.

Dedicated to

My son Krishna, who changed my world and who I cherish dearly

and

My wife Mona who is making me look forward to retirement so I can spend more time with her

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Preface to the 4th Edition

"Advances are made by those with at least a touch of irrational confidence in what they can do." (Joan L. Curcio)

My book has come under numerous criticism and praise since the 3rd edition. It's hard to review all of them, but they seem to fall into the following categories:

- A) Criticism: The ideas are half baked and therefore not worth considering. There is even an implication that I should not have written them down since they were half baked and not "clearly thought through". Praise: The ideas are mostly well thought out and plausible.
- B) Criticism: The writing is poor and amateurish. Praise: The writing is lucid and engaging.
- C) Criticism: The ideas are of no practical use. Praise: I can really see where a lot of these ideas could be put to practical use.
- D) Criticism: The ideas are irrational. Praise: Most of the ideas are well thought out.
- E) Criticism: The ideas are very pedestrian, outdated or just boring. Praise: The ideas are exciting, thought provoking and clever. Obviously, there were combinations of these factors. One critic, for example, thought the ideas were well though out (D/Praise), but also pedestrian and boring (E/Criticism). I really appreciate these comments, even though I don't agree with all the criticism. I read every review very carefully. Sometimes I read them two or three times to make sure I understand them and to see if it offers me scope for improvement. Since I was encouraging open discussion on my book, I was not surprised to see all these permutations. It was really interesting that for any given idea, I could find examples of it being lauded as brilliant and inspiring and examples of it being ridiculed as silly, outdated, boring or just useless. I suffered some serious cognitive dissonance pondering whether or not my space elevator was inspired brilliance, or just such a ridiculous idea that I shouldn't have bothered writing about it.

All of this reminds me of the following story: An American scientist once visited the offices of the great Nobel Prize-winning physicist, Neils Bohr, in Copenhagen, and was amazed to find a horseshoe was nailed to the wall over his desk. The American said with a nervous laugh, "Surely you don't believe that horseshoe will bring you good luck, do you, Professor Bohr?" Bohr chuckled. "I believe no such thing, my good friend. Not at all. I am scarcely likely to believe in such foolish nonsense. However, I am told that a horseshoe will bring you good luck whether you believe in it or not! How can one argue with such logic?" If one of the greatest scientists in history could allow himself some leeway for irrationality, can't the rest of us bend a little? I always find this story a useful reminder that assuming that a rational approach to the universe is infallible is also a belief system. I think you could even argue that such a belief system is itself irrational, in view of the amazingly incomprehensible, irrational accomplishments of human beings against all rational odds. There is a danger that we have become so rational and analytic that we have lost touch with our devilish irrational selves

I read a story about a team of engineers who managed to build a car that rolls up into a wheel. Our greatest constraint is probably our own imaginations at this point. Our belief in our immortality (until we are so close to death we can't deny it's pull), our struggles against all odds, our ability to see hope even in the most desperate situations – all these irrational beliefs fuel our existence. They drive us to greater heights. The irrational, insane ideas of today are the realities of tomorrow.

September 9, 2012

Preface to the 3rd Edition

A book is the only place in which you can examine a fragile thought without breaking it, or explore an explosive idea without fear it will go off in your face. It is one of the few havens remaining where a man's mind can get both provocation and privacy." Edward P. Morgan

I have received many comments (positive and negative) about my ideas and their presentation. There was some criticism of my writing ability by some critics. Others merely found the ideas boring and mundane. A vast majority of the critics were positive and the reader comments were overwhelmingly positive (an average of 4.8 stars out of 5 on Amazon).

I added a chapter on the melt throughs of the Japanese nuclear reactors about a year ago. I also supplemented each chapter with references. Wherever additional recent developments were interesting, I wrote some relevant postscripts to each chapter. An added touch is the inclusion of some of my favorite quotes at the beginning of each chapter.

I want to thank all the readers and critics whose insightful comments have made me think hard about how to improve the book and add ideas.

April 3, 2012

Preface to the 1st Edition

The purpose of this book is to share a bunch of "crazy" ideas. There is no claim that any careful research is done. It is more like a brainstorming session where any idea that comes to mind is presented. That is why you get a wide range of topics, from dealing with cat litter to exploring space.

You may wonder what the value of this is. Maybe the ideas are all not worth much in practical terms. Or perhaps there are some gems and some real bad ones. What's the sense in me writing about these ideas?

Actually, I was wondering the same thing for many years. I have thought about writing this book for a lot of years, and never went through with it until recently.

I think we all start out when we are young thinking we are going to change the world. Especially in university, when I was studying physics, I had constant discussions with my colleagues about revolutionary ideas. As you get older, you settle down to a regular life that for the most part involves paying bills with the money you earn. Most of our energies start getting devoted to survival. Before you know it, you are wondering about managing retirement and you are left with a sense that somehow life passed you by.

The reason for this transformation from a wild eyed youngster with grand ideas to a well settled mortgage paying robot is fairly plain- most of us are just struggling to get by in life. Few of us have the luxury of picking and choosing what we do for a living. My own entry into the IT field was due to the inability of finding any physics related employment after doing a Ph.D. The job market was poor, and I looked around for a marketable job. I have done fairly well in my chosen profession, but I am constantly haunted by the thought that I was meant for something else. I suspect I have a lot of company in this regard.

It seems to me our sense of intellectual courage also wanes with age and seniority. We may have ideas that we think are worthwhile, but we dismiss them for the usual reasons: 1) People will think they are stupid (a perennial favorite). 2) I bet someone has thought of it already (yes, but they might not have voiced it). 3) I want to stick to the safe stuff that's in the realm of my expertise.

It all becomes a tedious cycle. We end up doing something by rote, or maybe finding just a few ideas in our chosen profession that are interesting, and being content to live out our lives without a sense of wonder or exploration.

So this book is my attempt to revive a sense of wonder and speculation. As I said before, I expect to be ridiculed by people who don't want to explore and stretch their minds. On the other hand, if you feel like just having a little intellectual fun, suspend your disbelief you might enjoy it. The ideas are fanciful and out there to savor and enjoy.

One of the best things about tossing out an idea is the fervent hope that someone really smart (much smarter than me) is reading them, if only for casual fun. And maybe that will provoke a much more detailed and well-formed idea on their part, no matter how silly my idea is. That is one of the greatest joys in brainstorming- the ability to provoke extremely intelligent people to come up with revolutionary thoughts and ideas. The beauty of this process is that your ideas don't necessarily have to have any detailed merit- just the germ of an idea that encourages others to come up with better ones.

I have kept this book short so that it's easy to get the gist of the ideas fairly quickly. A vast

majority of people have good imaginations and can extrapolate from core ideas very quickly. I wanted to put together something that could easily be read in an airplane or on a train commuting somewhere. I have however, included economic arguments as part of the discussion of the ideas. Almost everything nowadays depends on financial decisions. You can have the greatest idea in the world, but if there's no clear path for commercial viability, it will probably die. On the other hand, even the most half-baked idea can survive as long as it can stoke the interest of the general public and people want to spend money on it...

I hope what happens is that people read this book and it provides a lot of fodder for young minds. I hope they sit around a bar have a few beers and have raucous discussions about the ideas I presented. Perhaps they will all be ridiculed. Or perhaps it will spark some follow up ideas that are really great.

Read, enjoy and discuss. I hope you have as much fun reading this as I had writing it.

Chapter 1 Space Elevator

'The reasonable man adapts himself to the world; the unreasonable one persists in trying to adapt the world to himself. Therefore all progress depends on the unreasonable man.' George Bernard Shaw, Man and Superman (1903) 'Maxims for Revolutionists'

Arthur C. Clarke was a great author and a very imaginative man. One of the structures he envisioned was a space elevator. A number of people are working on this venture as we speak. There are a number of technical barriers, involving strengths of cables and other issues. I will not review all the efforts to date, but it seems to me we could build a space elevator with existing technology with a slightly different strategy.

A space elevator effort like this, spearheaded by the United States, would capture the imagination of the world much as the effort to put a person on the moon in the 1960's. It is hard to describe the world wide sense of wonder inspired by the space race of the 1960's. I remember watching it on a small black and white TV-I saw one of the later ones, not Apollo 11, as I did not arrive in Canada until 1970. I think a space elevator would have a similar effect on the world and reestablish the United States as a preeminent leader in technology. It would also give a national focus to the effort -again very similar to the situation of the space race in the 1960's.

How do I suggest going about this? Am I delusional in thinking this is possible with existing technology? I hope not. Let us start with the tallest building in the world - the Burj Khalifa in Dubai. It stands a regal 2717 feet tall, a tad more than half a mile. So we have the technology on an existing scale already that can pull us up about one half of a mile. So you start with two adjacent blocks. The first block will be identical to the Burj Khalifa- it will have habitable floors and an elevator that takes you all the way to the top. The second block will be mostly a block of cement. You can have solar panels surrounding it and appropriate wiring and collection to help power the first block. There is nothing habitable in this block- the main purpose of this block will become apparent. If you think of this plan in terms of Lego blocks, block 2 will be a solid Lego block to build upon; block 1 is the Burj Khalifa building. This is shown in the diagram below:

Main building with offices ,
restaurants and observation
spots
Solid Block
Adjacent to
main Building

Diagram 1 First Phase of Space Elevator Construction.

The block on the right represents the solid block adjacent to the main building. So here is the trick. We now have an elevator that takes us up one half mile. Also note from a business sense that there's an opportunity to generate revenue from this investment already by renting out office space, restaurants and perhaps even living quarters. This is important because this means a phased plan like the one I am proposing funds itself along the way and does not have to be just a pipe dream. Now we can move to phase two. You use the existing infrastructure and build another Burj Khalifa, on top of the 2nd block. True, it will be a very tedious process as you carry all the material you need up via freight elevator that's separated from the usable elevators. But I don't think there's anything that forbids you from accomplishing the task from a technical point of view. It's just going to be difficult and time consuming, but definitely possible. I'm assuming here that there's a feasible way of building a solid support structure along an existing habitable building. This seems fairly intuitively clear that it should be possible. The building on top of block 2, which we will call block 3 will have normal elevator structure. This situation is shown in Diagram 2.

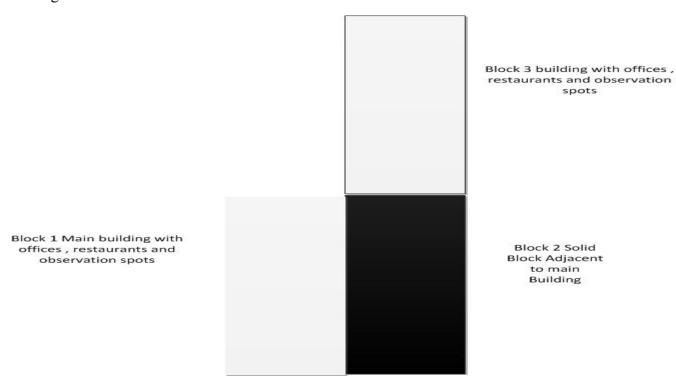


Diagram 2 Phase 2 of Space Elevator

Our space elevator works as follows now: You go up to the top of block 1, then you switch to horizontal tracks (once you reach the maximum height), and glide over to block 3's elevator. Then the elevator just goes up block 3 like a normal elevator. I admit there's some fancy engineering required to make this happen, but it seems to me it's mostly track switching technology, not dissimilar to the way trains switch tracks (although trains don't do it perpendicularly). If the perpendicular track switch is the problem, you could probably do a different angle or mechanism.

I'm sure you see the pattern by now. You now use block 2 and block 3 to construct a solid block 4. You have to make sure that block 2 and 3 are constructed in a manner so that you can gradually lay out a solid block 4. Also, by now, with intervening years of technical advances you can build on a solid block 4 a block 5 that will be 1 mile in height. For each iteration, you double the height of the building. You can pause the project any time along the way, and do some revenue generation and guided tours- one can imagine how spectacular the views will be even after 3 or 4 iterations. The doubling makes sense since our technical abilities are increasing exponentially in quite a few fields. You just continue to iterate until you get to the ultimate goal.

If technology has improved at a faster pace than expected, you can quadruple the height (or use an even higher multiple).

The beauty of this approach is that you don't have to worry about creating and sustaining cables with huge tensile strengths. It relies on known technology, some scaling, and repetition of building blocks.

The country that does this first will have a monstrous advantage in terms of space exploration. The capital outlay could be recouped as we go along this phased plan. The discoveries made in a venture like this would propel the United States back to being the premier technical power.

The plan will require a lot of land, but also offers a super commercial opportunity. As each phase gets done, you will have visitors from all over the world flocking to get the views. You could have hotels and balconies at the top of each phase. Restaurants with an outside view could charge exorbitant amounts for the rich experience. A good place for this might be in the mid-West where there is plenty of land. As the project gains momentum, all top researchers, engineers and others will want to gravitate to the United States to participate. It's a technical dream come true. The plan would be to have multiple sets of elevators, some suited for straight cargo runs into space with no people, and others for people to go up at their own pace and take in the views

Solar panels adorning the solid blocks built along the way could be fed back to the main grid of the United States. As the elevator/hotel construction becomes larger this will provide more and more of our energy needs, as well as supporting energy for the structure itself. We could at least expect the structure to be carbon neutral. Anything more might be too optimistic, but who knows? The way solar panel technology is advancing, there might be more gain here than can be imagined. Towering above cloud cover, the solar energy supply would be more plentiful.

Discuss and enjoy!

Notes to the 3rd Edition for Chapter 1

Many readers felt that this idea was the most impractical one in the book. There are actually many engineers who have done serious research into the field. I suggest the readers start with the following link:

Space elevator

You are perfectly entitled to view my approach as deficient or impractical, but the overall structure will be built within 50 or a 100 years , in my opinion.

Chapter 2 Alternative Energies and Energy Conservation

'The most important environmental issue is one that is rarely mentioned, and that is the lack of a conservation ethic in our culture.' Gaylord Nelson

Recently, I started to read more about all the alternative energy means that are currently being investigated. There is an astonishing array of these, and is a good indication of how many clever and resourceful people there are on the planet. Wind farms, algae energy, biomass energy, solar are but a few examples.

Most of these face economic constraints. The capital and the infrastructure required represent formidable obstacles, although the price point for the alternative energies seems to be coming down quite a bit. I'm following all these technologies enthusiastically. There is even one company that is making exercise equipment so that the energy from it can be fed back to the grid. Who would have thought?

I'm certain that in the long run quite a few of these ideas will succeed in powering our nation. In the meantime, however, I am wondering if there is anything that we can do in the short term that does not require any massive investments or changes. Ideally, we would just provide incentive for people to use energy more efficiently, and that would probably save us a huge amount in energy use. This is the conservation side of the equation. It's the difficult side, because in most advanced industrial nations, including the United States, we consume enormous amounts of energy per capita. And it becomes a habit, so it's a hard habit to break.

This leads me to believe that we need to tackle the conservation side of the energy equation in a completely different way than the alternative energy side. Basically, the alternative energy side does not address the profligate energy habits of citizens of the industrialized and emerging nations. It just tries to accommodate the ever burgeoning demand side with increased supplies. Most calculations I have seen indicate that this is a losing battle. At some point we have to address consumption issues and try to minimize the consumption.

How do we do this? You cannot force people to do it in a democratic society. Even if you could, it would probably be counterproductive. Most policies that are just forced on people end up being either ignored disrespected or accepted grudgingly. It's not a good way to try and change things.

My idea is to use our tax system as an incentive for people to reset their thermostats. It's fairly easy to monitor the average temperature of a house using existing technology. The utility company would have knowledge of the average temperature use in your dwelling on a daily basis. Then you would get a tax credit based of \$100 per degree (Fahrenheit) that you are above 70 degrees (in the summer months) and below 70 degrees in the winter months.

Suppose, for example, you can tolerate setting your AC to 85 degrees in the summer. My wife and I have experimented with this and found we can set it around this range. That would qualify us for a tax deduction of \$1500 per month for the summer months. The government would not rely on our word for what we set it as, as there would be a record at the utility company attesting to our average temperature maintenance. Similarly, in the winter, say we could tolerate setting the thermostat at 60 degrees. That would give us a credit of \$1000 per month for the winter months.

I bet this sort of scheme would do a lot more to encourage people to turn to conservation than all the educational efforts of the environmental movement. I applaud their efforts and strongly believe they should continue, but most people respond to economic incentives more readily. If

the tax credits turn out to be too large, you can adjust the \$100 per degree number accordingly. Try say \$50 per degree.

Everyone would do it to the extent that they are motivated to save in this plan. Someone who likes the temperature at 70 degrees all the time would just leave it that way. Others who need the break would experiment and figure out their tolerance. Some, like me and my wife, believe that conservation is good in principle and would gain a reward for their existing behavior. People who need the temperature set high, like the very old and very young among us, would not change their behavior. Young people who are more adaptable would avail themselves of the credit.

This idea is somewhat similar to the smart energy idea being used in some states, but without any coercion or technology trying to force any power savings. The only thing the technology would measure is what you keep your house at - I don't think that's difficult to do these days. There's no technical intervention trying to automatically meter your power usage- technology that has had some backlash.

I don't have a good way of calculating how much energy this would save, but it seems to me intuitively that there's scope for huge gains here. There is also the enormous long term advantage that you would change the behavior of quite a few people, perhaps an entire generation. Quite a few folks would see this as a fairly quick way to pocket a substantial amount of cash and adjust their behavior accordingly. I think this would accomplish more than a lot of the existing incentive programs that are more difficult to take advantage of. This would in the short term reduce our dependency on fossil fuels. I think that is better for the planet, as well as the security of the United States. One good benchmark I can tell you is that my wife and I have reduced our gas bills to a very small amount by exercising discipline in the summer and keeping the temperature high. We use a negligible amount of energy in the summer, despite some hot Maryland summers. We have not yet mastered this art for the winter, but I'm sure a tax incentive would entice us to do so. The average of our natural gas bill is now 37 dollars per month, which a rather good value is considering the number of cold and hot months we have in Maryland. Our natural gas bill actually shows 0 cccf (100 cubic feet of natural gas) usage for summer, which means it's so low it registers as zero to the accuracy of the bill computation.

Discuss and enjoy!

Notes to the 3rd Edition for Chapter 2

An excellent discussion of the savings involved in turning down thermostats is available at this web site:

Energy savings

Chapter 3 More Thoughts on Energy Conservation

'Here is what I think the truth is: we are all addicts of fossil fuels in a state of denial about to face cold turkey' Kurt Vonnegut, Cold Turkey

Another idea of mine for saving energy involves our favorite technology in the United States: our automobiles (and other personal vehicles). Many reasons exist and have been elegantly articulated as to why we should drive small cars, environmentally friendly cars, or even scooters and other vehicles. For the most part, this has not persuaded any change of behavior on the part of the American consumer. Again, we are left with the challenge of how to provide incentive for people to save some energy here without suggesting major alternative changes to their lifestyles. Is there a mechanism by which we could live largely as we do now but show an immediate improvement in our gasoline consumption?

I think there is a simple technical solution here. When I drive to work each morning, I see a number of equally frustrated commuters stuck in traffic. Traffic in the Washington DC area is among the worst in the nation. It's an ugly experience to commute to work for the most part.

What stands out is that most vehicles can accommodate four people but there is only one person driving. I know this is not an earth shattering observation, and people try to address this with car pool measures and other techniques. My question: Is there a simple technical/mechanical method to have the car to a more appropriate size so that one person is driving the "right" sized vehicle for themselves, without compromising their regular need for the full size vehicle?

The answer is to introduce a 4 seat to 2 seat conversion technology I think. Like the convertible tops that fold in and out in the car, you have a four seat to two seat converter. It would decouple the two back seats and assemble the vehicle back together again. There are some keen mechanical challenges here; especially involving the exhaust system, but I think they can be overcome by an ingenious mechanic out there.

So once you hit your magic button in the morning, your usual four seater turns into a two seater. You do your daily commute, and any time you need the full size feature, you would reattach at a point and hit the magic button again. Should an emergency arise and you needed the full size in a hurry, dealers would stock extra back seat components which again the magic button would reattach.

Think how simple this would be if it's mechanically feasible. It's true that the massive components of a car do not reside in the back seat. The engine is in the front part for most cars. However, say the savings is only 5%-10% because of the decreased mass. If you multiply that by the number of vehicles traversing our highways every morning, you quickly realize the significance.

The main obstacle I see here is that there's a mechanical challenge of disconnecting the back seat portion, and then there's the challenge of keeping the rest of the car aerodynamically tuned with a different configuration. I'm sure there are a number of interdependent components that would require adjustment when you flipped modes. But I don't think any of them are insurmountable, and in the end you would just have a switch that would flip modes and make all the adjustments after you physically remove the back seat component.

This plan requires no fancy new technology beyond the coupling/decoupling scheme I have described. If implemented as convertible rooftops are it's such a minor nuisance/adjustment to your way of life that I think most people will gladly accept it if there's a significant savings in fuel costs. With fuel costs rising the way they are now, I think that's even more incentive for the

average Joe to take advantage of this. What could tank this plan/approach is if the savings turns out to be negligible. I don't think that's the case, but that's just a gut feeling, and I haven't done any numbers to prove it one way or the other.

If you needed a back seat component in an emergency, the dealers could stock standard additions. Or there could be an evolution depending on demand where some 24 hour stores would base their business on renting components on demand.

A plan like this can be adopted for any type of car- electric, hybrid, gasoline, or whatever the underlying technology is. So it has wide applicability regardless of how environmentally friendly we make the fuel. The basic point of physics is that the reduction in mass will help minimize the fuel burned.

Discuss and enjoy!

Notes to the 3rd edition for Chapter 3.

At the time of this edition (June, 2012) gas prices have risen significantly in the United States again. An average price is hovering around \$4.00 per gallon. I think any ideas to cut costs to the average citizen deserve a close look at this price point.

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