



LETTERS

edited by Jennifer Sills

NextGenVOICES

Results: Experiments in Governing

If you had just been elected to your nation's highest office, what would you say in your inaugural address? What is the greatest challenge facing your country, and how would you use science to address it? In October, we asked young scientists to envision this scenario and send us their speeches. We heard from more than 200 readers, with a range of concerns spanning from health to electricity to politics. Common themes included global warming, energy, sustainability, and biodiversity. A sample of the best responses can be found below. To allow for as many voices as possible, in some cases we have printed excerpts of longer submissions (indicated by ellipses) and lightly copyedited original text for clarity. To read the complete versions, as well as many more, go to <http://scim.ag/NextGen5Results>.

Submit Now: Science Communication's Future

Add your voice to *Science*! Our new NextGen VOICES survey is now open:

Ideally, how will scientists share their results with each other and the public in 50 years?

To submit, go to <http://scim.ag/NextGen6>

Deadline for submissions is 15 February. A selection of the best responses will be published in the 5 April issue of *Science*. Submissions should be 250 words or less. Anonymous submissions will not be considered. Please submit only once.

NextGen Speaks

MY FELLOW AMERICANS, WE AS A NATION AND as a global community stand opposed to the greatest threat our world has ever known...: global warming.... As president, I hereby announce a government-wide effort to develop and implement a comprehensive science policy that will allow us to overcome global warming. I therefore call upon Congress to triple the budgets specifically designated for clean energy research across our basic research agencies. To fund this work, and to unleash the power of the market to reduce greenhouse gas emissions, I also insist that Congress finally do what must be done: pass a comprehensive carbon tax. My fellow citizens, we have dithered too long and thus far

failed to confront what amounts to an existential crisis for our planet. I therefore ask all of you to join with me so that we might save our green Earth, our only home, not only for ourselves, but also for all posterity!

BENJAMIN H. KRINSKY

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CANADA'S GREATEST CHALLENGE TODAY IS THE efficient and sustainable production and utilization of energy. Throughout all human history, it is our mastery of various forms of energy that has driven our civilization, multiplied our capabilities, and raised our standard life at all levels. We substituted manual labor with animal labor. Our steam engines revolutionized transportation. The advent of electricity separated production from consumption and has modernized everyday life.



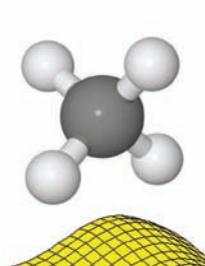
Fossil fuels have increased our industrial capabilities exponentially. As we have continued to expand and improve our energy-generation capabilities, we have also learned of the monumental price these technologies exact on our environment and consequently our home planet. We cannot go back to the dark ages of history, but we must change if we wish to move forward. As your leader, I will expand our existing energy research and development programs and institute new ones to seek out and implement even greater alternatives. Our generation will give the next one the greatest gift we can ever offer, a better future than the present we live.

NEILSON NGUYEN

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THE BIGGEST CHALLENGE FACING GHANA IS the high incidence of infectious diseases. My first action as President of Ghana will be to elevate the Health Ministry to the level of the Ghana Armed Forces.... To combat infectious diseases, I will use a four-prong battle strategy. (i) Street-level: I will train an army of youth equipped with public health and environmental engineering expertise to identify and eliminate disease-causing conditions. (ii) Town-level: I will organize town councils with Army Captains as heads, with a specific mandate to source local material, local private funding, and a local workforce to redesign towns. (iii) Institutional-level: I will establish one world-class institution for research, development, and manufacturing to operate every phase of the health service value chain. (iv) National-level: I will constitute a government of people (home and abroad) who are accomplished early- to mid-career research scien-





Sizing up surface entropy

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tists, engineers, technologists, and military leaders who understand the concept of leadership with empathy and a sense of urgency. This system will eliminate the huge loss of productivity due to the high-level infectious disease burden and drastically reduce poverty and squalor in Ghana.

PATRICK KOBINA ARTHUR

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WE STAND TODAY AT A CRITICAL JUNCTURE of world history. The biggest challenge Pakistan faces is extremism. Despite enormous efforts, we have failed to eliminate this evil. We have tried to address hostility with force and aggression, which has only resulted in hurting our cause further.

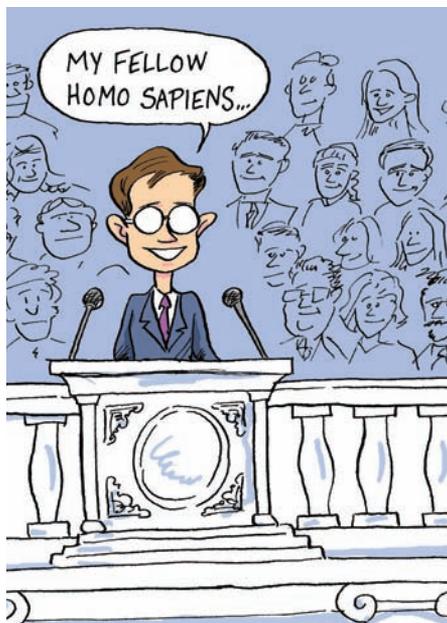


I believe that we need to use our insight from cognitive neuroscience to better understand the underpinnings and dynamics of hostile behaviors in the extremists.... I would urge our scientific community to come forward and develop a psychosocial model, through which we could intervene early enough to prevent a war-child from thinking of carrying a weapon.

ALI JAWAID

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MY FELLOW DANES! I STAND BEFORE YOU TO tell you that we are facing a crisis....Our education system is failing the brightest of our children. We are teaching them to stifle their curiosity to fit our standardized curriculums.... That is why I'm announcing optional nationwide contests accessible from any PC or tablet, targeted at stimulating ambition in children unchallenged by our current system. New test subjects and themes will be announced every Monday, centering on subjects such as functional programming, applied math, information gathering, and spoken language as gauged by voice recognition software.



Tests will be published every Friday and will stay open for 6 hours. By Sunday night, students ranking in the top half will be able to see their national, regional, and local position, and may choose to post this ranking to their social networks. This new program will teach our children to learn to learn efficiently and focused, while keeping them engaged through competition with their peers.

ERIK ESMANN POULSEN

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NEPAL'S ANCIENT TECHNOLOGIES, SUCH AS pagoda architecture, agriculture, sculpture, mining skill, and Ayurvedic medicine... are disappearing with the older generation. Today, Nepal is one of the poorest countries.... Contrary to the thoughts of many Nepalese, investment in science and research is not the waste of money. We have many sloppy rivers, and with science we can use them to make electricity and to irrigate the plains. Mountains are continually getting breeze and sunlight, and science may turn them into usable energy. The budget for science and research can support practi-



cal applications of Nepal's traditions, such as standardization of traditional herbal drugs, and modernization of pagoda architecture and mining technology, which will be fruitful at low cost. This helps sustainable industries as well as higher education, and will ameliorate the economy of Nepal.

BISHNU P. MARASINI

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THE BIGGEST CHALLENGE FACING FINLAND today is the widening gap between the prosperous, well-off individuals and... those who cannot find their place in society.... I will use a multi-disciplinary approach including psychological, medical, genetic, social, and economics sciences to develop suitable preventions, interventions, and ways to stop the intergenerational transmission of malfunctioning and poverty. ... [T]he earlier a person's life course is changed, the easier and more cost-effective it will be....

PÄIVI MERJONEN

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TODAY AS I STAND BEFORE YOU AS YOUR appointed leader, [Pakistan has] an electricity shortage,...Dengue breakouts, unsanitary conditions..., and a shortage of clean drinking water and many basic health facilities.... We have huge resources for electricity production. We can build a good, clean water delivery system, with the best filtering systems. We will research the control and prevention of diseases and pandemics and produce efficient, cheap medicines. No more half-baked, superstitious ideas and methods. We will use the most advanced and approved scientific methods to tackle our problems, and the great minds of this country will deliver our salvation...!

HARIS RIAZ

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SUSTAINABLE DEVELOPMENT HAS BEEN THE biggest challenge facing China. Once, the technology was our hurdle, but today, it is the policies. A major difficulty in achieving sustainable development goals is that most of the policy-makers are nonscientists who lack a realistic understanding of technology's



advantages and pitfalls. We must remove this barrier, so that the benefits of our science flow to society. I have made science an important part of my agenda, and in the next decade, a new program is due to launch, streamlining bureaucracy and strengthening our science base. This program will provide support for promising students to pursue higher education in elite scientific institutions and universities around the world. When they



return to our country, I want to hire many of these young scientists to work as the technical and scientific assistants for the policy-makers. I strongly encourage them to participate

in the discussions of environmental, economic, and social issues, in which scientific thinking should come into play. More essential, policy-makers need to think like scientists, so that they can base sustainable development on science. I am committed to supporting the scientists and policy-makers who pursue this goal collectively. They will add to the policy landscape diversity, and bring a whole new dimension to the sustainable development.

JIANG ZHAO

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TODAY, WE START A NEW ERA IN THE DOMINICAN Republic.... By the end of our term in office, we plan to have created discussion in classrooms and conference halls instead of courts; we want people in libraries instead of jail; we need Academies of Science instead



of gangs. We want to proclaim that we no longer have a government to control people but one that serves to promote welfare and respect....

LUIS B. GÓMEZ LUCIANO

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...THE IDEA OF EXCHANGING FAVORS HAS been prospering in the Brazilian politics for a long time. The corruption stamp has marked several Brazilian governments. Indirectly, it kills more than cancer or AIDS. If these billions of reais (Brazilian currency) were invested in health, education, or science, the progress of this country would be faster than one could imagine. Basic scientific education for our youngsters, who will be the future politicians, should be the main strat-



egy for a long-term action. Ideally, every high school should be directly associated with a research laboratory, whose masters and Ph.D. students are responsible

for giving tutorials for the young apprentices. If we can implement the Max Perutz certainty that "in science, truth always wins," maybe it will force national leaders to recognize that everybody plays on the same team and in the same World Cup.

GUILHERME MARTINS SANTOS

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PEOPLE OF AUSTRALIA, WHILE WE ARE MAKING great leaps and bounds in improving our livelihoods through access to affordable technology, plentiful energy, and abundant food, we are unwittingly making trade-offs resulting in the degradation of our natural environment and the important goods and services it provides. As a consequence, climate change is getting worse, there is less water, biodiversity is disappearing, land is less productive, and people are richer yet less satisfied. Historically, govern-



ments have set up individual departments to deal with these discrete issues—for example, environmental protection or economic development. In so doing,

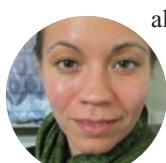
silos often inadvertently develop, resulting in suboptimal communication which ultimately leads to poor decision-making that determines the future of complex and interconnected systems. Thankfully, this age of primitive policy development is behind us; I am honored to announce the formation of the Department of Systems Decision Making. Encompassing health, environment, economics, and industry, this department will consider all dynamic relationships that exist between natural, socioeconomic, and political systems....

ADRIAN WARD

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SCIENCE IS SENDING US BLARING SIGNALS that there are urgent problems facing the United States and every nation, such as the interrelated issues of climate change, overpopulation, and energy generation. All of these problems will require new scientific

and multinational solutions. Yet...only 20% of the world's population—those from the developed world—produces three-quarters of peer-reviewed scientific papers. We are doing both our country and our world a massive disservice by so severely underutilizing



all of the potential brainpower our global civilization has to offer. We need more programs that facilitate scientific collaborations and foster scientific capacity building between developing and developed countries. We need to provide more ways for scientists in our own country to venture into the developing world to do research alongside scientists there....

CHRISTA A. HASENKOPF

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...WHILE THERE ARE EXAMPLES OF WORLD-class excellence in our science education system, all too frequently we as U.S. citizens lack easy access to real science and real scientists. This is why, as President, I will create the Presidential Publicity Platform. Through an ongoing weekly format, I will take the time to sit down and speak with some of our nation's scientists about topics central to our future as a country. In these online fireside chats, we will create a forum for the public to experience science and ask their own questions. ...I believe that the strength of our nation has always resided in its ideas, and in America's affection for the pragmatic. It is time for us to renew our acquaintance with science, to renew our faith in its recommendations, and to renew once more the promise of our shared future.

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Letters to the Editor

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