



MINISTÉRIO DA EDUCAÇÃO  
UNIVERSIDADE FEDERAL DO PIAUÍ – EDITAL 15/2014

Realização:



# EXAME DE PROFICIÊNCIA DE LEITURA EM LÍNGUA ESTRANGEIRA

DATA: 26/01/2014

HORÁRIO: das 8 às 11 horas

## CADERNO DE PROVA

Idioma:

**INGLÊS**

Área de Pesquisa:

**(2) CIÊNCIAS EXATAS E DA TERRA, ENGENHARIAS**

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- Esta prova é constituída de um texto técnico-científico em língua estrangeira, seguido de 5 (cinco) questões abertas relativas ao texto apresentado.
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# An Engineer at the EPA

September 2013

By Eric Butterman, ASME.org

<https://www.asme.org/engineering-topics/articles/environmental-engineering/an-engineer-at-the-epa>



A mechanical engineer at the U.S. Environmental Protection Agency (EPA) isn't just looking at what improves our lives but what keeps us alive. As Associate Director for Climate, Andy Miller has such a position, one that is full of hard work and challenges.

"My role is to plan and coordinate the research that the EPA is doing to respond to the impact of climate change," he says, adding that this encompasses making sure requirements for water quality, air quality, and ecosystem health are being met and also communicating the message of the agency.

An example of a research challenge he'd be involved in? "We had a project where a utility was thinking about using a particular fuel, which happened to be an oil-water emulsion using very heavy oil," he says. "That involved some actual testing where we burned this fuel in some of our pilot-scale equipment. We measured the emissions, we looked at the efficiency of how the addition of the water to the combustion process changed the overall efficiency, and looked at how the fuel was being used across a number of countries. And, [we looked at] what kinds of pollution controls would be needed for it to meet the requirements that we have."

Cost effectiveness is also looked at on the research side, though admittedly, it can be hard to measure. As an example, Miller cites a case where they measured technologies related to remote sensing in an effort to reduce the monitoring costs.

Miller is often gauging the response the public has to technology as well. "We have to pay more attention to how we're using technology, how people behave and how they respond as opposed to just technical advances itself. It's increasingly important for us on the engineering side to better recognize how things change in practice, [how technology] makes it into the marketplace."

It's also clear that Miller enjoys the unpredictability of the subjects he focuses on. He recalls how people predicted all sorts of technologies to step in when oil went to \$100 a barrel but that we now know it's much more complicated than that. His job has given him many examples of how there can be more dynamics at work than what people would ordinarily consider.

Though Miller couldn't speak to what skills would get you into the EPA, he did have thoughts on the kinds of abilities that can lead to environmental-related work overall. "Having an understanding of natural systems and an understanding of social [aspects], whether economics or behavior," he says. "Being able to communicate is critical, regardless of what field you want to go into, but I think it becomes even more important in an area like this where you have a large engagement with the public." He also reminds that it's important to be able to relay technical ideas in simpler terms as the audiences' backgrounds may vary.

*Eric Butterman is an independent writer.*



