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A vote for science

In support for science and environmental issues, Barack Obama and the Democrats have a clear advantage over Mitt Romney and the Republican Party.

When Americans vote for their next president in early November, they will select not just one man to occupy the White House, but also the thousands of party members who will sweep into Washington DC. Those appointees from the president's political party will help to set priorities in science funding, negotiate international treaties and decide whether to create new regulations — or ignore existing ones.

This is important to consider when evaluating the two candidates because the challenger to President Barack Obama, Republican Mitt Romney, has not offered specific plans to manage the roughly US\$65 billion of funding that goes to non-military research and development each year. The past positions of the candidates and the records of their own political parties make it clear that Obama and the Democrats offer important advantages for science over Romney and the Republicans.

Budget proposals show the clearest differences. During his term, Obama has consistently supported strategic spending increases for science, with his most recent budget proposal calling for a 5% boost that targets physical sciences. Although some have been unhappy with the details — in particular the decision to forgo a funding increase for the US National Institutes of Health — Obama's science portfolio has fared remarkably well during the financial crisis.

Romney has voiced his support for science and said that he would make federally funded research a budget priority, but he has offered no specific details. Given Romney's pledge to reduce overall federal spending and to lower taxes, some scientists worry that key research agencies would experience sharp budget cuts. Last week, 68 Nobel science laureates said as much in an open letter of support for Obama. A Romney budget, the letter said, would "devastate a long tradition of support for public research and investment in science at a time when this country's future depends, as never before, on innovation".

DOLLAR DRAIN

It is notable that Romney chose Paul Ryan, a congressman from Wisconsin, as his vice-presidential nominee. Ryan this year offered a long-term budget plan that would slash spending for civilian research and development.

The two parties diverge in past support for key areas of research. In 2009, Obama reversed an executive order by former president George W. Bush that had restricted government-supported research on human embryonic stem cells. Romney's position on the topic remains unclear, although his shift over the past few years towards more conservative policies on abortion has worried supporters of human embryonic stem-cell research. To back such work, he would have to cross the hard line established by his own party. In August, Republicans issued a political platform that said: "We oppose federal funding of embryonic stem cell research." And Ryan voted several

times as a congressman to curtail federal funding in this area.

Similar strong differences can be seen in positions on climate-change research and policies. When he took office, Obama reversed a trend of declining support for the US climate-research portfolio, and he wants a further 5.6% increase in 2013. He authorized the EPA to set limits on greenhouse-gas emissions from cars. And Obama's team has engaged in the United Nations' climate negotiations to the extent possible given congressional constraints. The administration

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has taken a leadership role in the Montreal Protocol to protect the ozone layer, as well as in the Climate and Clean Air Coalition, an international effort launched in February to reduce pollutants such as methane, black carbon and tropospheric ozone, which warm Earth's surface.

Romney has diverged with many in his party by acknowledging that humans have helped to warm the planet, but he has exaggerated the disagreements among climate scientists. According to Romney: "There remains a lack of scientific consensus on the issue — on the extent of the warming, the extent of the human contribution, and the severity of the risk — and I believe we must support continued debate and investigation within the scientific community." He has campaigned against international climate agreements and last month told the television programme *Meet the Press* that "I'm not in this race to slow the rise of the oceans or to heal the planet".

His running mate has gone further to challenge climate scientists. After the release of e-mails in 2009 from the University of East Anglia in Norwich, UK, Ryan wrote: "These e-mails from leading climatologists make clear efforts to use statistical tricks to distort their findings and intentionally mislead the public on the issue of climate change." He also joined nearly all Republicans in the House of Representatives in 2011 to try to prevent any US funding of the Intergovernmental Panel on Climate Change. Romney and Ryan have vowed to roll back some of Obama's climate policies and would strip the EPA of its power to regulate greenhouse gases.

They have also promised to cut back sharply on new regulations and to require Congress to approve any major ones, which would effectively block agencies from setting important new rules. That requirement is so limiting that it will probably not come to pass, but it has helped to foster extreme views about government that could keep science agencies from carrying out their missions should Republicans sweep the November elections.

Over the past four years, Obama has demonstrated strong support for science and innovation, as well as policies that flow from research. Romney has not offered many details of his plans for science, but those he has released — and the recent record of his party — do not bode well for US science or its international partners. ■