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## Ariz. needs to work hard to keep lead in science

by **Joaquin Ruiz** - Apr. 11, 2009 12:00 AM

With the bursting of the housing bubble and the subsequent economic meltdown, Arizona must diversify its economy, and it's in a very strong position to do that in one particular area: science. Arizona is already a global leader, but it needs to build on that strength, not retreat.

Arguably the most important science story of 2008 unfolded right here in Arizona: NASA's Phoenix Mission to Mars, an extraordinary success for our nation and for space exploration that was managed from the campus of University of Arizona.

The Phoenix Mars Lander sent its final signal in November, but there's much more ahead. It will take years to analyze all of the data; the Mission's findings are already encouraging further exploration of Mars, for which Arizona has crucial experience, and no less an authority than Neil Armstrong, the first man on the moon, recently endorsed further space exploration, writing in the *Wall Street Journal* that, despite budget constraints, NASA "has fashioned a challenging but credible program to return to the moon and go on toward Mars."

Arizona's leadership doesn't stop there:

- Production of the largest mirrors for the LSST, an enormous telescope that will be constructed in Chile, is now under way at the University of Arizona's Mirror Laboratory.
- Arizona is home to some of the largest land-based telescopes on earth, including the Large Binocular Telescope.
- Biosphere 2, north of Tucson, has been converted into a revitalized center for science research and a site for conferences of global importance, and Arizona has other significant science resources including, among others, Science Foundation Arizona, the UA's BIO5 Institute, the BioDesign Institute at Arizona State University, and the oldest science foundation in the nation, Research Corporation for Science Advancement.

This and other science activities put Arizona in the enviable position of already providing global leadership in a field of growing economic importance, and it will become more important still. As alternative forms of energy are explored, Arizona's geography will make it a focal point for solar-energy initiatives, and its expertise in astronomy will be crucial to maximizing that potential.

But the competition will be intense. President Barack Obama has made science a top priority, pledging in his Inaugural Address to "restore science to its rightful place." The federal economic-stimulus package includes \$21.5 billion for research and development, and the president's proposed budget for fiscal 2010 has increased science funding significantly.

In this economy, other states desperately want the jobs that that funding represents. Arizona has an impressive head start, but it has to fight to keep its lead in the sciences. Otherwise, those jobs will go elsewhere, including to our neighboring states, where many of our geographic strengths are shared.

The challenge is to maintain our lead and build on it -- and to do so in the midst of a housing meltdown that has crippled the state's economy. The tendency will be to cut back on science

funding and the economic development activities that it represents. But that will only mean passing up opportunities that should be ours. A recent study by the Arizona Arts, Sciences and Technology Academy revealed that Arizona's astronomy and space-related research industries alone already generate \$250 million annually in direct economic activity and 3300 jobs.

Arizona must be aggressive in its pursuit of science excellence. Our economy is at stake.

We have in our hands an opportunity about which most states can only dream. Seizing that opportunity is the best way to ensure that our state will rebound from the bursting of the housing bubble and continue to provide the jobs and business opportunities that are so essential to Arizona's future.

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