A Publication of the
Killingworth Chamber of Commerce

Killingworth Krier

www.Killingworthct.com

Killingworth Chamber of Commerce

4TH ANNUAL CHILI COOK OFF AND BUSINESS EXPO

Saturday, October 22
10 a.m. - 3 p.m.
at the former True Value building, Rt. 81

The Killingworth Chamber of Commerce invites its members as well as other local businesses to come with chili and set up a booth at this successful local event!

It's a great way to show off your business as well as your cooking skills!

Booths are $30 for KCC members, $50 for non members.

Register online *NOW* at www.killingworthct.com

If you are a member of a local organization such as Boy/Girl Scouts, youth groups, non profit organization, this is a perfect place to show off your accomplishments and do some fundraising. Come show off what you do in Killingworth!

Each participating business or organization is encouraged to concoct its own blend of chili for visitors to sample. Participants are required to provide their own tables, chairs, extenison cords, crockpots, tasting cups and spoons.

Come taste some great chili and get to know your local businesses. Votes will be tallied.

Prizes awarded to the top three chilis!!

Tons of Fun, Lots of Good Chili to Eat.

We Hope We See You There!

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HKHS Students Attend NASA Workshop

This past summer, two Killingworth high school students travelled with a HKHS science teacher to attend an all-expenses-paid workshop at the Spitzer Science Center (SSC) and the Infrared Processing and Analysis Center (IPAC), both in Pasadena, CA.

Cameron Cook, son of Geoff and Annette Cook, and Parker Hutchinson, son of John and Patty Hutchinson, and Shefali Mehta, a third year science teacher at HKHS, attended the workshop as part of NASA's NITARP program. This program partners teachers with scientists with the goals of getting true research experiences into classrooms and encouraging student interest in science, technology, engineering and math. NITARP, the NASA/IPAC Teacher Archive Research Program, is funded by NASA and designed primarily for educators and teachers.

The local students and teachers studied galaxy clusters around Active Galactic Nuclei (AGN) using Spitzer and Kepler and many other data sets.

Most NASA projects have an EPO (Education and Public Outreach) program designed to help the "outside" world understand and know about the work that is being done. NITARP is an EPO Program created through the SPITZER Space Telescope Program and is designed to bring scientists together with teachers and students to conduct "real-world" research. This is an amazing opportunity to have an impact not only on students, but also in the scientific community, said Mehta, who was selected to be part of the program in January.

"So far, being a part of NITARP has been a wonderful experience," she said. " In preparation for the summer trip, our team worked hard to write and revise our proposal for the research we planned on conducting.

"Our project itself has two parts. The first is a method to search for previously unknown galaxies close to a red-shift of 1 (z=1), which means that they are approximately 7-8 billion light-years away (when it emitted the light)," Mehta explained.

"The second is to review the structure of the galaxy clusters we find. During the summer trip, we learned more about the imaging process (especially filtering) as well as how image data could be analyzed to provide information about objects in space, such as temperature, mass, and even motion. We started working on some of the data to make sure that everyone understood the processes we were using and to work out any issues. Going from black and white images to a chart that showed possible galaxies and cluster composition was incredible. It was exciting to know that in a few months, the data we collect could impact the scientific community in a real way. We were doing "real" science. Working with the other teachers and students was just as amazing. Their excitement was infective, and it really pushed all of us to work harder at understanding the finer details of our work as well as in trouble-shooting when things didn't work out the way we expected."

Cook said the trip was "definitely worth the long flight."

" Ever heard of a Mega Jansky? That's a unit of flux density. My favorite part was Griffith Observatory. The planetarium show was mind blowing. But we did learn more than I thought was ever possible in a week," he told the Krier.

Cook spoke enthusiastically about the research he was involved with: We used SPITZERS 3.6 and 4.3 micron irac sensors. We were looking at infrared radiation from what we believe to be AGN clusters. (AGN stands for Active Galactic Nuclei.) AGN's tend to group together and most of the mass in the universe resides in galaxies. So, in order to better understand how galaxies evolve, we look where the majority of it is located. To the naked eye we can't see these AGN, partly because the visible light they emit is obscured and/or absorbed by clouds of gas and dust floating in the vacuum of space. But, these AGN also emit radiation in the infrared end of the electromagnetic spectrum. Infrared wavelengths do a better job at penetrating these celestial obstructions. In essence, since these objects are millions of light years away, we are looking into a time machine. Contrary to popular belief, a light year is a measure of distance; not time. It is how far light can travel in a year. So two light years is how far light can travel in two years and so on. So if the AGN emits IR radiation, and it is one million light years away, then that means what we see is technically one million years old. By applying this to our current understanding of the universe, we can more accurately describe the evolution of galaxies.

(Back row from left) Cameron Cook, Shefali Mehta and Parker Hutchinson shown with other NASA's NITARP participants.