

# HBRI Newsletter

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Summer Edition

## A Night of Celebration in Rancho Santa Fe

### Inside this issue:

- 10th Anniversary Gala Success** 1
- New HBRI Summer Interns** 2
- The Significance of Private Donations** 3
- Addiction Research Published** 3
- HBRI Collaborates with Burnham** 4
- Alzheimer's Research on Vitamin D Published** 4

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On May 30<sup>th</sup>, 2009, the Human BioMolecular Research Institute celebrated over a decade of brain disease research and science education during an anniversary gala at the Rancho Santa Fe Garden Club. Guests enjoyed champagne and hors d'oeuvres while bidding on silent auction items, and then moved into the main room of the Garden Club for a delicious dinner.



The event was emceed by Kerstin Lindquist from Channel 10 News.



During dinner Jennifer Ding, a former student intern at HBRI, spoke about her experiences working in the lab at the Institute and her career prospects as she heads to Harvard University in the fall.

Dr. John Cashman, the Director of the Institute, also spoke about the last decade of research at HBRI.



Dr. Cashman underscored the remarkable scientific successes that HBRI has enjoyed over the past decade including developing medication candidates for Alzheimer's Disease, Parkinson's Disease, ALS, other neurodegenerative

diseases, memory, depression, addiction disorders and other neurological diseases.



Dr. Cashman also mentioned a few new research directions including cancer and cardiovascular disease that the HBRI is undertaking.

Finally, he highlighted the young scientists in attendance and described the importance of training young scientists and the commitment of HBRI to science education partnerships with the community.



The evening wrapped up with some dancing to a great jazz trio from Los Angeles, and lots of laughter as the silent auction closed and people mingled with friends and colleagues.



# Welcome 2009 HBRI Student Interns!

## 2009 HBRI

### Summer Interns:

#### Adam Kaldor

*La Jolla Country Day School*

#### Snigdha Poddar

*University City High School*

#### Margaret Zhou

*Westview High School*

#### Jarred Mihalik

*Rancho Bernardo High School*

#### Rachel MacManus

*Educator, Canyon Crest  
Academy*

## CONGRATULATIONS

### to our interns!

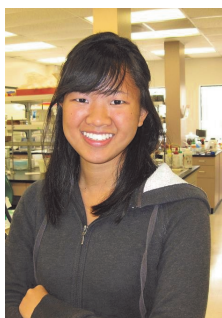
This June, HBRI welcomed four new interns to the Institute! 71 students interviewed for the coveted internship positions and only four were chosen.

These four interns are multi-talented students with great personalities. HBRI is very excited to have them at HBRI for the next few months.



Adam Kaldor is entering his senior year at La Jolla Country Day School. He enjoys tennis, plays the cello and is a huge Indianapolis Colts fan.

Snigdha Poddar graduated this summer from University City High School and will attend UC Berkeley in the fall. Snigdha plays the violin and the cello and she also enjoys cooking and knitting.



Margaret Zhou graduated this summer from Westview High School. She plans to attend Stanford in the fall for her undergraduate studies. Margaret plays the cello and has even played with the San Diego Symphony!

Jarred Mihalik is entering his senior year at Rancho Bernardo High School. He plays on the varsity roller hockey team, plays the violin, and is a good cook!



HBRI is also fortunate to have a science teacher working at the Institute this summer. Rachel MacManus graduated from California Polytechnic State University in San Luis Obispo and is currently a Science teacher at Canyon Crest Academy in San Diego.



While the students are at HBRI they will run experiments, take part in ongoing projects and help write manuscripts that will be published in peer-reviewed journals. Students are mentored by HBRI scientists and can choose from three areas of focus: Chemistry, Analytical Chemistry or Biology.

The scientists at HBRI are excited to have these bright young students working in the lab helping out with research.

If the 2009 interns follow in the footsteps of former HBRI interns we can expect great things from these future scientists. Past interns have graduated from the internship program and have gone on to study at MIT, UC Berkeley, USC, Georgetown, Virginia, UCSD, UCLA, University of Washington, Harvard, Yale, and others.

You can make a difference by supporting HBRI's students financially. Students are paid for their internships, and as a nonprofit, HBRI relies on grants and donations to support these students. For more information on HBRI's Summer Internship program and ways you can help, please visit our website at [www.HBRI.org](http://www.HBRI.org).



## The Significance of Private Donations

For most non-profit organizations, private donations make up 20% of annual revenues. In a down economy that can be a significant number.

In contrast, HBRI receives almost all of its funding from federal and state research grants. Getting grants funded in the last few years, however, has been difficult.

The economic climate has changed and the competition for grant funding has grown. What this means for HBRI is that private donations are more critical to the success of the organization, and to continue the important research being done at the Institute.

When HBRI is awarded federal or state research

grant money, it must be used to pay the salaries of the scientists, pay for equipment that needs to be purchased to work on a research project, and other needs that are specific to the project for which the grant was awarded. But the Institute has other financial needs, including the summer internship program and other operating costs.

HBRI's summer internship program is a paid internship. It costs the Institute quite a bit of money to host an intern, and that includes salary paid to the intern, time HBRI scientists spend mentoring the intern, supplies and other costs related to the program.

HBRI also has a need for matching funds for private foundation grants. Private

foundation grants do not support overhead costs, so HBRI could benefit significantly from the support of private donations.

Dr. Cashman, the Director of HBRI, said it well: "Private donation support shows invaluable connectivity to the excellent work done by the scientists at HBRI and interns being trained at HBRI. This is our greatest obligation: to move the progress of science from the bench to the bedside and to train the next generation of scientists that will do just that".

HBRI looks forward to the continued support of the San Diego community in the years ahead.

## HBRI Article Published on Addiction Research

Scientists at HBRI, with collaborators at the Scripps Research Institute, recently published an article on the development of mediations for treating cocaine addiction.

The article was published online in the Journal of Psychopharmacology in late May 2009. The article reports on studies of the involvement of certain cellular receptors that bind

opioid compounds, and on compounds that influence the activity of those receptors.

To mimic development of substance dependence in humans, rats in different groups were trained to self-administer cocaine on different schedules with either short or long sessions of access to cocaine. The study showed that a novel HBRI compound was

effective in significantly reducing cocaine administrations in the addicted groups of rats.

The results suggest that increased motivation for cocaine may be related to activity of a specific opioid receptor, and may point the way toward promising new therapeutic approaches for treating substance abuse.

### Statistics:

Total giving for 2008 was down 5.7% from the year prior - the largest decline in over fifty years.

*Two-thirds of public charities experienced a drop in donations in 2008.*

Individual Giving declined 2.7% in 2008 from the prior year.

Donations to Health organizations declined 6.5% in 2008.

(Giving USA Foundation)



## HBRI Collaborates with Burnham Institute

HBRI has been collaborating with Mark Mercola, Ph.D., at the Burnham Institute for Medical Research and Jeff Price at Vala Sciences in San Diego to find replacement cells for heart tissue.

The goal of this study is to restore cardiac function to patients following heart tissue damage.

HBRI and Burnham have already developed a number of promising new compounds and are testing them in advanced models.

The intention is that these compounds will be used to either create replacement cardiomyocytes (heart cells) for heart tissue that has been damaged, or they will be used in drugs that can be administered through the blood stream to help encourage new

cell formation.

Small molecules, like the ones HBRI is working on for this study, have the potential to influence cell determination. In other words, they can tell progenitor heart cells what properties to take on in order to aid in development of tissue for mature heart cells.

**This research is very important to people who are affected by cardiovascular disease, which currently affects 80 million Americans,** yet it is still very challenging to attain funding for these research projects.

HBRI hopes that under the new Obama administration, the research that HBRI is doing will have more funding opportunities.

President Obama has promised to “vigorously support scientists who pursue this research”. In other words, more federal money will be available to research institutes that do this type of cell research, compared to what has been available in the past.

Under President Obama’s new plan, this type of research will be controlled by the NIH, which means that federal funds will now be available for this research and held accountable to NIH standards.

This research is exciting for HBRI and the Burnham Institute but more importantly for patients currently suffering from diseases to which heart cell research might provide answers, cures and treatments.



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### BREAKING NEWS!!

#### HBRI, UC Riverside and UCLA show Vitamin D useful for Alzheimer's Disease

The July 2009 issue of the Journal of Alzheimer's Disease includes an article about a recent collaboration between HBRI, UC Riverside and UCLA. Scientists have identified cooperative effects of Vitamin D and curcumin (a constituent of the spice found in curry) that stimulates the immune system to clear plaques that form in the brain in Alzheimer's Disease.

The study provides more insight into a role of the immune system in Alzheimer's disease and points to a novel therapeutic approach. HBRI hopes that this discovery may lead to opportunities to prevent and treat Alzheimer's Disease, a devastating disease affecting a growing population.

#### Our Mission

*To conduct basic research related to disorders of the central nervous system and help develop new therapeutic agents that address these disorders and promote scientific learning through community service and public access.*