



DR. LARRY HOLLIER

CHANCELLOR'S Notes



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Faculty book pays it forward

Andrew D. Hollenbach, PhD, Associate Professor of Genetics, shares his insider knowledge of how applications for one of the nation's most prestigious and sought-after series of training grants are reviewed, the biases that influence the process, and invaluable tips, insights and key suggestions in *A Practical Guide to Writing a Ruth L. Kirschstein NRSA Grant* published by Academic Press, an imprint of Elsevier.

A Practical Guide to Writing a Ruth L. Kirschstein NRSA Grant

Andrew D. Hollenbach



Dr. Andrew Hollenbach

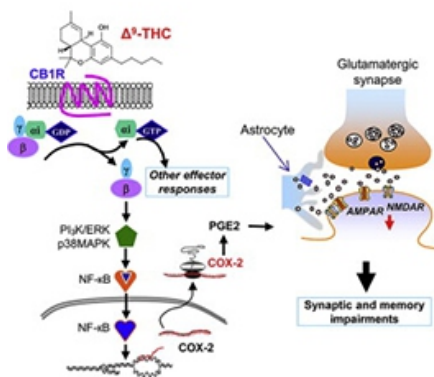
In the book, Dr. Hollenbach shares his experience gained through serving as a reviewer on National Institutes of Health study section training review panels. For students and postdoctoral researchers, these grants play an important role in addressing a critical need to increase the country's supply of scientists with both clinical knowledge as well as skills in basic, translational or clinical research.

LSUHSC research finds cause & remedy for learning & memory side effects of medical marijuana

Dr. Chu Chen, LSUHSC Professor of Neuroscience, led a study that identified the cause of learning and memory deficits associated with medical marijuana use, as well as a potential remedy. Solving a longtime mystery, the research team found that marijuana increased the level of a pro-inflammation enzyme called cyclooxygenase-2, or COX-2, in the part of the brain linked to cognitive function. Working in mice, they discovered that non-steroidal anti-inflammatory drugs that inhibit COX-2 prevented these debilitating side effects. The results suggest the use of medical marijuana could be broadened if patients concurrently take a nonsteroidal anti-inflammatory drug such as ibuprofen or the prescription, Celebrex.



Dr. Chu Chen



Published by Cell Press this week in the journal, *Cell*, Dr. Chen's research is garnering international praise, being called "a seminal paper" and "an elegant set of experiments." *Science* included the paper in their Top News Stories this week, and we've been told that *Nature* will also highlight the

The FDA has approved the use of drugs based on the main component of marijuana, delta-9-tetrahydrocannabinol (THC), for some cancer patients to treat the nausea and vomiting side effects of chemotherapy. However, concern for the cognitive impairments, including memory loss, associated with THC has precluded their wider use in other conditions, some with no effective prevention or treatments to halt disease progression. *see THC, page 2*

LSUHSC research finds combo of plant nutrients kills breast cancer cells

A study led by Madhwa Raj, PhD, Research Professor in Obstetrics and Gynecology at LSU Health Sciences Center New Orleans and its Stanley S. Scott Cancer Center, has found that a super cocktail of six natural compounds in vegetables, fruits, spices and plant roots killed 100% of sample breast cancer cells without toxic side effects on normal cells. The results, which also revealed potential treatment target genes, are published in the November 2013 issue of the *Journal of Cancer*.



Dr. Madhwa Raj

The research team tested ten known protective chemical nutrients found in foods like broccoli, grapes, apples, tofu, and turmeric root (a spice used in Indian curry) before settling upon six – Curcumin known as turmeric, Isoflavone from soybeans, *see Cocktail, page 2*

THC, from page 1

Dr. Chen's lab also tested the combination in a mouse model of Alzheimer's disease, and found it effective in reducing the condition's hallmark neurodegenerative damage. While further research is needed, the results suggest that the unwanted side effects of cannabis could be eliminated or reduced, while retaining its beneficial effects, by administering a COX-2 inhibitor along with Δ^9 -THC for the treatment of intractable medical conditions such as Alzheimer's disease.

The research team also included Rongqing Chen, Jian Zhang, Ni Fan, Zhao-qian Teng, Yan Wu, Hongwei Yang, Ya-ping Tang, Hao Sun, and Yunping Song, from the Neuroscience Center, and the Departments of Otorhinolaryngology and Cell Biology and Anatomy in the LSUHSC School of Medicine. ■

Cocktail, from page 1

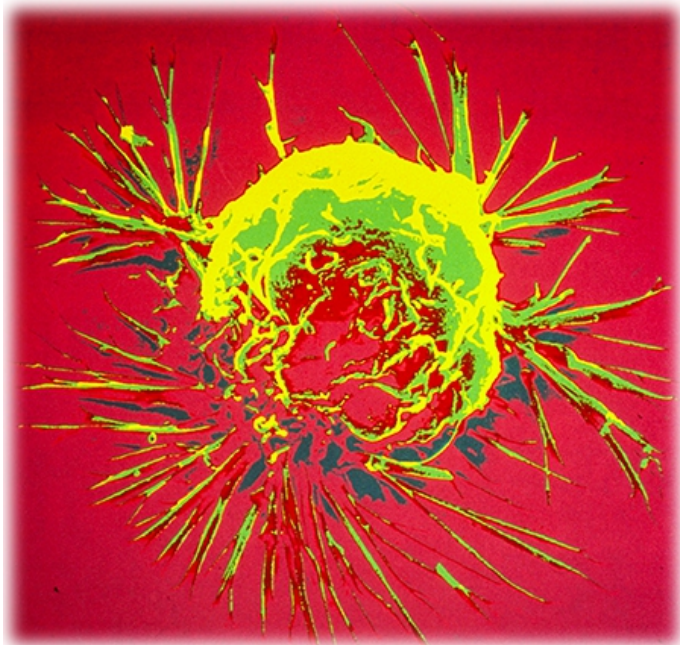
Indo-3-Carbinol from cruciferous plants, C-phycocyanin from spirulina, Resveratrol from grapes, and Quercetin, a flavonoid present in fruits, vegetables, and tea. The researchers administered these six at bioavailable levels to both breast cancer and control cells. They tested the compounds individually and in combination. They found that the compounds were ineffective individually. When combined, though, the super cocktail suppressed breast cancer cell growth by more than 80%, inhibited migration and invasion, caused cell cycle arrest, and triggered the process leading to cell death resulting in the death of 100% of the breast cancer cells in the sample. The researchers observed no harmful effects on the control cells. Further analysis also identified several key genes, which could serve as markers to follow the progress of therapy.

Although the cocktail was not tested against BRCA1 and BRCA2, previous studies have shown that they are molecular targets of four of the six compounds. The



researchers also earlier demonstrated that two of the compounds synergize effectively to kill ovarian cancer cells.

The LSUHSC research team also included Andrew Hollenbach, PhD, with collaboration from David Welsh, MD, and Udai Pandey, PhD. Other local research collaborators on the study included Dr. Shubha Ireland, at Xavier University of Louisiana, and Dr. Shailaja Raj, at Protegene Corporation. ■



You can help our students brighten a child's holiday

The LSUHSC School of Medicine Pediatric Interest Group is sponsoring a toy drive in conjunction with the Marine Toys for Tots Foundation. The U. S. Marine Corps Reserve Toys for Tots Program is directed by the Commander, Marine Forces Reserve, with the assistance of his staff, from the Marine Forces Reserve Headquarters in New Orleans, Louisiana.

If you choose to participate, bring in new, unwrapped toys before December 6, 2013. Collection boxes have been placed around campus.



Coordinators pick up the toys you donate and store them in central warehouses where they then sort the toys by age and gender. At Christmas, with the assistance of local social welfare agencies, church groups, and other local community agencies, the program distributes the toys to the less fortunate children of the community.

While Toys for Tots Program organizes, coordinates and manages the campaign, the ultimate success depends on the support of the local community, like the medical students in our Pediatric Interest Group, and the generosity of the people like you who make room on their holiday lists for a child you don't even know. ■