

## SRP grantee receives prestigious Brodie Award

By Sara Mishamandani

Bruce Hammock, Ph.D., a longtime NIEHS Superfund Research Program (SRP) grantee, was honored by the American Society for Pharmacology and Experimental Therapeutics (ASPET) with the biennial [Bernard B. Brodie Award in Drug Metabolism](#).

(<https://www.aspet.org/Drug-Metabolism/Brodie-Award/>)

The award recognizes outstanding original research contributions in drug metabolism and disposition, particularly those having a major impact on future research in the field.

Hammock, who holds a joint appointment with the University of California (UC), Davis Department of Entomology and Nematology, and Comprehensive Cancer Center, joined the UC Davis faculty in 1980. He also directs the UC Davis Superfund Research Program (SRP), which has been continually funded since 1987.

### A leader in the field of drug metabolism

Hammock is best known for discovering the soluble epoxide hydrolase (sEH), a form of the epoxide hydrolase enzyme that exists in the cell cytosol and degrades chemically stable fatty acid epoxides. This discovery had important implications for the development of therapeutic agents.

To investigate the biological role of this enzyme, his team created potent inhibitors. Inhibitors are commonly used to determine the location of the enzyme's active site and to study factors that control enzyme activity. They found that the potent inhibitors created to study sEH could be used in mouse and rat models as a drug to reduce inflammation and inflammatory pain more effectively than nonsteroidal anti-inflammatory drugs. Hammock has also explored the use of inhibitors of epoxide hydrolases as drugs to treat diabetes, ischemia, and cardiovascular disease.

He recently determined the molecular mechanism underlying the beneficial effects of inhibiting sEH after heart attacks, opening the doors for a new therapy to stop cardiac fibrosis (see [story](#)). He is even collaborating with veterinarians to test sEH inhibitors to treat laminitis, a painful and deadly disease in horses (see [story](#)). The compounds are in efficacy trials for companion animals and in the investigational new drug enabling stage to assess potential interactions and metabolic stability before entering clinical trials.

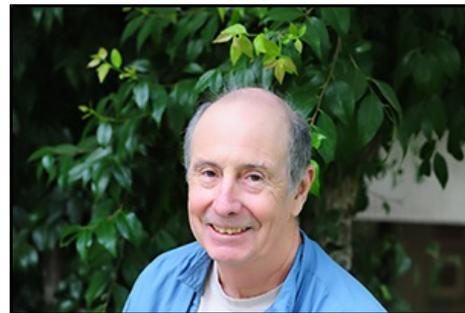
In selecting Hammock, ASPET acknowledged Hammock for his collaborative studies in drug metabolism and metabolomics. Hammock is known for his tradition of identifying new collaborators and sharing reagents to enable investigators in both private and public sectors to make substantial advances in treating stroke, atherosclerosis, heart failure, renal failure, inflammation, and neuropathic pain.

### A long history with NIEHS

Author of more than 900 peer-reviewed publications and member of the National Academy of Sciences, Hammock is a leader in his fields of research. His team of more than 40 scientists and students delves into basic questions of biology and biochemistry that have practical implications for improving both human and environmental health.

Before beginning his relationship with NIEHS SRP in 1987, Hammock received partial support from NIEHS for his graduate education at UC Berkeley. He also received an NIEHS merit award in 1998. Trained as an insect developmental biologist, Hammock expanded his research interests to include drug development and advanced laboratory analysis.

His SRP-funded laboratory also pioneered the use of immunoassay technologies to detect hazardous chemicals, developing a



Hammock currently directs the UC Davis SRP, along with the National Institutes of Health Biotechnology Training Program and the NIEHS Combined Analytical Laboratory. (Photo courtesy of Kathy Garvey)



Hammock is known for working hard and playing hard. In 2003, he launched an annual water balloon battle, 15 Minutes of Aim, to build camaraderie and gain relief from the heat. Hammock, right, loses a water balloon confrontation after SRP trainee Karen Wagner dumps the water filled bucket on him. (Photo courtesy of Kathy Garvey)



At UC Davis, Hammock teaches in the Pharmacology and Toxicology Graduate Group. Seen above conquering the rapids, he also teaches whitewater kayaking. (Photo courtesy of Bruce Hammock)

way to test for the presence of pyrethroids, a class of pesticides.

Hammock will receive the award and present a keynote speech about his research Apr. 28 in San Diego at the annual joint meeting of ASPET and the Chinese Pharmacological Society.

(Sara Mishamandani is a research and communication specialist for MDB Inc., a contractor for the NIEHS Superfund Research Program and Division of Extramural Research and Training.)

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