



NRES WEEKLY NEWS

November 11 – November 18, 2005

A newsletter for faculty, staff and students
who participate in the
Natural Resources & Environmental Studies Institute
and NRES Graduate Programs

FRIDAY, NOVEMBER 18

THE NRES / CSAM RESEARCH COLLOQUIUM SERIES

“Exploring the “P450-ome” of a California Bark Beetle”

Cytochromes P450 (P450s) comprise a large gene family, individuals of which play many important roles in organisms ranging from bacteria to plants to mammals to insects. In insects, P450s are often involved in detoxification of plant secondary metabolites as well as in pheromone and hormone biosynthesis and degradation. We have identified, and characterized the expression of, fourteen novel P450s of potential importance in host colonization and reproduction by a pine bark beetle, the California fivespined ips, *Ips paraconfusus*. Twelve of the P450s are of the Cyp4 family, one is of the Cyp9 family, and one is of the Cyp31 family. At two time points after feeding on host phloem, many of the novel P450s exhibited variable transcript accumulation in male and female insects compared to unfed controls. The Cyp9 gene was of particular interest as its transcript levels in males were >85,000x greater at 8h and >25,000x greater at 24h after feeding compared to non-fed controls. The Cyp9 also showed significant, but lower, transcript accumulation in fed females at 24h (151x over 0h control) but not at 8h. The differential transcript accumulation patterns of these first P450s to be described in any bark beetle provide insight into the complex interaction of *Ips paraconfusus* with its host pines and will allow for further functional characterization of specific P450 enzymes in this, and other, forest insects.



Dr. Dezene Huber
Canada Research Chair in
Forest Entomology and
Chemical Ecology
& Assistant Professor -
UNBC

Date: Friday, November 18, 2005

Time: 3:30 pm

Place: Lecture Theatre 9 - 200 (Medical Building)

Light Refreshments served at 3:15 pm

NEW PUBLICATION

Johnson C.J., and M.P. Gillingham. 2005. An evaluation of mapped species distribution models used for conservation planning. *Environmental Conservation* 32:117-128.