

## Appreciation

Professor L. Elizabeth. L. (Bets) Rasmussen (1938-2006)

*By Heidi Riddle*

On September 17, 2006, elephants around the world lost a great friend when Dr. L.E.L. (Bets) Rasmussen passed away. Bets was a Research Professor in the Department of Environmental and Biomolecular Systems at the Oregon Graduate Institute (OGI) in the USA. Bets received her A.B. degree in Biology with Department Honors in 1960 from Stanford University. She received her Ph.D. degree in Neurochemistry in 1964 from Washington University in St. Louis. Bets and her husband Rei Rasmussen (a professor of Atmospheric Chemistry at OGI) came to what was then the Oregon Graduate Center in 1977. During her studies Bets was the recipient of a National Institute of Health Predoctoral Fellowship and, in 1994, was awarded a Guggenheim Fellowship for her work on chemosensory signaling and elephant reproduction. Bets was a long-time member of the IUCN Asian Elephant Specialist Group.

Bets' animal-related studies started with sharks and rays and went on to include whales, dolphins, manatees and elephants. Her research focused on mammalian pheromone chemistry, and elephant olfaction became a passion. Bets did much of her groundwork with elephants in captive facilities around the world – collecting samples and running bioassays in western facilities and forest camps of southern India, then corroborating results with field observations of wild elephants. Not only did she care about the elephants, but she was eager to learn any tidbit of information from the people who worked directly with elephants. Bets made several landmark discoveries in the field of olfaction, showing that even a very sophisticated and complex animal such as the elephant uses some of the same chemical signals found in the insect world. One of her proudest moments came after many years of analyses - and hundreds of gallons of collected urine samples! - when she identified the Asian

elephant estrous pheromone (Z-7-dodecenyl acetate), a signal also used by many species of moths. She then documented further remarkable chemical convergences between the insect and elephant world with the discovery that mellifluous secretions in the moda musth state of young Asian male elephants contained some of the same chemical blends used by honeybees. Furthermore Bets identified the presence of frontalin, a musth pheromone, in elephant secretions - the same compound is a phero-mone of bark beetles. To help identify means to protect and conserve elephants, Bets dedicated herself to unraveling how chemical signals facilitate elephant societal interactions.

Bets was a highly respected scientist world-wide, having published multiple papers in top scientific journals such as *Nature*, and was an inspiring keynote speaker at many prestigious international meetings. A very thorough and precise scientist, Bets insisted that the scientific method was the most important path to follow in any research, and willingly shared her knowledge through countless manuscripts, presentations and numerous collaborations with young and established scientists around the world.

Bets found humor in life's situations and was one of the friendliest and most enthusiastic people anyone could hope to meet. Despite long hours in the lab she always made time for family, friends and her other passions: scuba diving, swimming and water skiing on the Columbia River at any time of year. Bets was jokingly known as the toughest member of the OGI water ski team!

In the words of some of her many friends and colleagues, Bets was “truly a dynamic individual, full of energy and inspiration”, “fun and fascinating”, “a wonderful person, a brilliant scientist, and a decent human being “,

“she will be missed - she was supposed to find so many more answers for us”.

Professor Bets Rasmussen’s passing is a true loss for elephants and for the community of people who care for them.



Elephant in Cambodia  
Photo by Gareth Goldthorpe