

Cellular, Organs, and Systems Pathobiology Branch

Editor's note: This is the first in a series of articles describing the four extramural program branches at the NIEHS.

The Cellular, Organs, and Systems Pathobiology Branch (COSPB) develops and administers programs of extramural grants that are designed to elucidate disease processes elicited by environmental agents. The scientific program administrators in COSPB evaluate the state of the science in specific, focused areas of toxicology and biology related to environmental health science, identify data gaps and research needs, and stimulate research in areas where data are lacking or where more focus or coordination of efforts is needed.

COSPB focuses on diseases that occur across an individual's life span, through the fetal, neonatal, prepubertal, pubertal, young adult, adult, and elderly stages. Current branch areas of study include the fetal basis of adult disease; developmental toxicology; neurodevelopmental and neurobehavioral disorders, including autism; asthma; endocrine disruption and diseases, including male and female reproductive diseases and dysfunction; immunotoxicology and autoimmunity; cardiovascular and pulmonary disease; and neurodegenerative diseases, including Parkinson disease and amyotrophic lateral sclerosis (ALS). In each case, our emphasis includes molecular, biochemical, and cellular approaches (including cell culture), as well as *in vivo* approaches using both traditional animal models and unique model systems such as genetically modified mammalian models, *Drosophila* species, *Caenorhabditis elegans*, and zebrafish.

Although COSPB's emphasis is on understanding environmentally relevant diseases, our approach is to stimulate research to elucidate common disease processes (such as apoptosis, oxidative stress, and alterations in cell cycle regulation and signal transduction pathways) that are induced by environmental agents, with the expectation that information on one environmental agent and disease will inform research on other agents and diseases. We also strongly encourage efforts to translate the results of this basic mechanistic research into intervention and prevention strategies that will lead more directly to improved human health and evidence-based public policy.

Investigators interested in pursuing research in areas covered by COSPB are encouraged to contact the appropriate program administrator (below, with their areas of expertise) for assistance.



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