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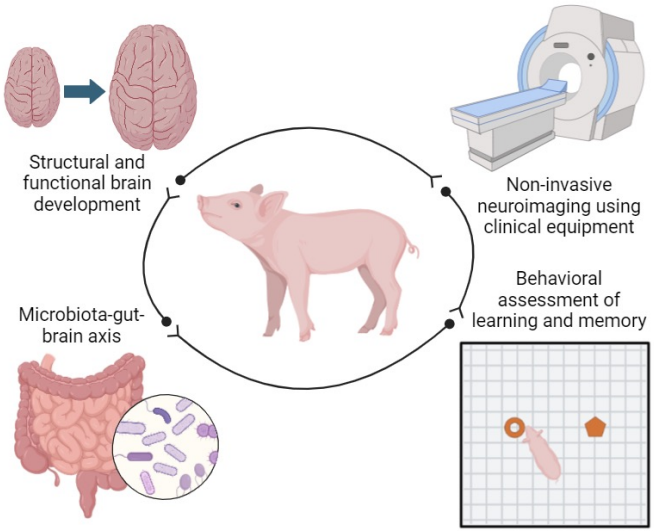
Translational studies utilizing pigs have underscored the critical impact of early-life nutrition on the microbiota-gut-brain axis. Leveraging pigs as a model for biomedical research facilitates preclinical assessments of environmental influences on physiological, immunological, and neurodevelopmental outcomes.



Research Interests

- Manipulation of the microbiota-gut-brain axis through early-life nutrition
- Personalized nutrition for supporting animal health and well-being as part of the One Health initiative
- Animal behavior as an indicator of nutritional status
- Optimizing dietary patterns for productivity and health in ag species

Current Projects

- Characterizing brain epigenetic patterns using non-invasive MRI techniques
- Comparative neurodevelopment between pigs and humans
- Optimizing the environment for pigs used as a biomedical model
- Development of an automated neuroimaging analysis framework

Keywords

Nutrition, animal models, pigs, brain development, behavior, precision agriculture, computer vision, health

Interest Areas for Collaboration/Future Work

Dr. Dilger is interested in working with developmental biologists to translate pig brain maturation events into the human context and identify molecular mechanisms by which early-life nutrition influences neurodevelopmental trajectories.

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