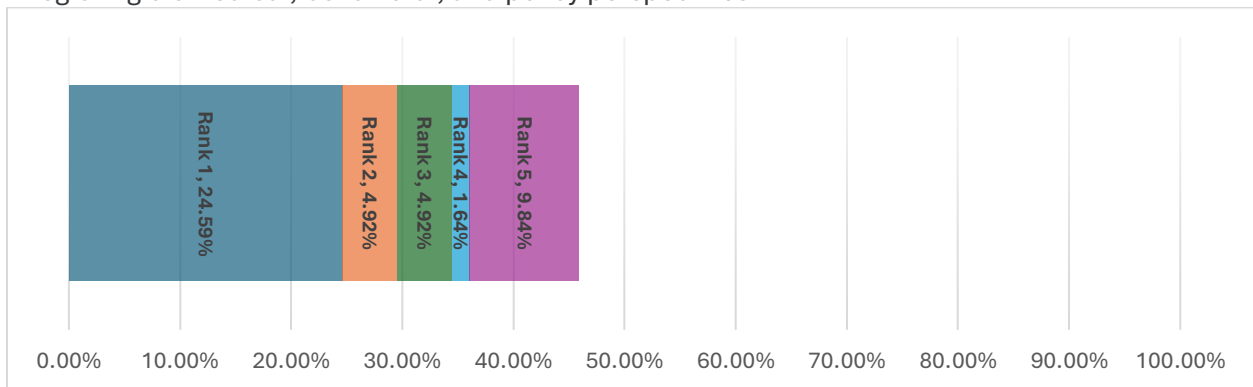


Research – Education Clusters (RECs) Ranked (n=61)

In April 2024, a survey was administered, which asked respondents to identify their top five Research – Education Clusters (RECs). The respondents were then asked to rank-order their selections based on the level of affinity (Rank 1 – most affinity to Rank 5 – least affinity) related to research and education. Below are ten RECs and the level of affinity that were identified for each rank level.

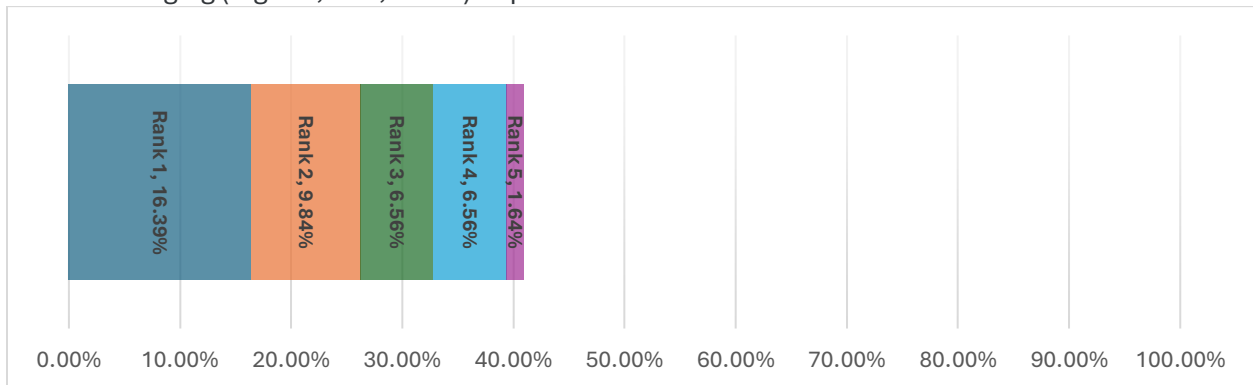
Substance Use & Behavioral Health

This cluster guides students to explore the underlying mechanisms of substance use, reward pathways, neurotransmitter systems and neural plasticity. Simultaneously, they engage with behavioral health theories and intervention emphasizing a biopsychosocial perspective. Students gain insights into holistic approaches to substance use prevention, treatment, and recovery, integrating biomedical, behavioral, and policy perspectives.



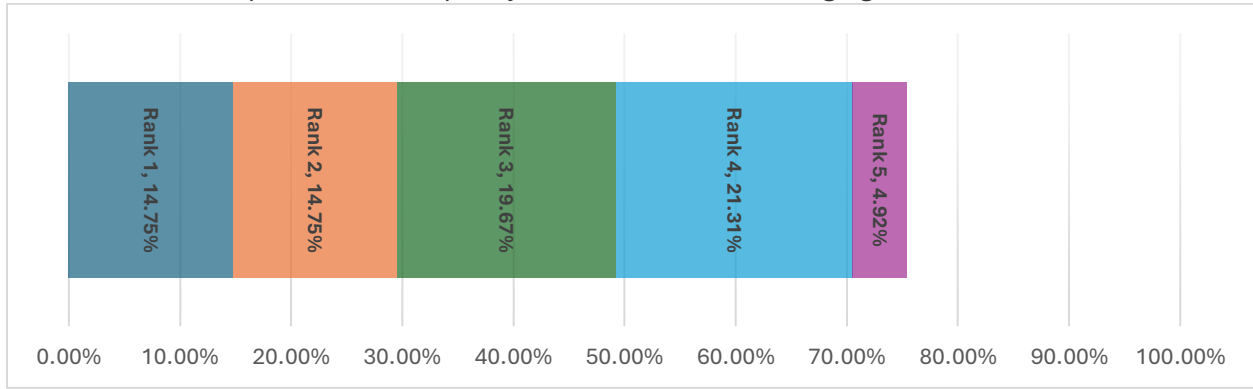
Anatomy, Physiology & Medical Imaging

This cluster guides students to improve lives through evolutionary and structural anatomy, forensic anthropology, functional morphology, biomechanics, and integrative physiology, and techniques of medical imaging (e.g. CT, MRI, DEXA) important to health and disease.



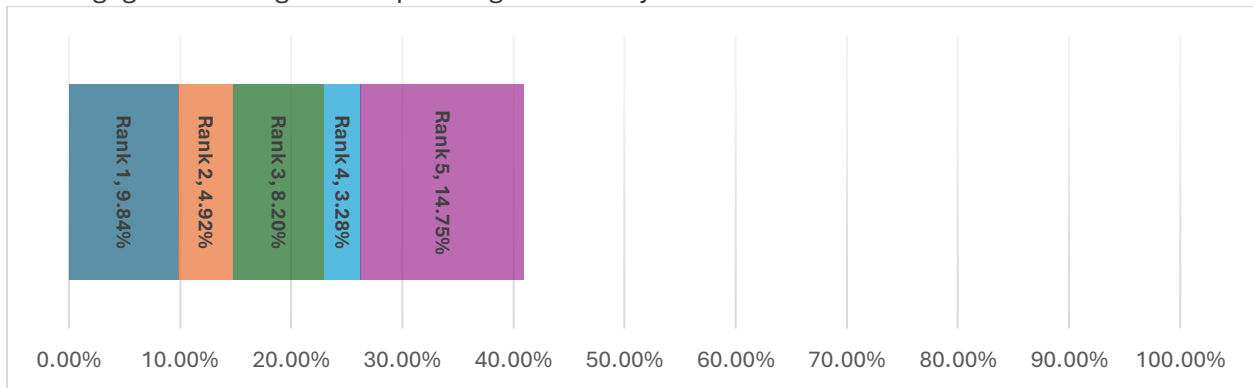
Cognitive Aging & Brain Health

This cluster integrates cutting-edge neuroscience, genetic epidemiology, psychological considerations, clinical and translational approaches, and longevity sciences. Students explore advanced neuroimaging techniques, biomarkers for disease, genetic differences, and health outcome trajectories across the lifespan. Students investigate new markers for disease, modifiable risk factors, and improvements in quality of life associated with aging.



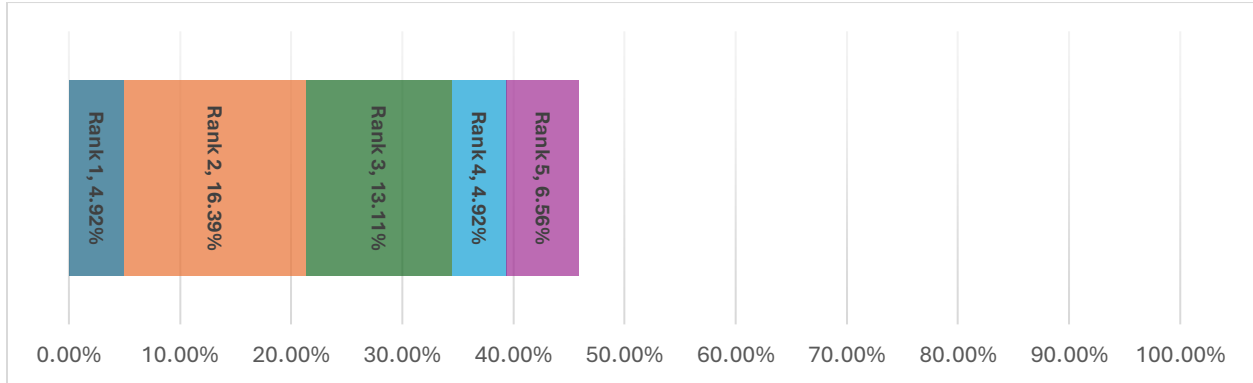
Eye Health & Aging

This cluster integrates cutting-edge neuroscience and the exploration of ocular anatomy, physiology, and pathology with the clinical and translational approaches to improve outcomes of eye health. Students gain insights into the intricacies of the visual system, common eye disease, and engages in strategies to improve age-related eye health.



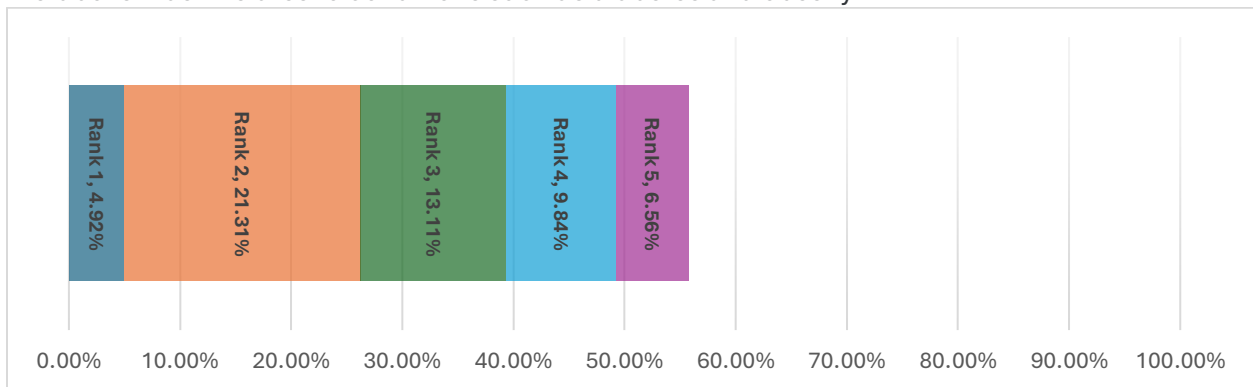
Drug Discovery, Development & Regulation

This cluster guides students in the intricate journey of drug discovery, development, and regulation. It equips students with a holistic understanding of the pharmaceutical landscape where students delve into the science behind drug discovery, preclinical research, clinical modeling and studies, FDA drug review, and post-market drug safety monitoring aspects.



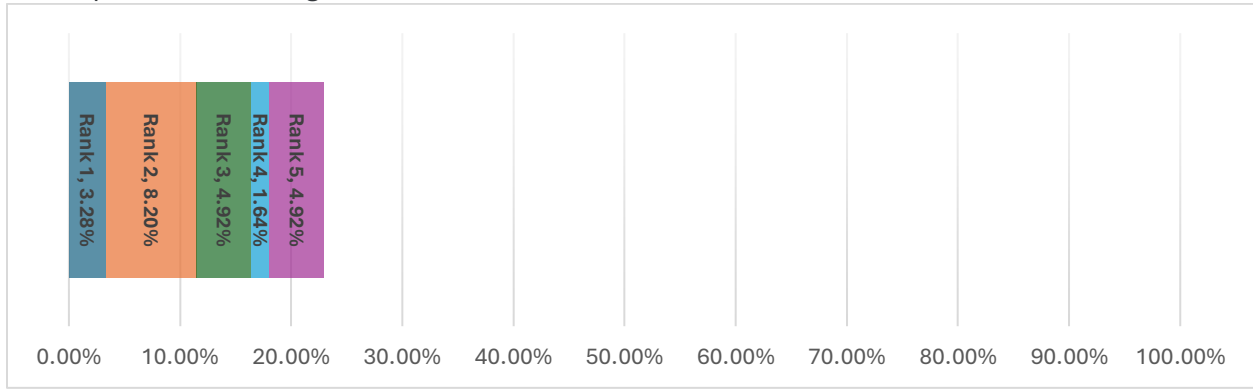
Metabolic Health & Disease

This cluster guides students to apply specialized knowledge and skills in cutting-edge cellular and molecular mechanisms of disease, fundamental and translational investigation of nutrition and metabolism as it relates to conditions such as diabetes and obesity.



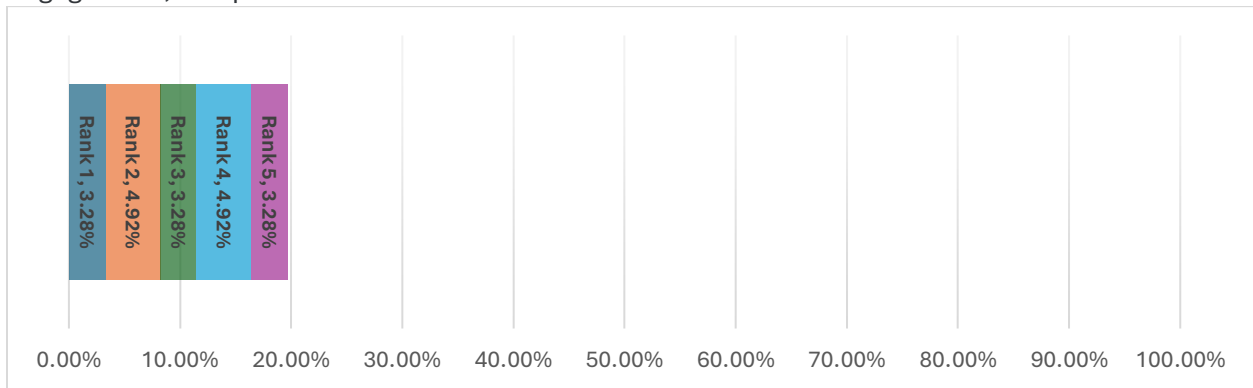
Community & Healthy People 2030

This cluster guides students to address complex community health challenges, drive evidence-based policy changes, and address health disparities aligned with the vision of Healthy People 2030. Students delve into the influence of social determinants of health across the lifespan, policy analysis, health outcome evaluation, community-based participatory research methodologies, and health promotion strategies.



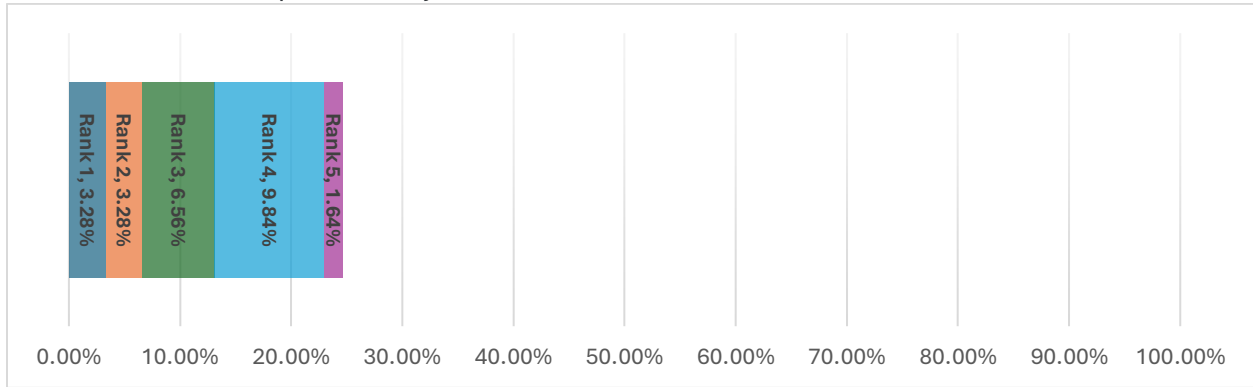
Digital Health

This cluster guides students into the intersection of healthcare and technology, application of mobile health devices, wearable sensors, and digital therapeutics in disease prevention, diagnosis, and management. Simultaneously, students engage with data science and analytics, artificial intelligence, and machine learning algorithms to improve clinical decision making, patient engagement, and point of care workflows.



Maternal Child Health

This cluster guides students to promote the wellbeing of mothers, infants, and children. From anatomical, cellular, and molecular aspects to health policy, students explore the challenges of pregnancy, fetal development, and perinatal care. They develop skills and tools pertaining to analyzing maternal and child health outcomes, pregnancy-related complications, infant mortality, and childhood developmental trajectories.



Precision Medicine & Bioinformatics

This cluster guides students to develop a robust skill set encompassing forensic science, understanding of genetics, multi-omics, and computational tools essential for analyzing vast biological datasets. They learn to use next generation sequencing data and visualization techniques to extract meaningful insights from complex biological data.

