Constrained Clustering for Departmental Reorganization

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Over the past year the College of Business has been examining its organizational structure. Realignment is needed to rectify rather large disparities that have developed over time between departmental faculty sizes. These disparities translate into uneven workloads for departmental support staff and imbalanced faculty service obligations. Since the departmental structure was originally conceived to accommodate a faculty approximately 50% larger than its present size, the goal of this project is to consolidate the current seven departments into a fewer number. We consider a clustering approach for this consolidation process. Using data collected from a faculty questionnaire asking how each faculty viewed their connection to other disciplines, we employed a clustering optimization model to uncover “optimal” reorganizations of disciplines into fewer departmental clusters. We compare these results to those found via traditional hierarchical clustering models as well as ad-hoc groupings proposed by various members of the Faculty Council.

Bio: Professor Rump earned a B.S. in Applied Mathematical Sciences at Texas A&M University and a Ph.D. in Operations Research at The University of North Carolina at Chapel Hill. Before joining BGSU, he served as an Assistant Professor of Industrial Engineering at the University at Buffalo (SUNY). His interests cover a broad span of applications including sports statistics, Internet congestion design and control, production planning, queuing facility location, hazardous material routing, aircraft maintenance routing, police districting and resource allocation, and emergency vehicle dispatching and routing. He is a member of the Institute for Operations Research and the Management Sciences (INFORMS), with active participation within its sections on Location Analysis (SOLA), OR in Sports (SpORts) as well as the INFORMS Forum on Education (INFORM-ED). He is also president of Omega Rho, the international honor society for operations research and the management sciences.

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