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# Academic Coaching Data Analysis Project Proposal

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## OVERVIEW

An optimal matching between Academic Coaches (ACs) and students can benefit both the Academic Coach, in terms of personal development and subject matter information gain, and the student, whose academics, stress, and perception of self can improve significantly. Currently, Michael Poljak, Assistant Director, and TC Eley, Coordinator, select matchings based on a variety of factors including the student's and AC's program of study, gender, and school year. However, identifying the factors in this matching that most contribute to student success can help create better pairings between students and ACs. There may be underlying factors, such as personality types, race, family background, etc., that allow the AC to better connect with and help the student achieve their goals.

## GOALS

1. Determine which aspects of the AC program or particular ACs have significant contributions to student success.
2. Determine underlying best practices to generalize across the AC program.
3. Develop an algorithm that creates optimal matches between ACs and students.

## SPECIFICATIONS

The data for this project will combine objective (age, race, gender) and subjective (perception of self, perceived stress levels) components to determine which features are most important in the matching process. The demographics for ACs and students will be useful for the objective component and may reveal an underlying association between ACs and students of similar or of different backgrounds. The particular skills the student wants to work on will be determined through the initial consultation meeting and the pre-session survey to determine the common student weaknesses and AC strengths from the data. Student success can then be evaluated on the post-session survey (to account for subjective improvements) and grades.

## MILESTONES

## Identify and Obtain Relevant Datasets

Relevant datasets include initial consultation meeting notes, pre- and post-session surveys, student and AC demographics, and student grades.

## Extract Key Features from the Data

Perform feature engineering to determine which of features contribute significantly to student success and identify any underlying patterns in strengths or weaknesses for ACs and students.

## Generate Student Success Metric

Use data available on students before and after meetings with ACs to evaluate student progress on goals.

## Create Matching Model

Create a model that takes appropriate features and weights them such that ACs can be optimally matched to students based on their background and strengths.

## Evaluate and Tune Model

Test and modify models to increase student success.