

# An Integrated, Program-Level Approach to Enrollment Planning

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# Goals for Today

- Show UCR's new approach to long-term enrollment planning
- Provide those interested in pursuing a similar process with a starting point for planning and discussion

# History of Enrollment Planning Model

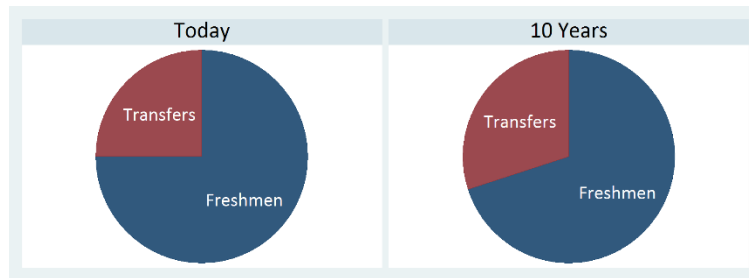
- Prior model used for over 10 years
- Difficult or impossible to update for some scenarios
- Did not always behave logically
- Could not answer certain important questions

# Program-Level Forecasting (PLF) Model

- An entirely new approach
  - Program-specific student level model
- ~3 months in development
- ~1000 statistical models
- ~1500 lines of code
- ~60 minutes of multi-core processing time to generate the data set for a scenario
- Flexible enough for future enhancement

# What Does “Model” Mean Here?

- A simulated university with enrollment projections that are determined by:
  - Administrative expectations or goals



- Statistical relationships (logistic regression models)

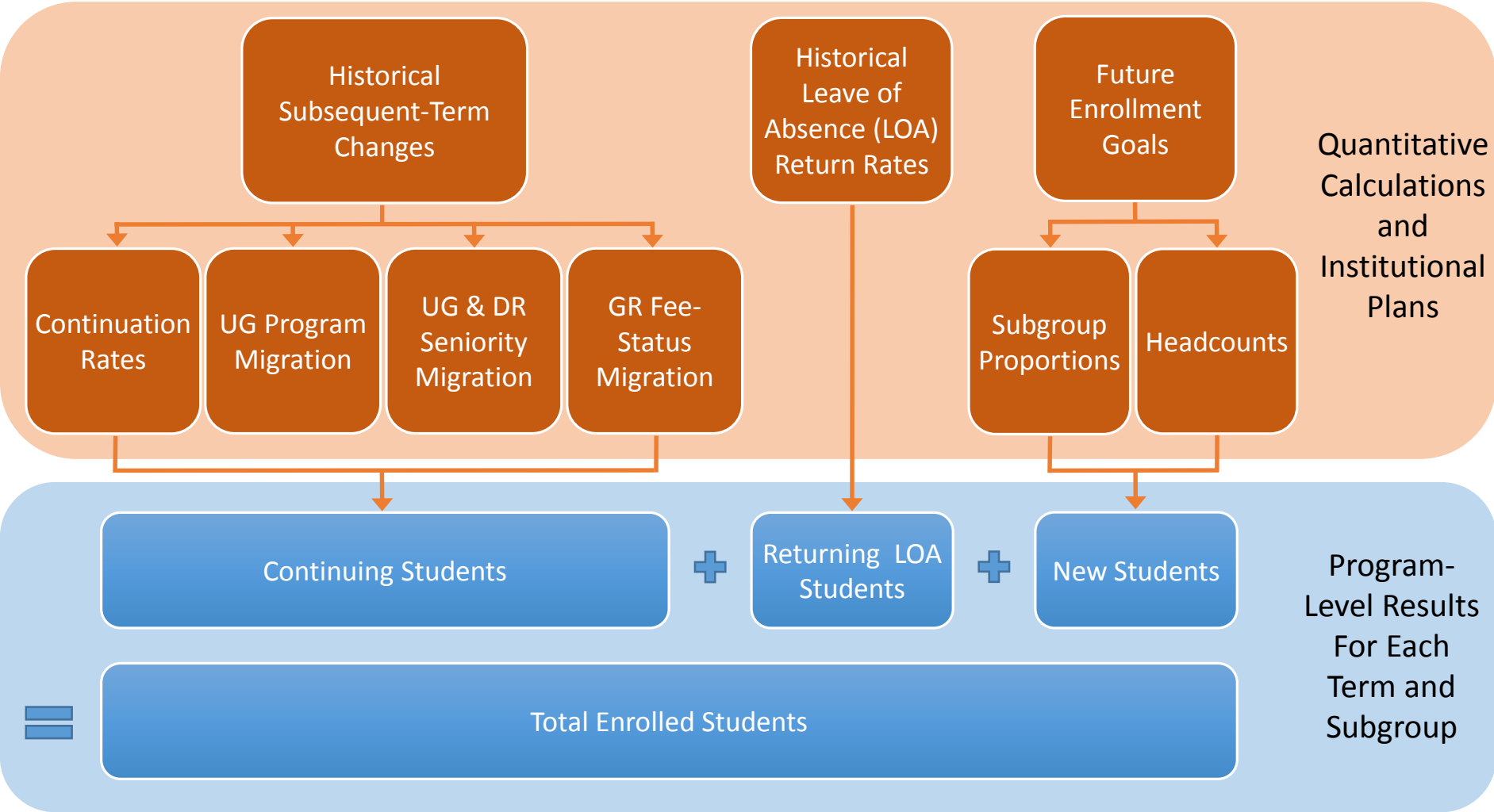
$$Retention = \alpha + \beta(Terms\ Enrolled)$$

- Institutional policies

10 terms after Ph.D. candidacy =

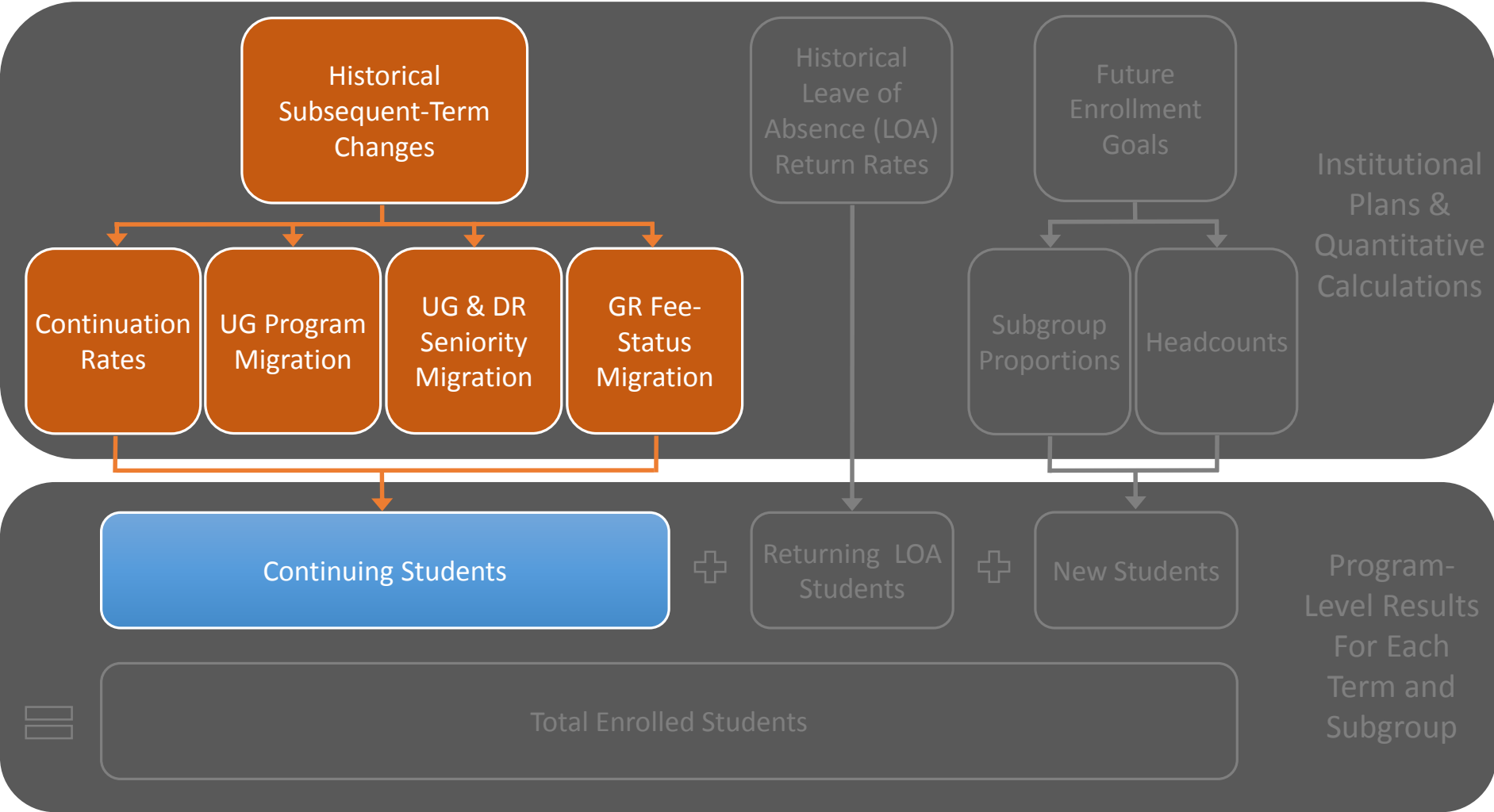


# PLF Model Conceptual Flow Chart



DR = PHD student  
 GR = Graduate student  
 UG = Undergraduate

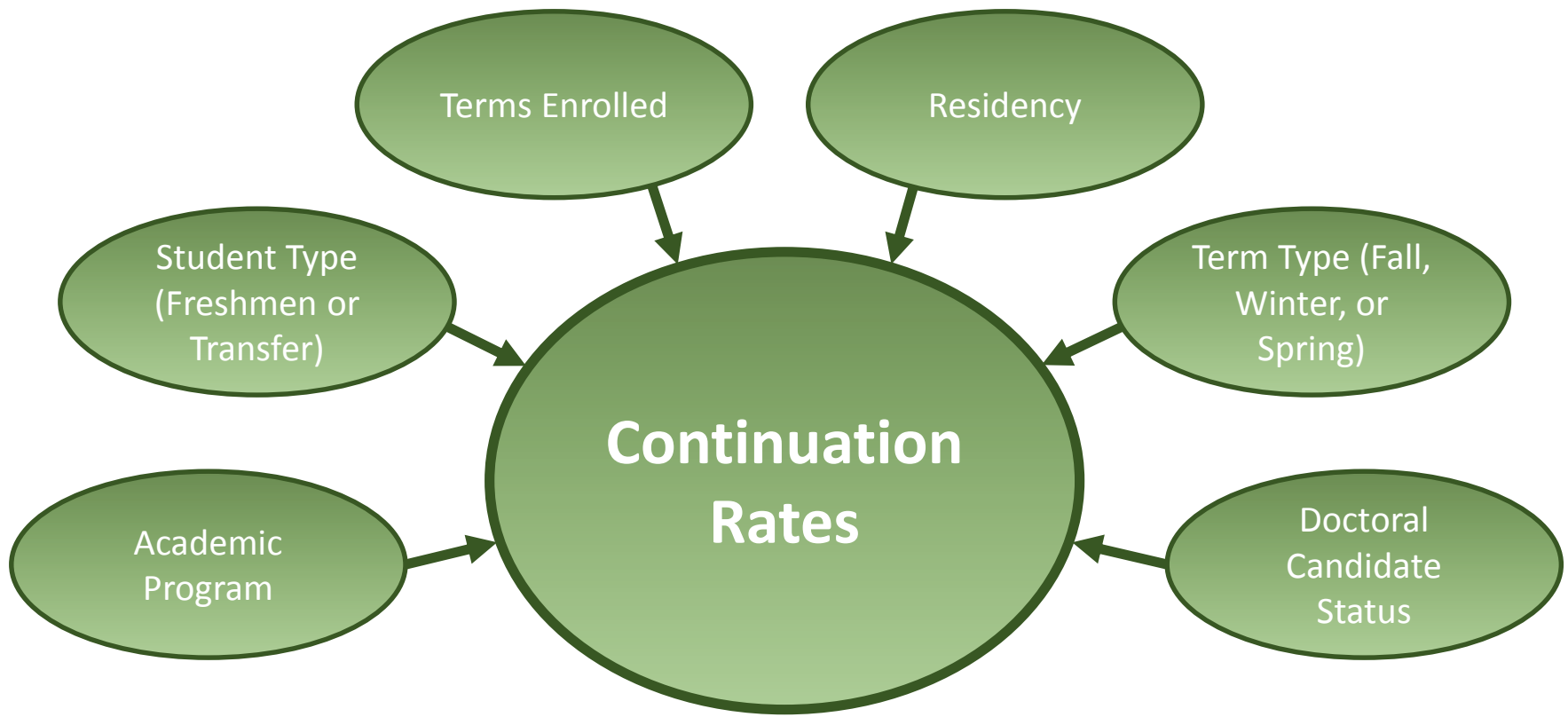
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# Continuation Rates

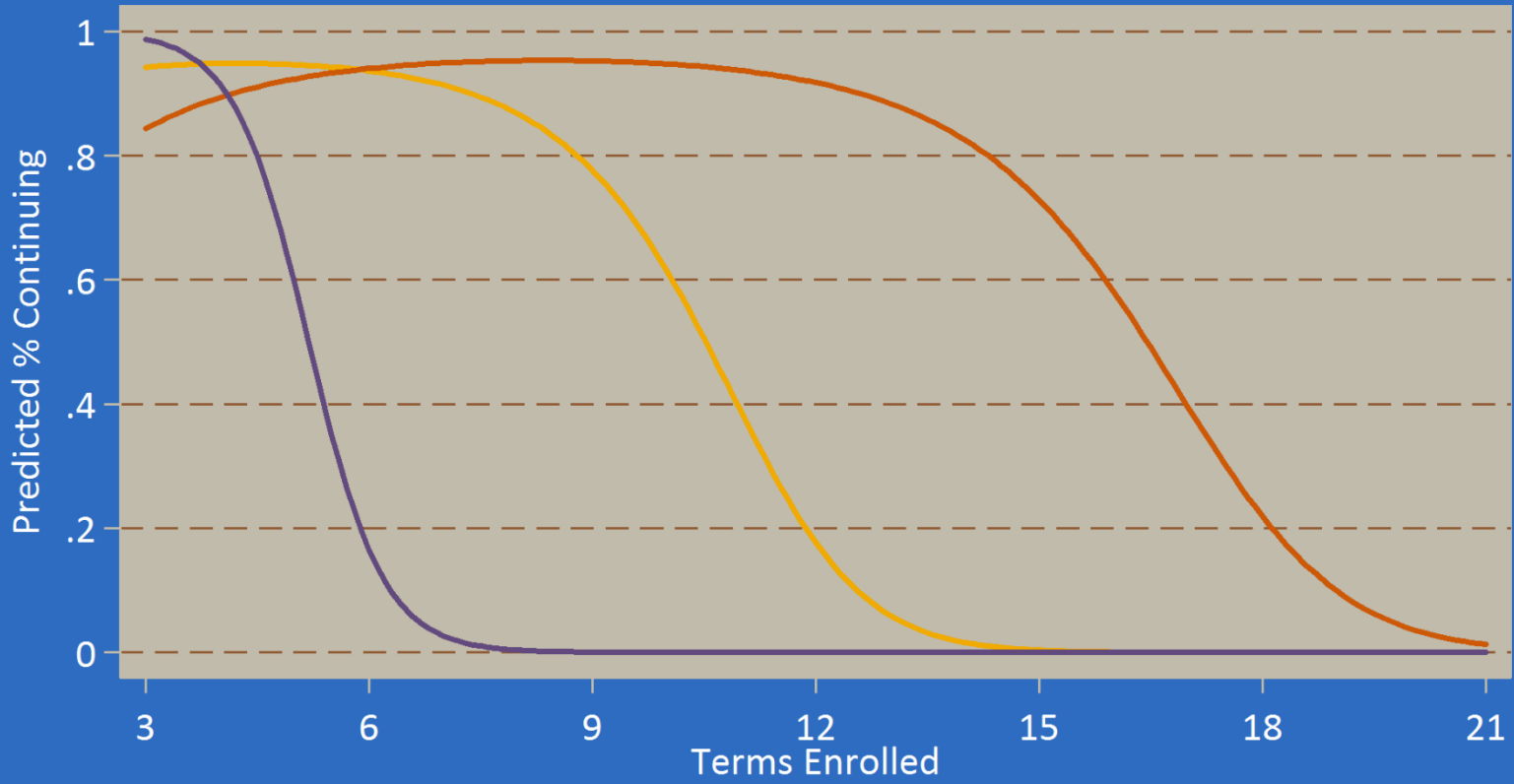
- Definition: the percentage of students enrolled in a term who are also enrolled in the following term





# Continuation from Spring to Fall

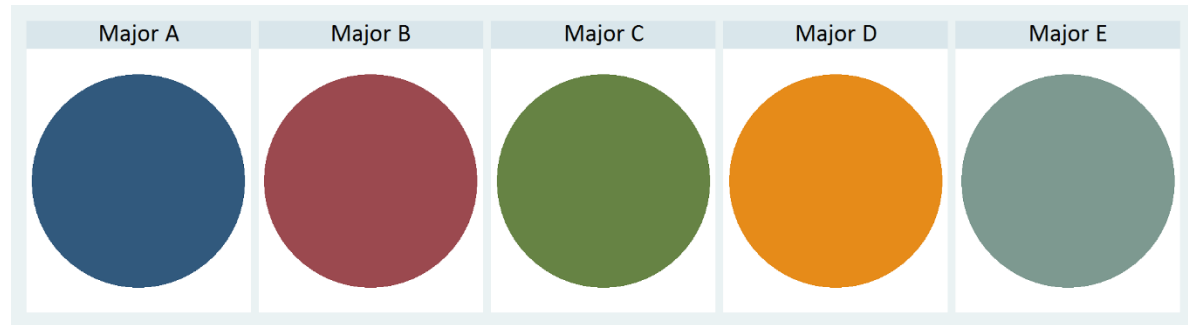
## California Residents in Selected Programs



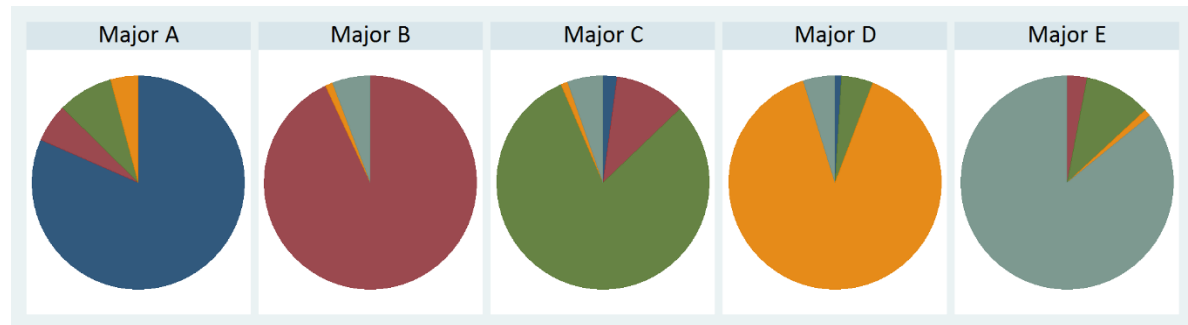
Psychology (BA)      Electrical Engineering (PHD)  
Statistics (MS)

# UG Program Migration

Term (i)



Term (i+1)

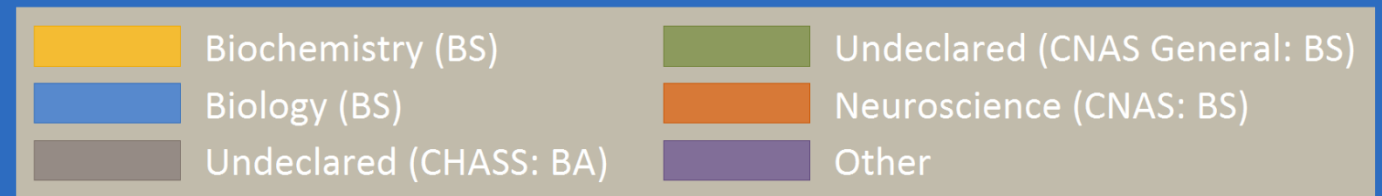
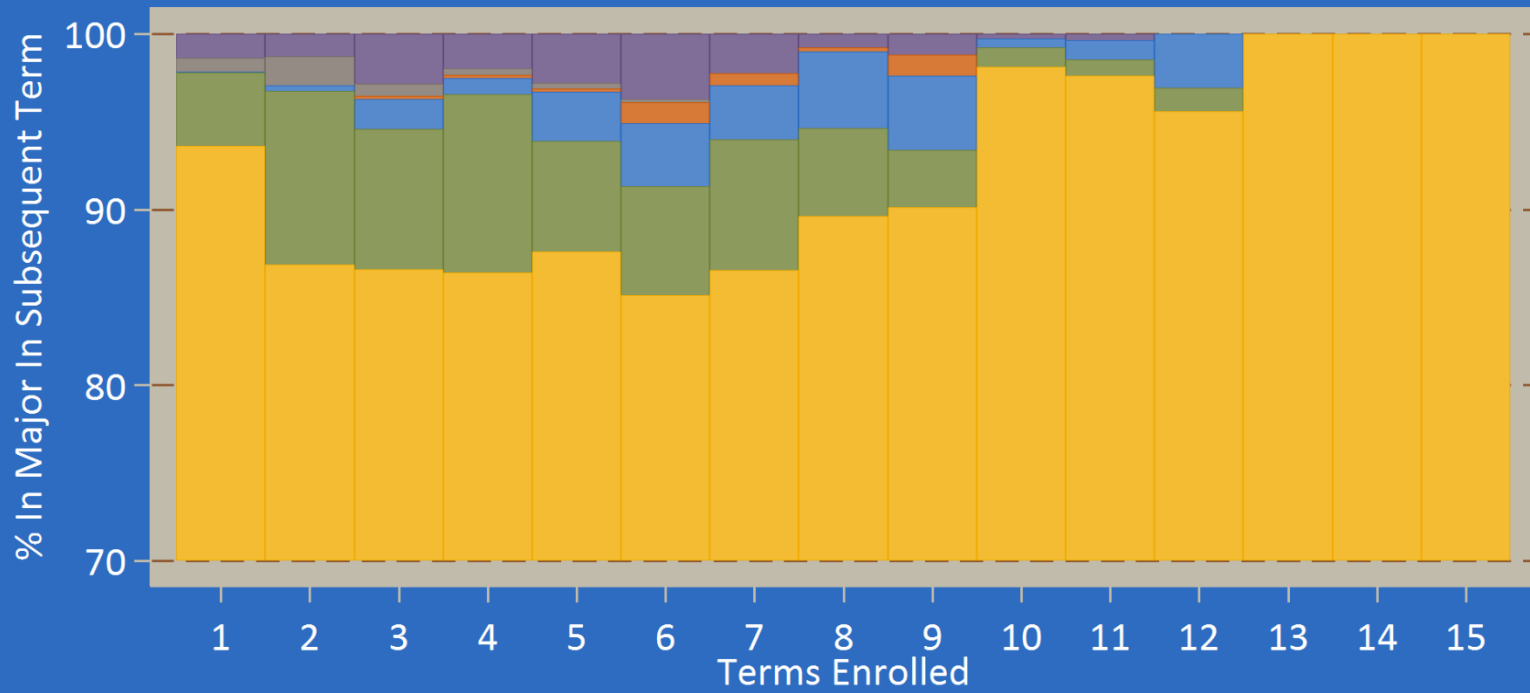


Critical dimensions to consider:

- Term Type (Fall, Winter, or Spring)
- Student Type (Freshman or Transfer)
- Terms Enrolled

# Program Migrations: Biochemistry Majors

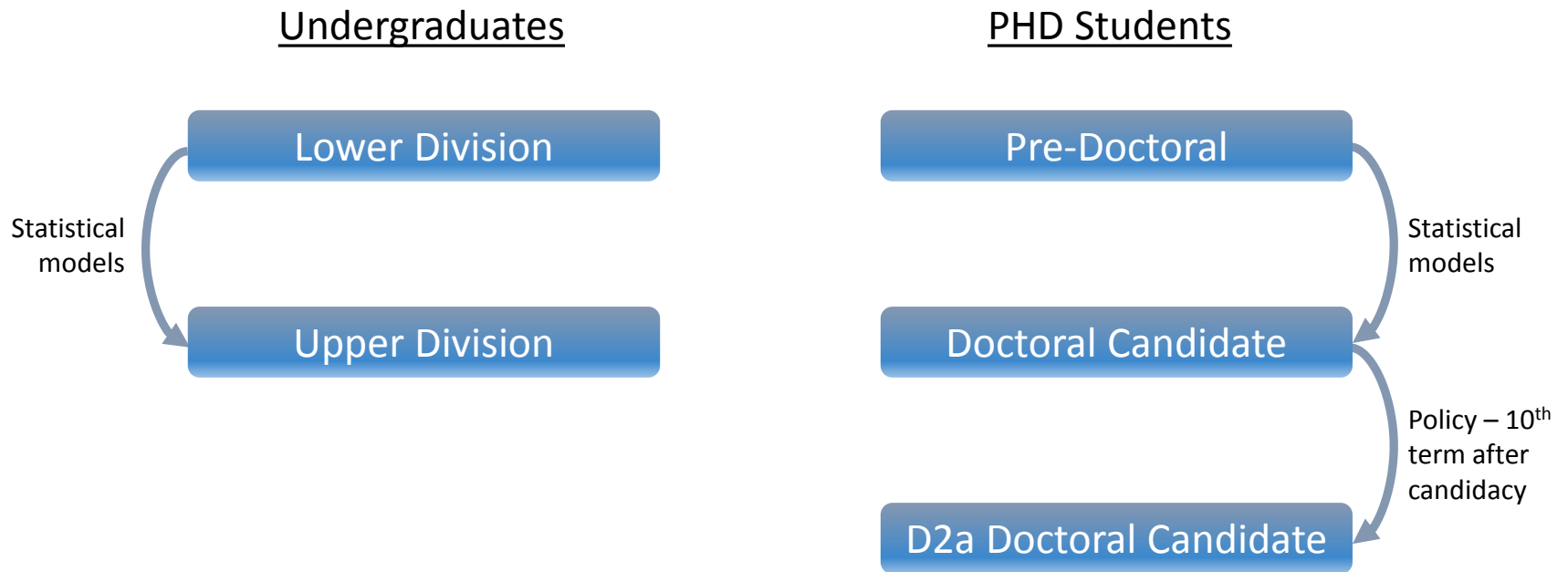
## Among Students Majoring in Biochemistry at N Terms Enrolled



Note: Does not include transfer students

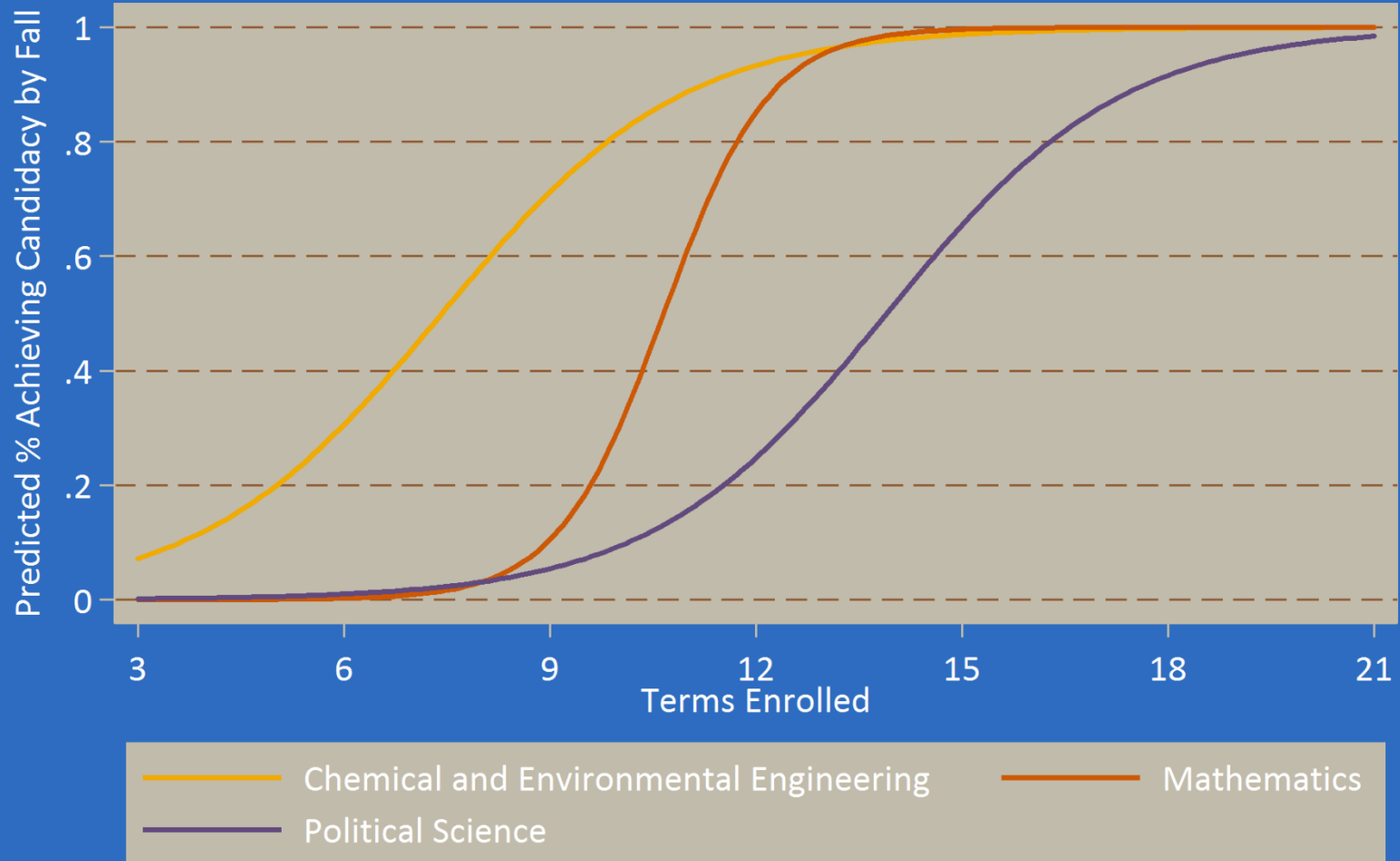
# UG and DR Seniority Migration

- Subsequent-term changes by program that must be statistically predicted or defined by policy rules:



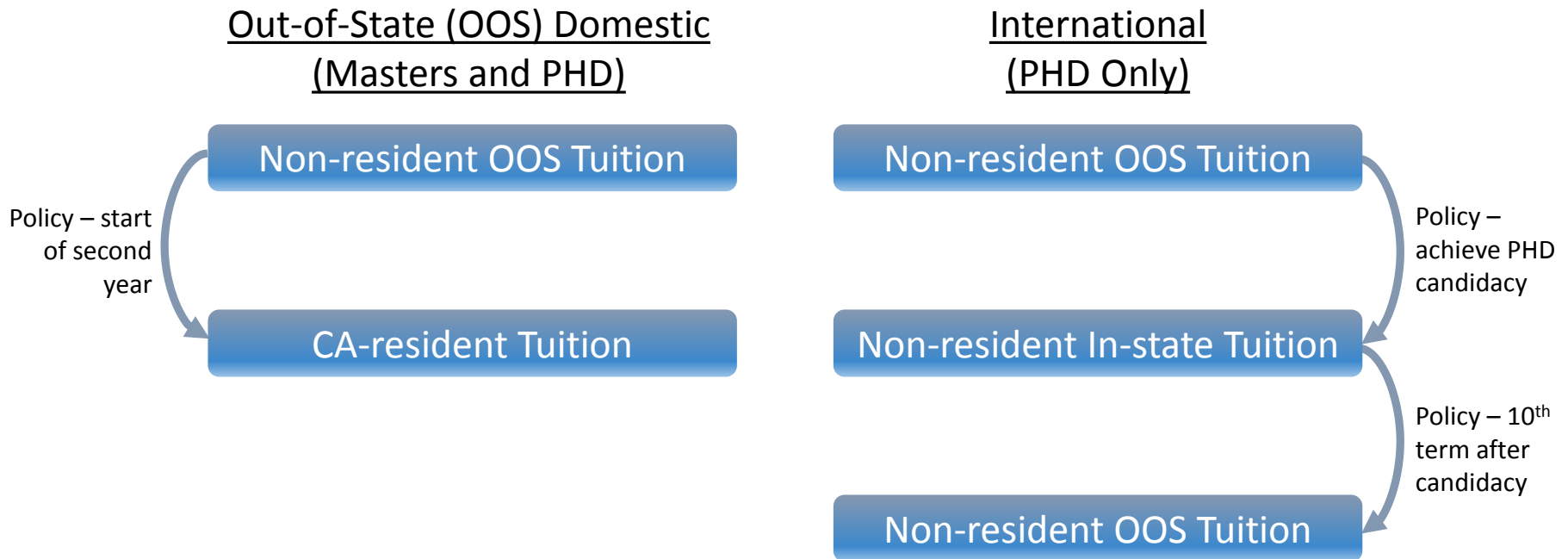
# Doctoral Candidacy from Spring to Fall

## Pre-doctoral PHD Students in Selected Programs

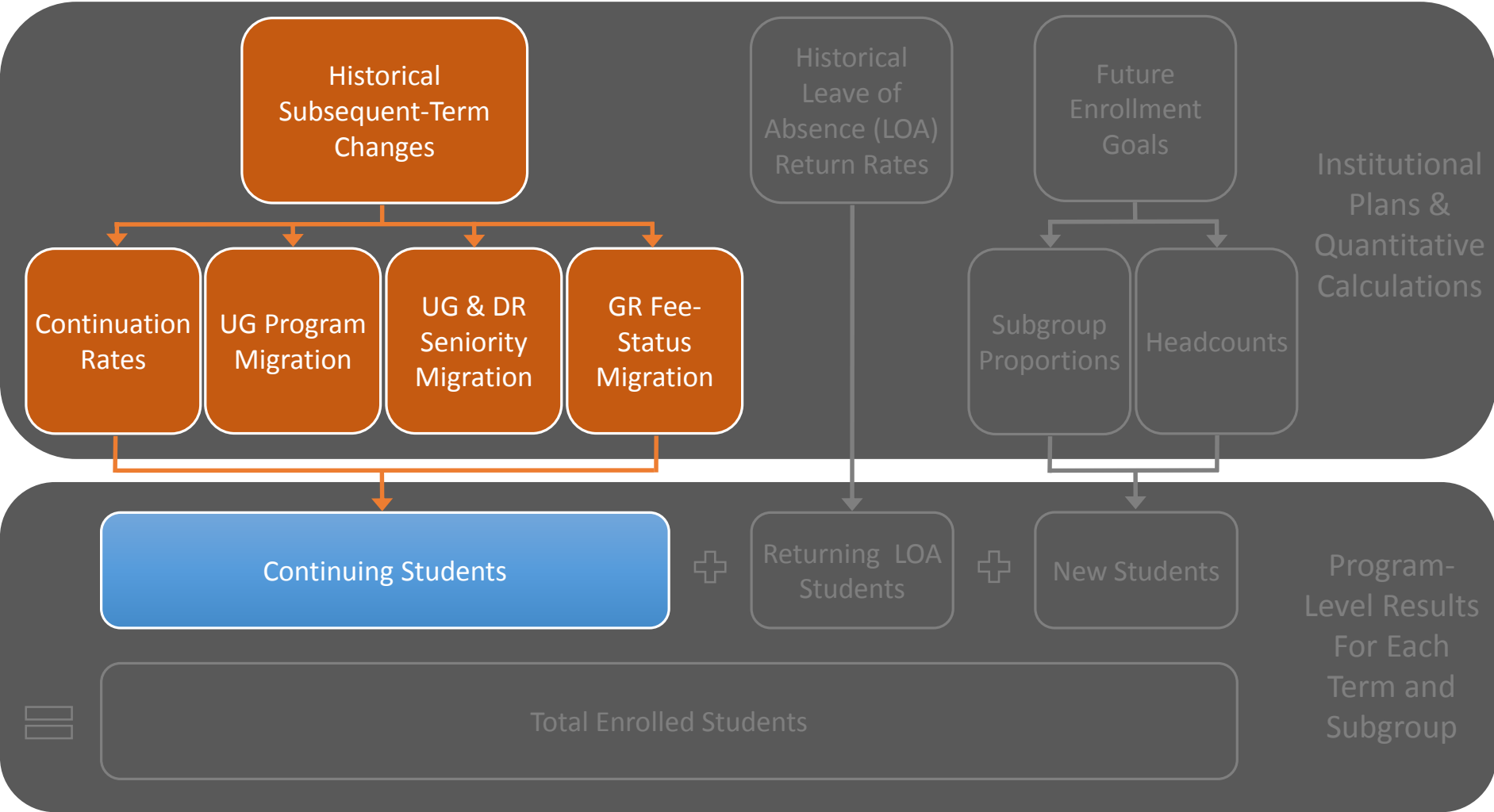


# GR Fee-Status Migration

- GR students move through different tuition categories depending on how long they have been enrolled and their initial residency status

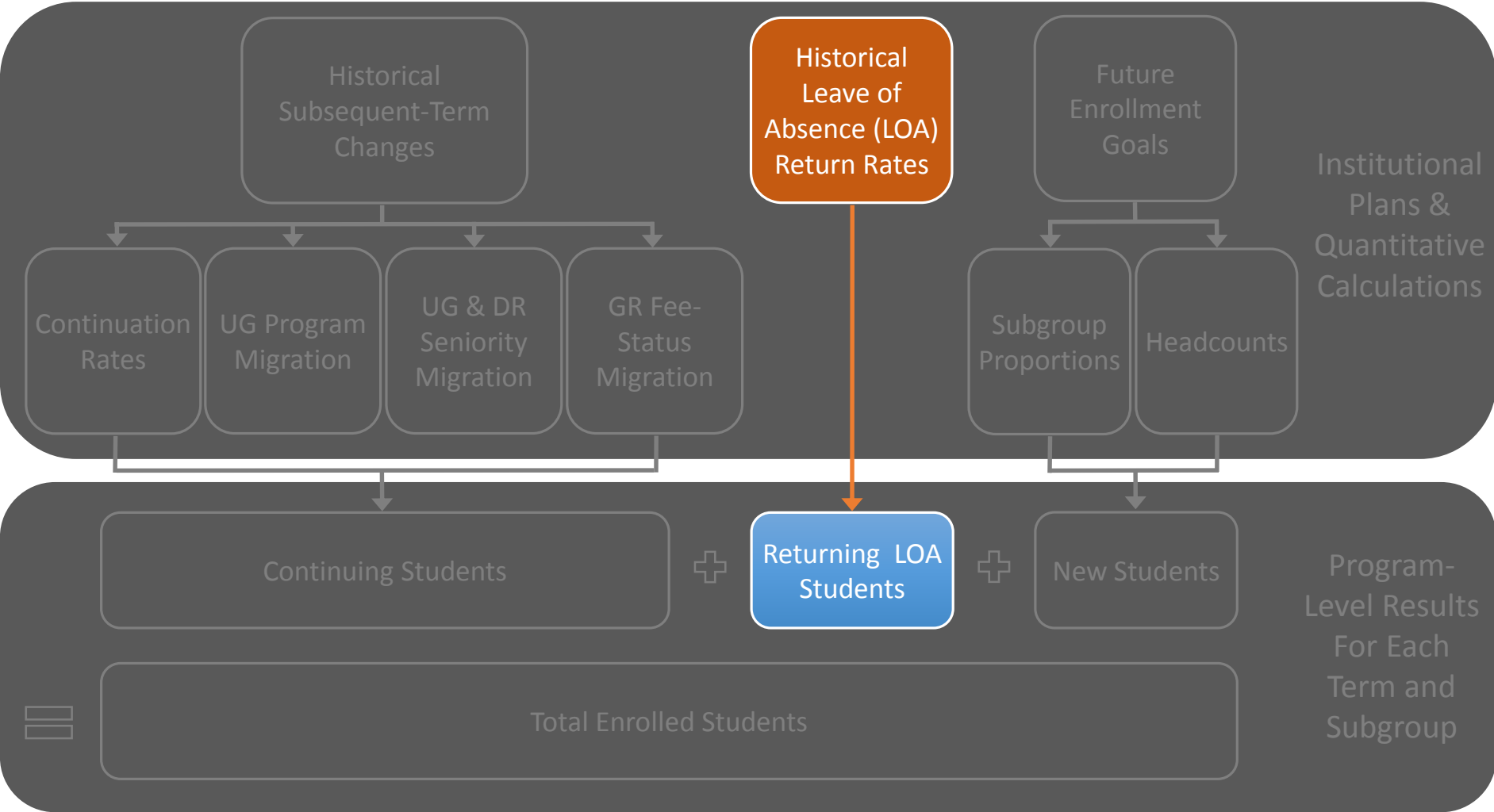


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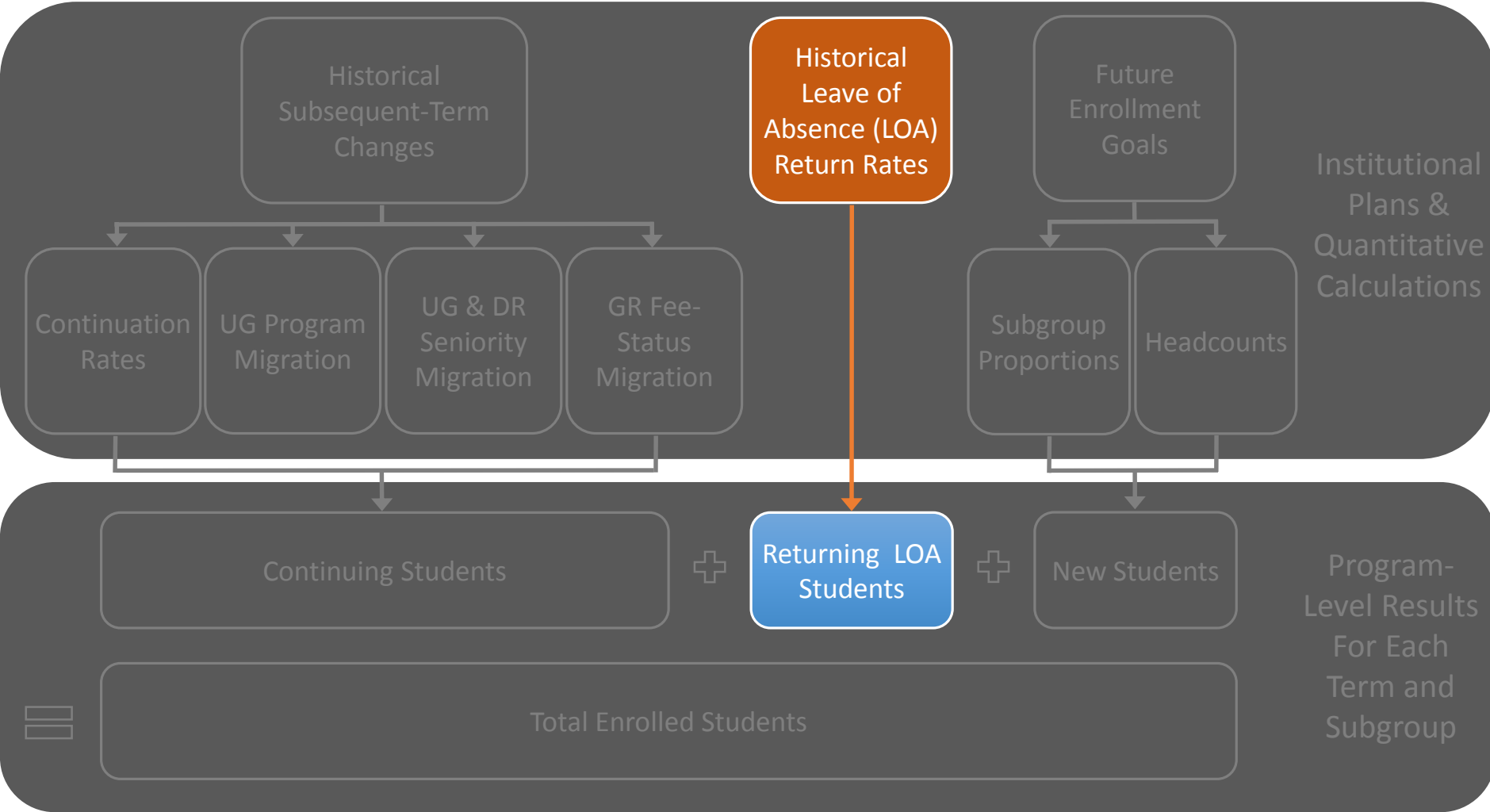
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# Historical LOA Return Rates

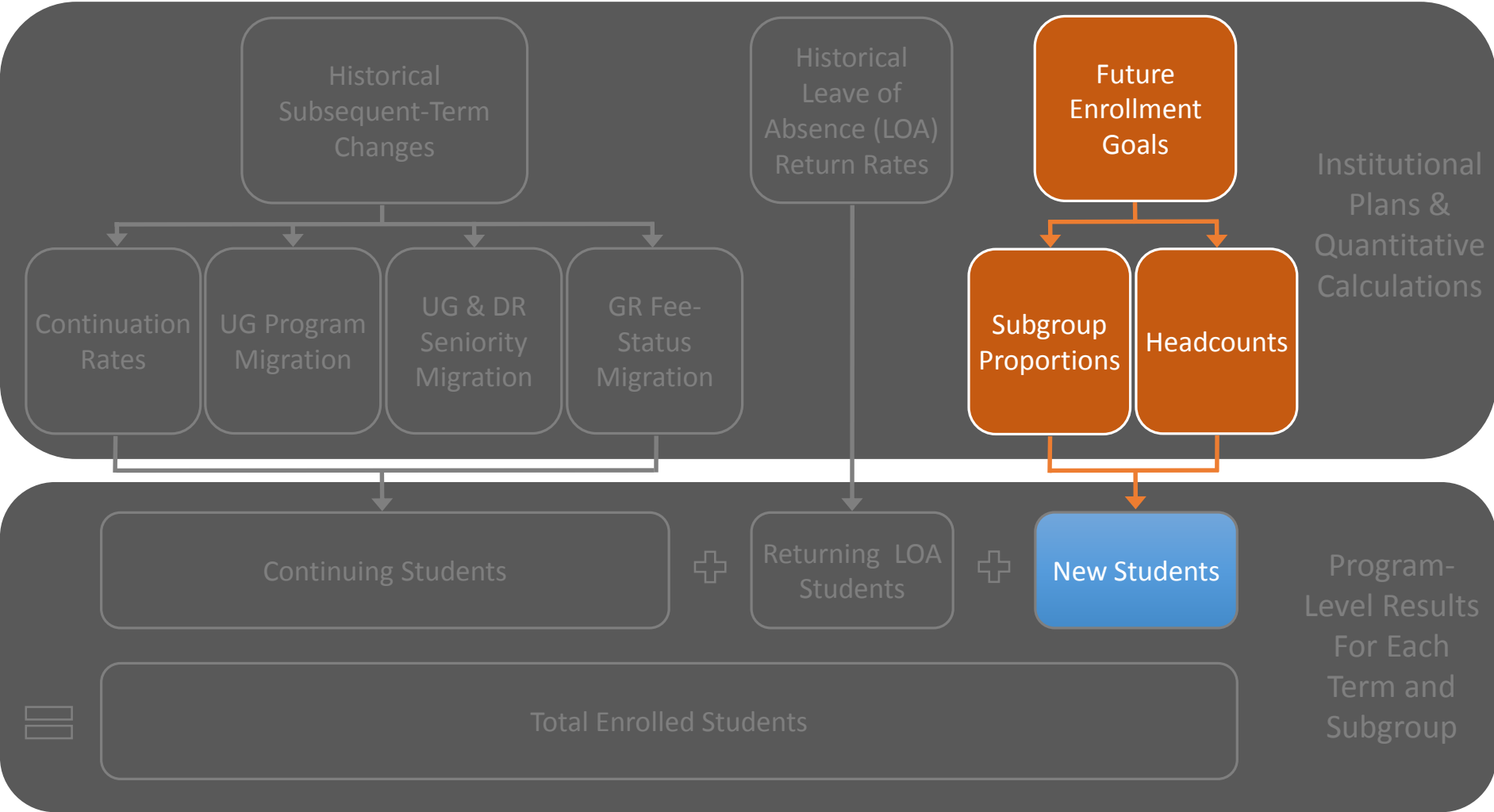
- ~2% of non-new students in each term were not there the previous term
- Accurate enrollment models must include these returning LOA students
- A 2-step algorithm determines:
  1. How many LOA students return in each program/term combination
  2. The distribution of those students across all major subgroups of interest

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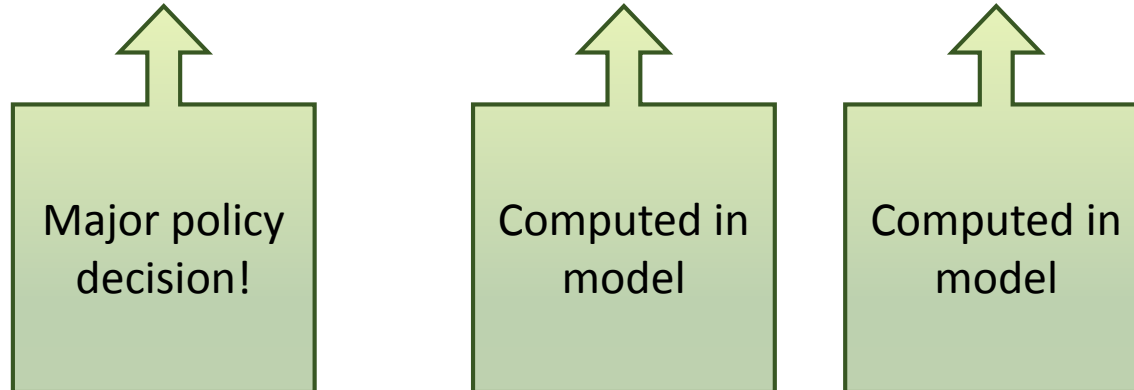
# Subgroup Proportions

- Proportions of key subgroups can stay the same or be forced to move toward some future enrollment goal (e.g., increase percentage of UG who are out of state)
- Proportions can only be manipulated for new students, and existing students will continue through their programs naturally

# Headcounts

- New students within a program must be equal to:

(Future Enrollment Goal) – (Continuing) – (LOA Returners)



# Future Enrollment Goals

- Unlike prior institutional research modeling efforts, program-specific enrollment goals now come directly from deans and department chairs
- Their goals are informed by current budget/planning expectations, thus aligning academic and budget/planning intentions for the first time

# Alignment of Campus Planners

- Administrative benefits from new PLF model:
  1. Grad Division/Program Chairs - receive new-student recruitment goals by graduate program that help them plan for future staffing and course offering needs
  2. Associate Deans/Enrollment Management - receive new-student recruitment goals by undergraduate program that help them manage the admissions and enrollment process
  3. Academic Planning & Budget – can utilize forecasting results that are quicker to produce and more closely tied to reality than prior model due to both (a) statistical improvements and (b) input from colleges

# Appendix

- E-mail [ryan.johnson@ucr.edu](mailto:ryan.johnson@ucr.edu) with questions
- Special thanks to Bryce Mason for his help on this presentation and project