Deans and Departmental Data

Tom Cheatham, Dean
College of Basic and Applied Sciences (CBAS)
Middle Tennessee State University (MTSU)

Bret Danilowicz, Dean
College of Science and Technology (COST)
Georgia Southern University (GSU)

Chris McCord, Dean
College of Liberal Arts and Sciences (LAS)
Northern Illinois University (NIU)

Panel Outline

- **Middle Tennessee Data, Tom (10 min)**
- **Georgia Southern Data, Bret (10 min)**
- **Northern Illinois Data, Chris (10 min)**
- **Discussion/Questions, All (rest)**

Middle Tennessee: Overview

- **Doctoral-granting, regional, comprehensive**
- **~26,500 students; 900+ faculty**
- **35 miles SE of Nashville**
- **$30-$35M in extramural funding/yr**
- **Programs of Distinction: Aerospace, CIM, RIM, Accounting**
- **8 Ph.D. programs, 3 in the sciences**

Departmental Data at MTSU

Tom Cheatham, Dean
College of Basic and Applied Sciences (CBAS)
Middle Tennessee State University (MTSU)

MTSU CBAS: Overview

- **10 departments—AERO, ABAS, BIOL, CHEM, CIM, CSCI, ET, MATH, MS, PHYS**
- **5,000+ majors; 200+ faculty**
- **$12-$15M in extramural funding/yr**
- **3 PhD programs: MBS, CPS, MSE**
- **Programs of Distinction: AERO, CIM, HS, PMS**

MTSU: Data Needed and Why

Need?

- **To learn what departments are doing**
- **To learn what faculty, staff & students are doing**

Why?

- **Recognize departments that have a good year**
- **Recognize faculty & staff that have a good year**
- **Encourage under achieving departments**
- **Encourage under achieving faculty/staff**

MTSU: Plan for Data Collection

Have each Chair compile an End-of-Year Report.

Compile each of following sections by faculty:

- **Awards won**
- **Teaching innovations**
- **Refereed articles/books, in-press, under review**
- **Other publications**
- **Grant proposals submitted/funded**
- **Service: public, professional, university**
- **UGR and EXL activities**

(Handout 1)

MTSU: Use of Data

State-of-College Address and Reception

- Summarize last year's successes
- Present department/faculty/staff excellence awards
- Discuss goals for new academic year

(Handout 2)

Annual college magazine-*BASIC HIGHLIGHTS*

- Highlight departmental/program successes
- Highlight faculty/staff/student successes
- Highlight alumni and donor

(Handout 3)

MTSU: Outcomes of Data Collection

1. **Chairs learn what their faculty/staff have done**
2. **Dean has data about departments/faculty/staff/students—1000 uses**
3. **Faculty/staff feel valued—someone knows**
4. **Some faculty/staff take it as a challenge to win an award (after winning a specific award, can not win again for at least 3 years)**
5. **Faculty see what is important to the dean**

National Study of Instructional Costs and Productivity, & DFW tracking

Bret Danilowicz, Dean
College of Science and Technology (COST)
Georgia Southern University (GSU)

NSICP Data

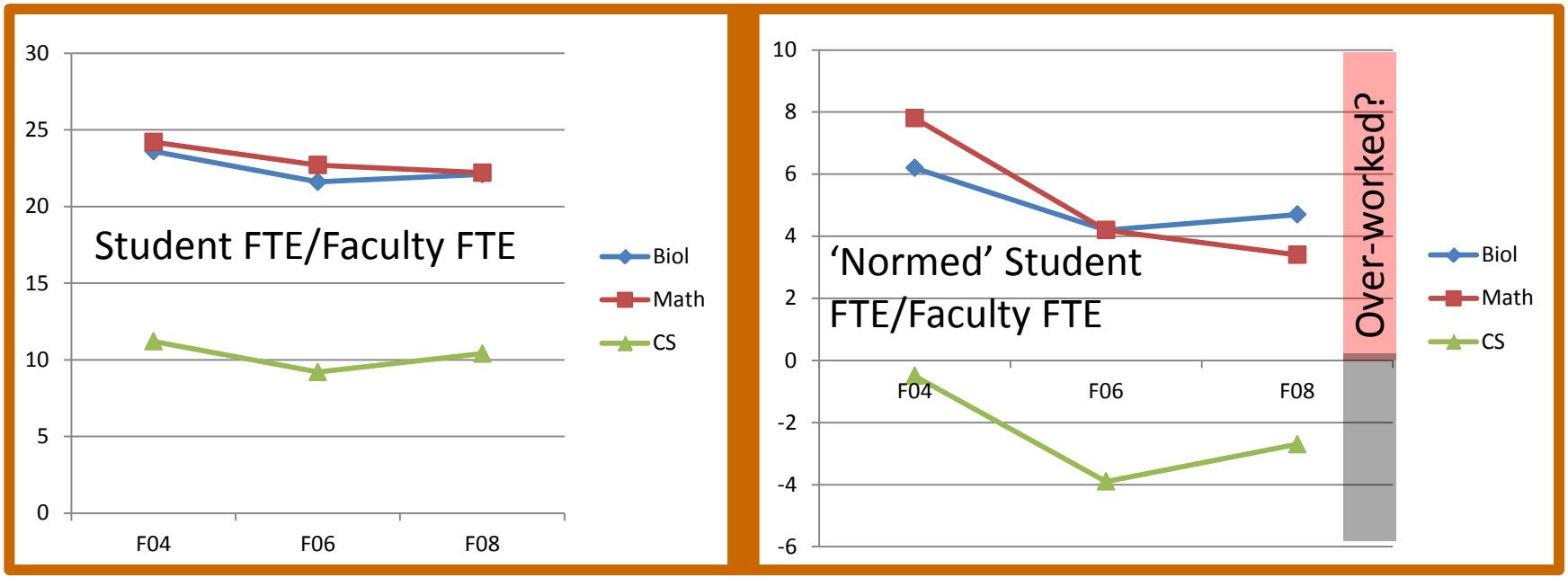
- National Study of Instructional Costs & Productivity
- Also called the «Delaware Data» or «Delaware Study»
- Helps to interpret student credit hour production and cost of teaching per student credit hour
- Compare your data to Carnegie peers

Effort Per Faculty Member

CIP	Discipline	FTE Faculty	Total FTE Students	FTE Students/ FTE Faculty	National Norm	Teaching more (-) or less (+) than Norm
26.01	Biology, General	39.13	863	22.1	17.4	-4.7
27.01	Mathematics	60.00	1333	22.2	18.8	-3.4
11.01	Computer Sciences, General	9.00	93	10.4	13.1	+2.7

- **Data from Fall Semester Only!**
- **As a load approximation, FTE/FTE = 6 is an entire 3 hr 30 student class**
- **Helpful in balancing loads, supporting areas of distinction, determining departmental expectations**

Effort Per Faculty Member Through Time



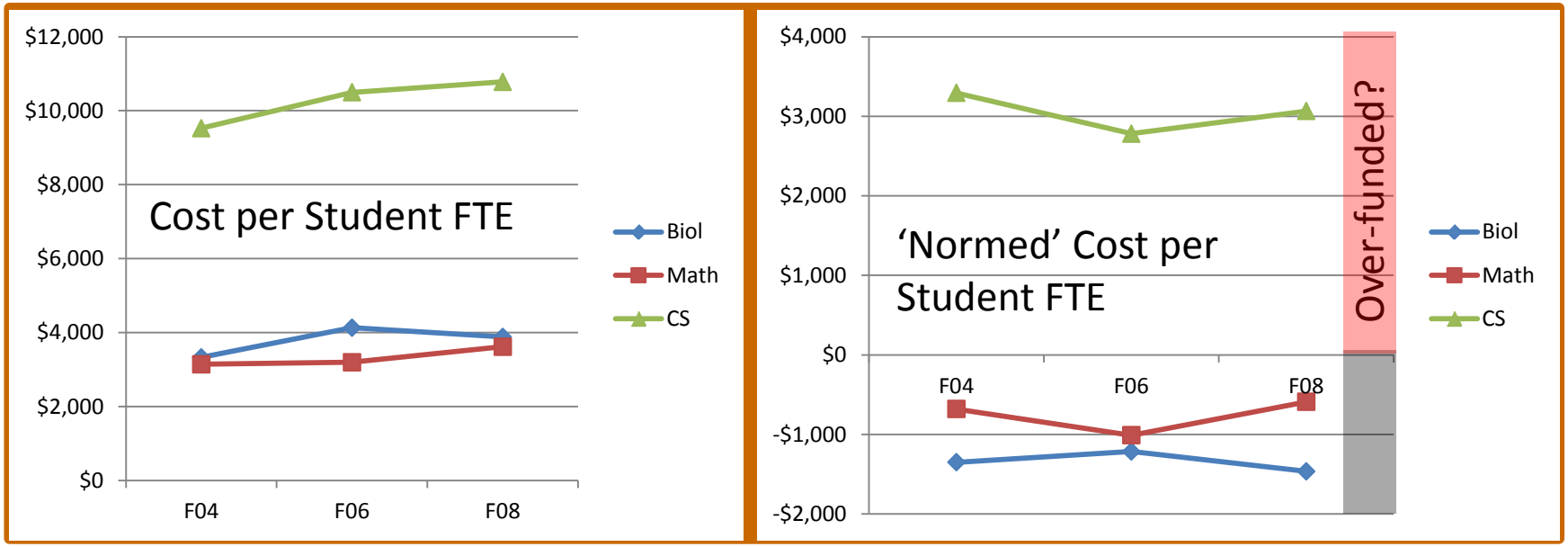
- **Impacts of faculty allocation across Departments**
- **Relative load compared to changing norms**
- **If CS is not a program targeted for distinction, re-balancing of resources may need to be discussed?**

Instructional Cost Per Student FTE

CIP	Discipline	Direct Cost per Student FTE	Normed Direct Cost per Student FTE	More (+) or Less (-) than the Norms	Total Student FTE Taught	Total Over (+) or Under (-) Funding per Norms
26.01	Biology, General	$3,882	$5,346	**-$1,464**	863	**-$1,263,432**
27.01	Mathematics	$3,617	$4,208	**-$591**	1333	**-$787,803**
11.01	Computer Sciences, General	$10,780	$7,714	**$3,066**	93	**$285,138**

- **Promotes discussion around general educational instructional costs and needs**
- **Are distinctive programs being supported?**
- **Is additional investment paying off?**
- **Is 'under-investment' causing difficulties (RPG)?**

Instructional Cost Per Student FTE & Time



- **Compare funding to instructional goals and unit outputs.**
- **Should this much investment be placed into CS?**

Delaware Data Conclusions

- Useful for tracking changes through time compared to norms, and to identify potential weaknesses
- Helps determine if 'distinctive' programs are being supported sufficiently
- Can be useful in arguing for new resources or against unilateral percentage-based budget cuts
- http://www.udel.edu/IR/cost/ to sign up…

DFW data

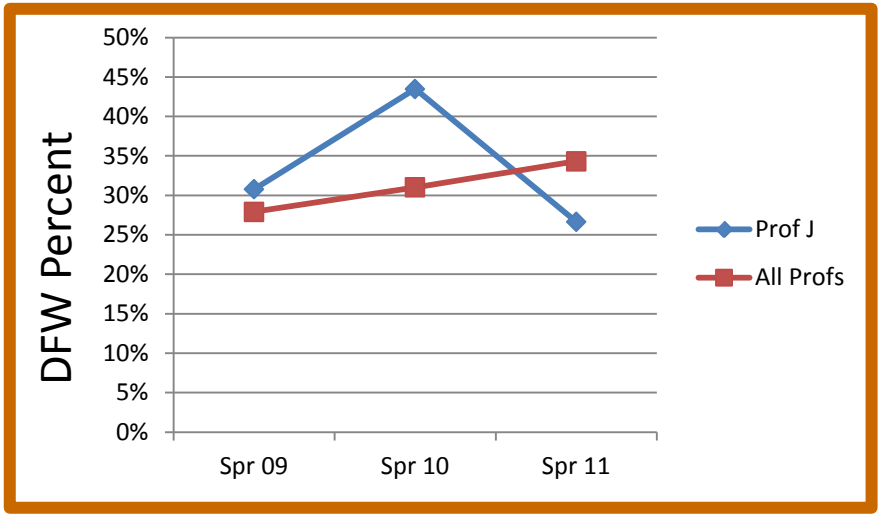
- Rising concern about student Retention, Progression & Graduation (RPG) rates
- As grades of D, F or W (Withdraw) in courses increase, RPG decreases
- DFW's are scalable to identify problems
  - Course
  - Professor
  - Program
  - Department
  - or College
- DFWs are ONLY correlations, and do not define causations!

DFW by Professor

Calculus III Professor J	
Grade	Spr 11
A	4
B	11
C	7
D	4
F	0
W	4
Total	30
DFW%	26.7%
AVG GPA	2.58
# Sections	1
Avg. Class Size	30

Calculus III Professor J			
Grade	Spr 09	Spr 10	Spr 11
A	6	6	4
B	5	2	11
C	7	5	7
D	2	1	4
F	2	1	0
W	4	8	4
Total	26	23	30
DFW%	30.8%	43.5%	26.7%
AVG GPA	2.50	2.73	2.58
# Sections	1	1	1
Avg. Class Size	26	23	30

Calculus III (All Sections) All Professors			
Grade	Spr 09	Spr 10	Spr 11
A	47	110	75
B	34	102	93
C	30	95	96
D	9	35	42
F	10	24	35
W	24	79	61
Total	154	442	402
DFW%	27.9%	31.0%	34.3%
AVG GPA	2.76	2.65	2.38
# Sections	12	15	16
Avg. Class Size	13	29	25



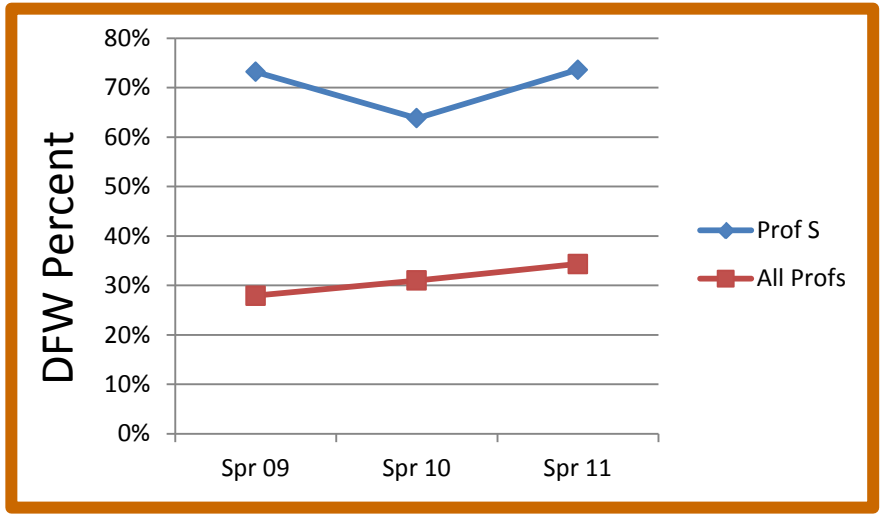
DFWs should be interpreted only at the Department level to ensure context is correct (e.g. 8AM classes, trailing semester courses)

DFW by Professor

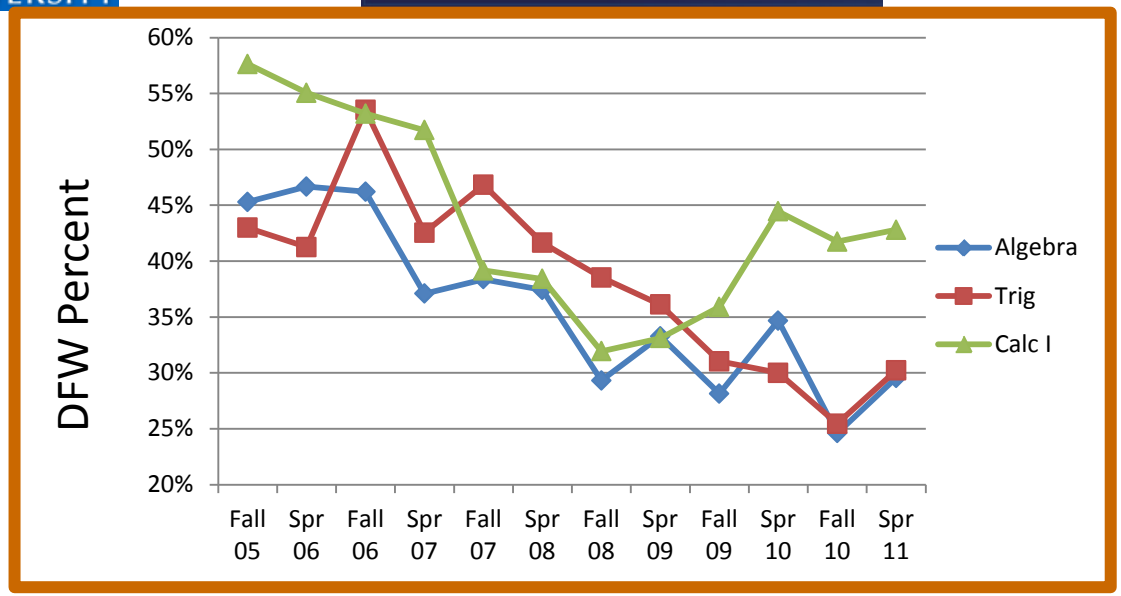
Calculus III Professor S			
Grade	Spr 09	Spr 10	Spr 11
A	4	5	3
B	3	8	7
C	4	12	4
D	2	8	7
F	15	10	14
W	13	26	18
Total	41	69	53
DFW%	73.2%	63.8%	73.6%
AVG GPA	1.25	1.77	1.37
# Sections	2	2	2
Avg. Class Size	21	35	27

Calculus III (All Sections) All Professors			
Grade	Spr 09	Spr 10	Spr 11
A	47	110	75
B	34	102	93
C	30	95	96
D	9	35	42
F	10	24	35
W	24	79	61
Total	154	442	402
DFW%	27.9%	31.0%	34.3%
AVG GPA	2.76	2.65	2.38
# Sections	12	15	16
Avg. Class Size	13	29	25

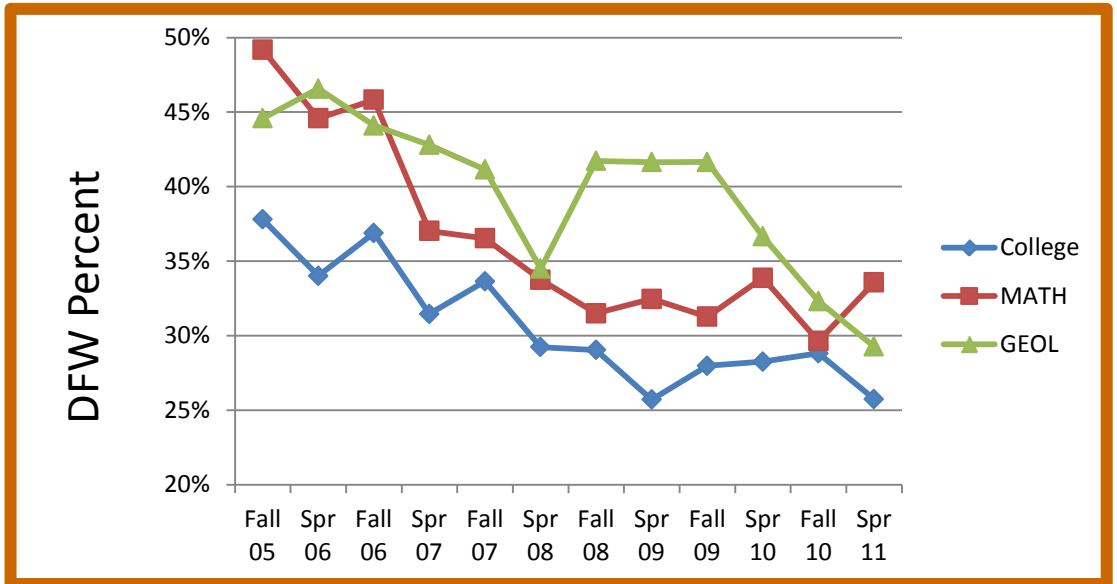
Professor S is an outlier. Is it the sections they are assigned or the professor? What is this Professor doing differently?



DFW by Course/Department/ College



Core Courses in Math



Departments and College

MIDDLE TENNESSEE STATE UNIVERSITY

GEORGIA SOUTHERN UNIVERSITY

NIU
Northern Illinois University
Learning Today, Leading Tomorrow

Conclusions

- **Knowledge of DFW rates are a valuable way to introduce discussions about improvement of teaching and student engagement in the classroom**

- **Teaching load and cost (Delaware) data are valuable for tracking departmental progress, and understanding why initiatives are/are not being met**

- **Review handout summarizing data from Georgia Southern- ask for clarification anytime at CCAS!**

Predicting Course Enrollments

Chris McCord, Dean
College of Liberal Arts and Sciences (CLAS)
Northern Illinois University (NIU)

NIU CLAS: Overview

- **21 degree-granting units: ANTH, BIOS, CHEM, COMM, CSCI, ECON, ENGL, ENVS, FLAL, GEOG, GEOL, HIST, MATH, NGOLD, PHIL, PHYS, POLS, PSPA, PSYC, SOCI, STAT**
- **6,300 majors; 1,100 grad. students; 350+ faculty**
- **$48 M Budget + $14 M in extramural funding/yr**
- **11 PhD programs: BIOS, CHEM, ECON, ENGL, GEOG, GEOL, HIST, MATH, PHYS, POLS, PSYC**
- **Programs of Distinction: PHIL, PHYS, PSPA, PSYC, SEAS**

Forecasting Goals

Goal

- **Provide timely estimates on the number of seats required for each course**

Benefits

- **Room scheduling**
- **Staffing, including**
  - **Setting and modifying faculty assignments**
  - **Short-term hiring needs for instructors, graduate assistants and adjuncts**
  - **Long-term hiring needs such as professorial faculty**

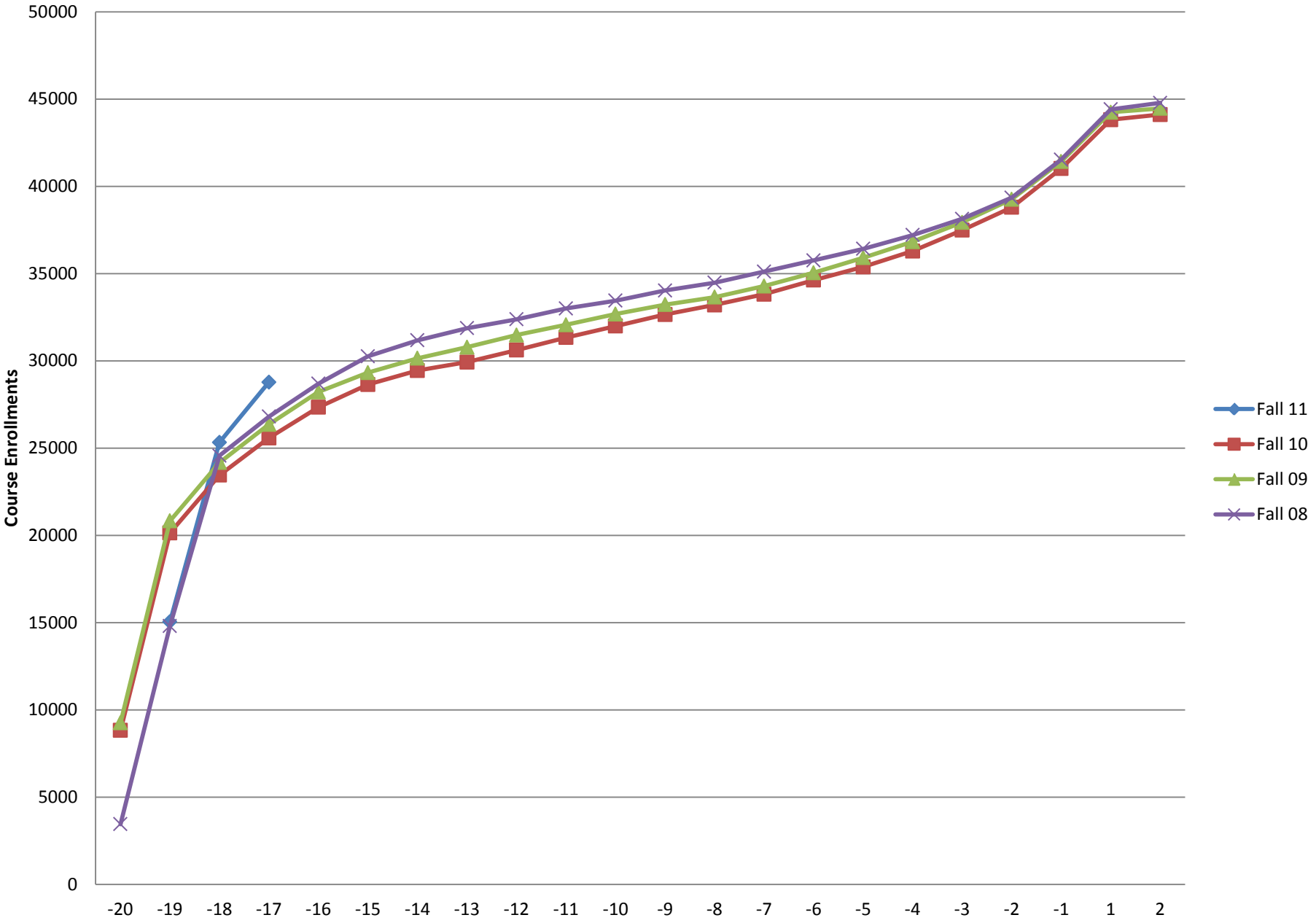
Challenges

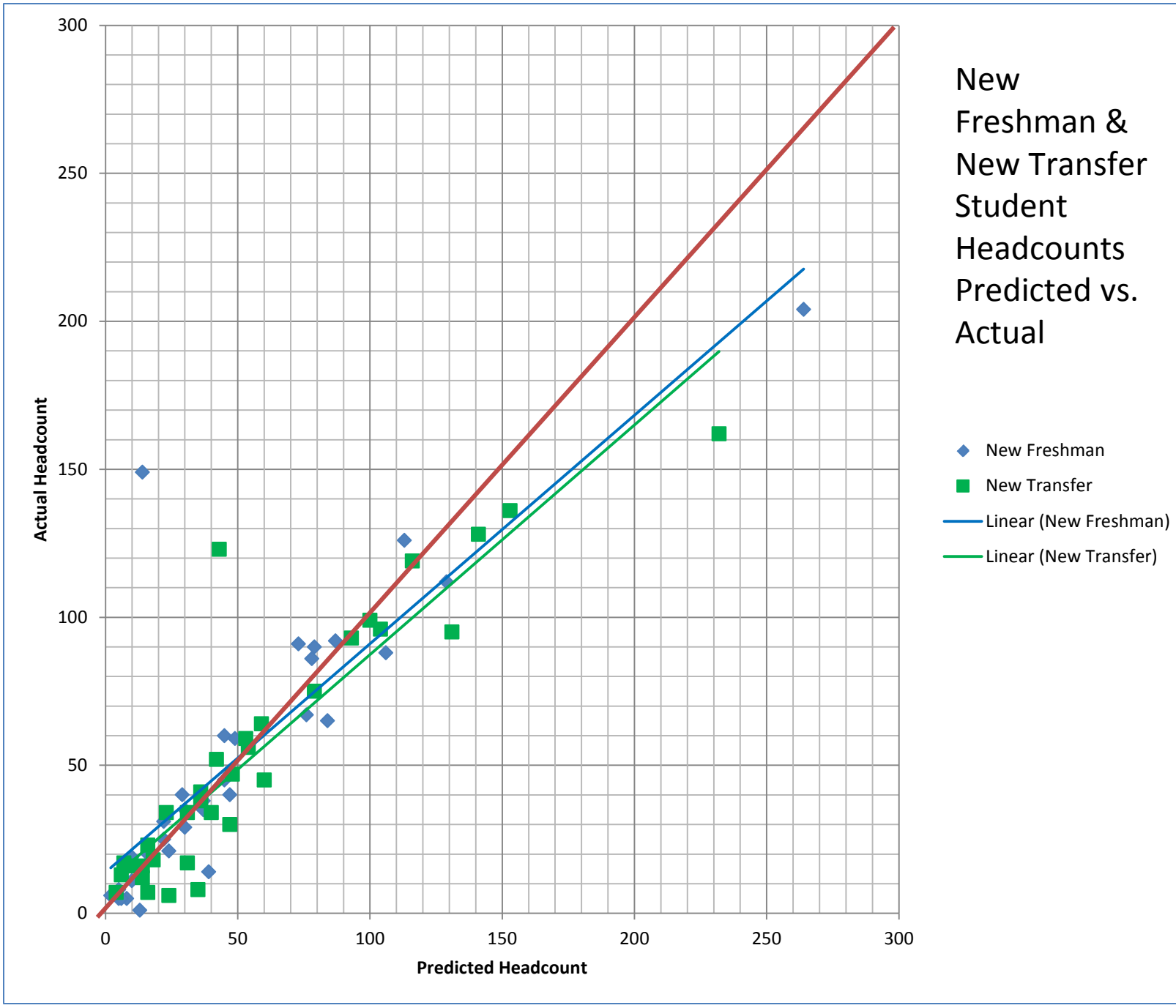
- **NIU's enrollment management system focuses on headcount, not course enrollments**
- **Forecasts require inputs, and it's difficult to acquire inputs that are both early enough to be actionable and solid enough to produce good estimates**
- **Classroom scheduling, instructors' union contracts and other hard calendar constraints aren't aligned with forecasting**
- **It's hard**

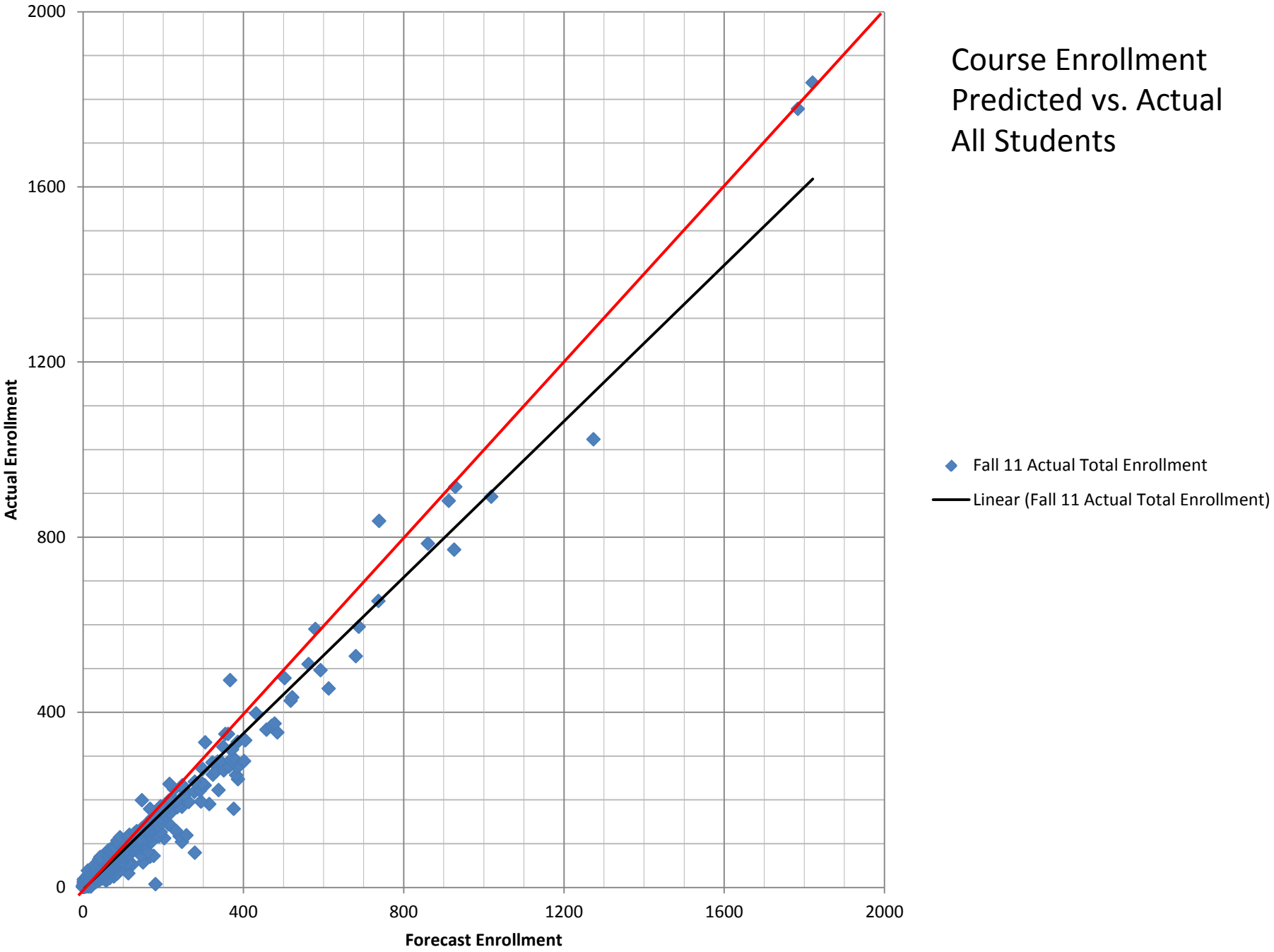
“Easy” Forecasting Process

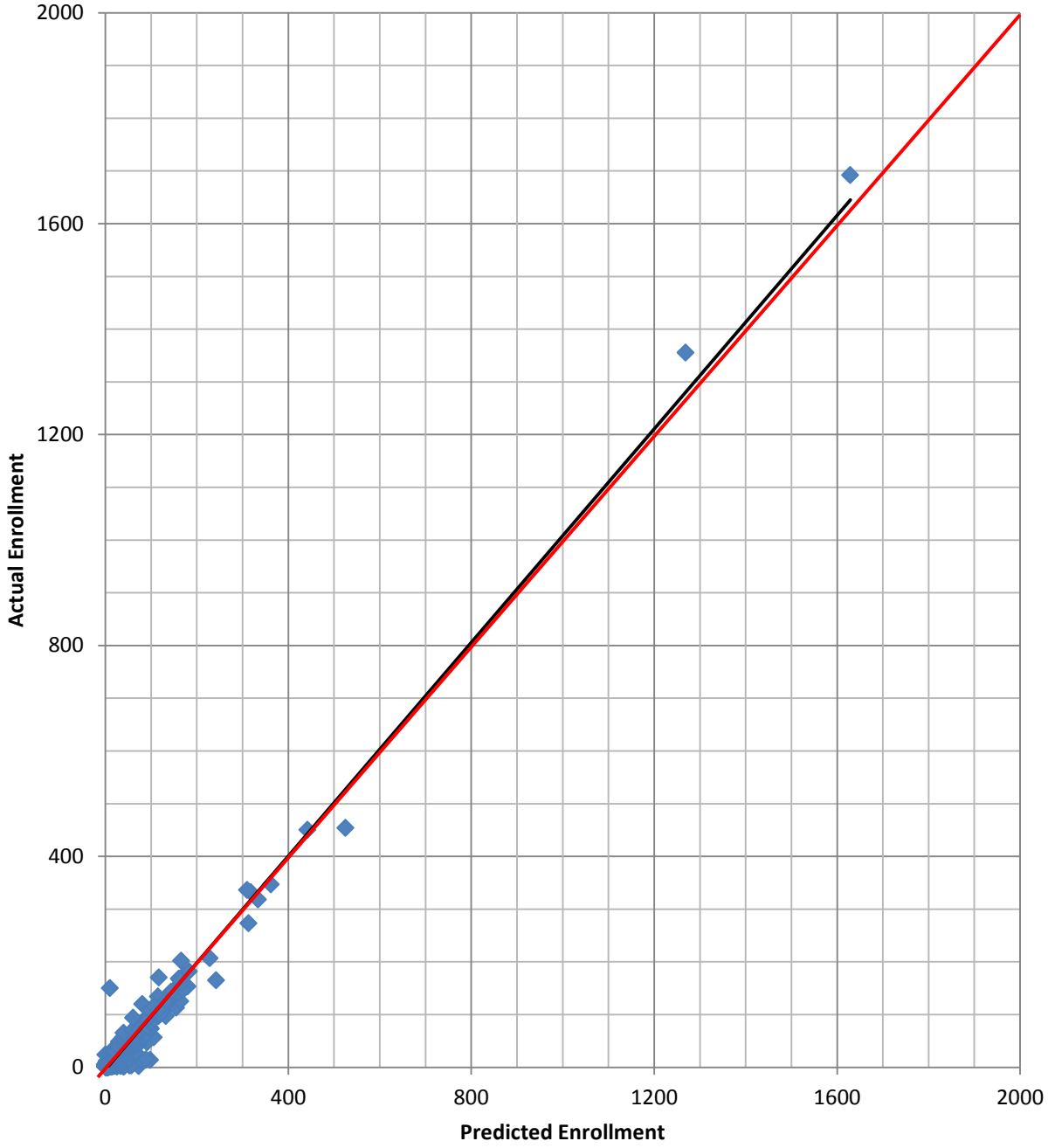
- We have several year’s worth of “fill rate” trend data showing how fast different student cadres enroll, from the start of registration until the 10-day census.
- From this data, we can see clear patterns that allow us to correlate day 10 census from (say) week -13 enrollments
- We can then use week -13 enrollments to forecast day 10 census for returning students
- For new students (who enroll over the summer) we use historic data to correlate confirmations (i.e. students admitted who have given a non-binding commitment to attend) with actual enrollments for each cadre, to determine the conversion rate for confirmations to actual enrollments
- We apply those to the current confirmation numbers to identify the profile of incoming students.
- We use historic data to compute course consumption rates for each cadre of new students
- Aggregating all of the estimates provides an overall course consumption estimate

Returning Students Course Enrollments by Week




New Freshman & New Transfer Student Headcounts Predicted vs. Actual
Actual Headcount
Predicted Headcount
0
50
100
150
200
250
300
New Freshman
New Transfer
Linear (New Freshman)
Linear (New Transfer)

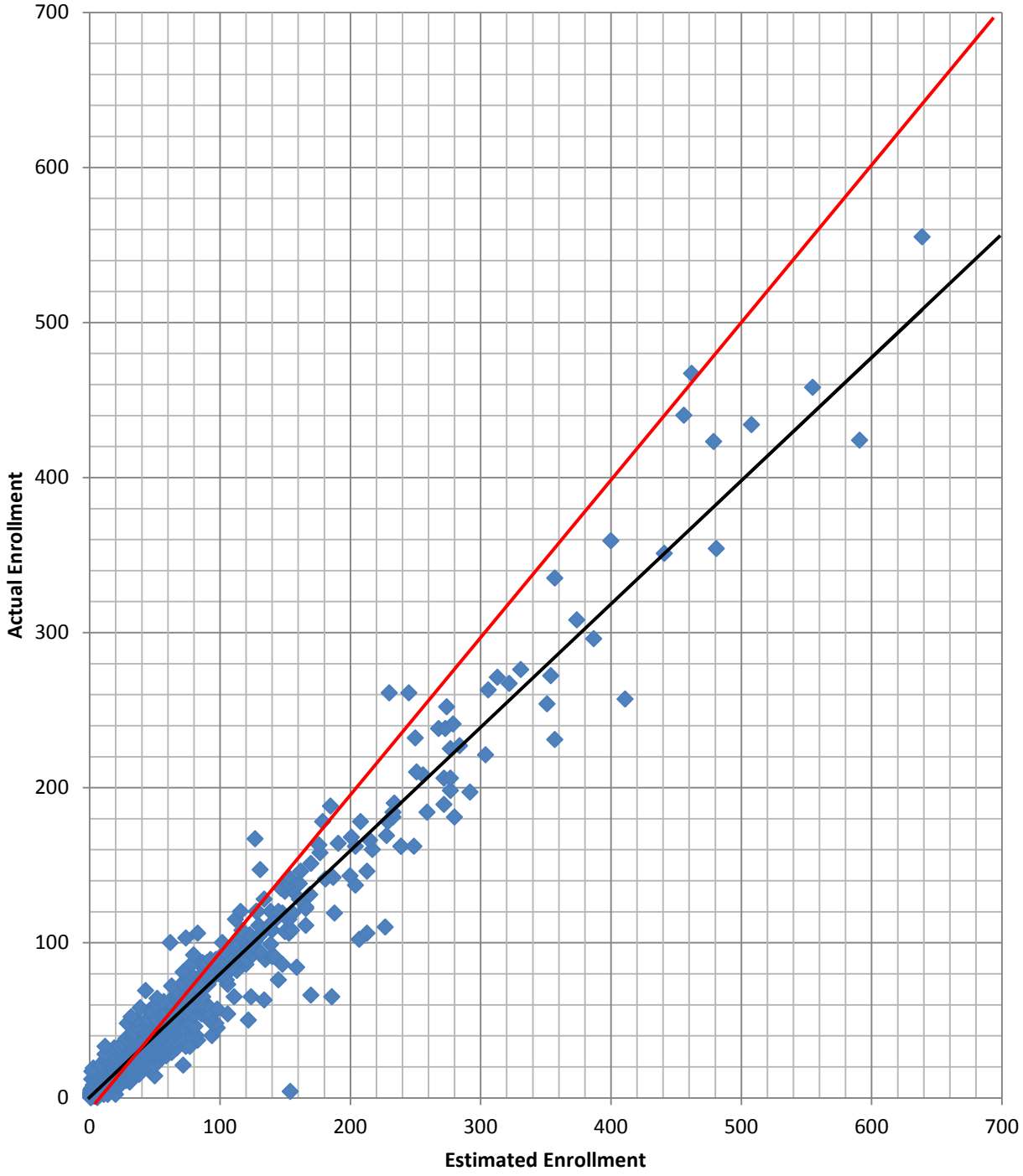

Course Enrollment
Predicted vs. Actual
All Students
Actual Enrollment
Forecast Enrollment
0
400
800
1200
1600
2000
Fall 11 Actual Total Enrollment
Linear (Fall 11 Actual Total Enrollment)



Course Enrollment Predicted vs. Actual New Students (New Freshman & New Transfer Combined)

New Students Fall 2011 Actual Enrollment

Linear (New Students Fall 2011 Actual Enrollment)


Course Enrollment
Predicted vs. Actual
Returning Students
Actual Enrollment
Estimated Enrollment
0
100
200
300
400
500
600
700
Returning Student Fall 11 Actual Enrollment
Linear (Returning Student Fall 11 Actual Enrollment)

Conclusions

- **Forecasts can be done, and can produce actionable conclusions**
- **Comparison of prediction to actual allows successive refinement of the methods**
- **For forecasts to be useful, they have to be early enough to get in front of the institution's key enrollment deadlines, but need to be late enough to be based on solid information**
- **The ability to make useful forecasts depends on institutional data systems**
- **The ability to make forecasts useful depends on institutional culture**