



WINONA
STATE UNIVERSITY

Enrollment Projections at Winona State University



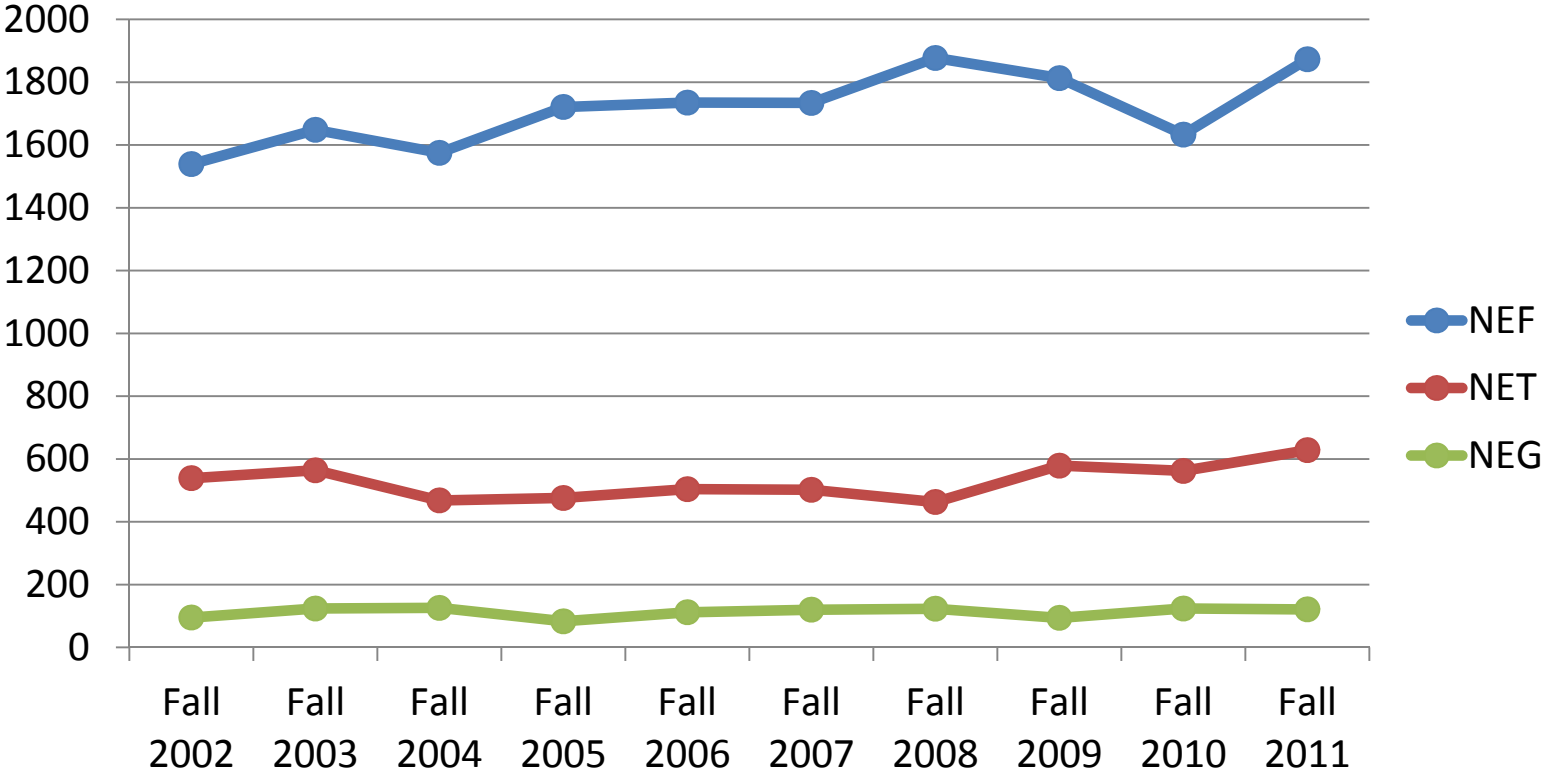
Winona State University

- Regional mid-sized (approx. 8900 headcount enrollment) University with a predominantly traditional, residential undergraduate student body.
- A campus in Rochester comprised mostly of transfer and graduate students.
- Selective admission policies



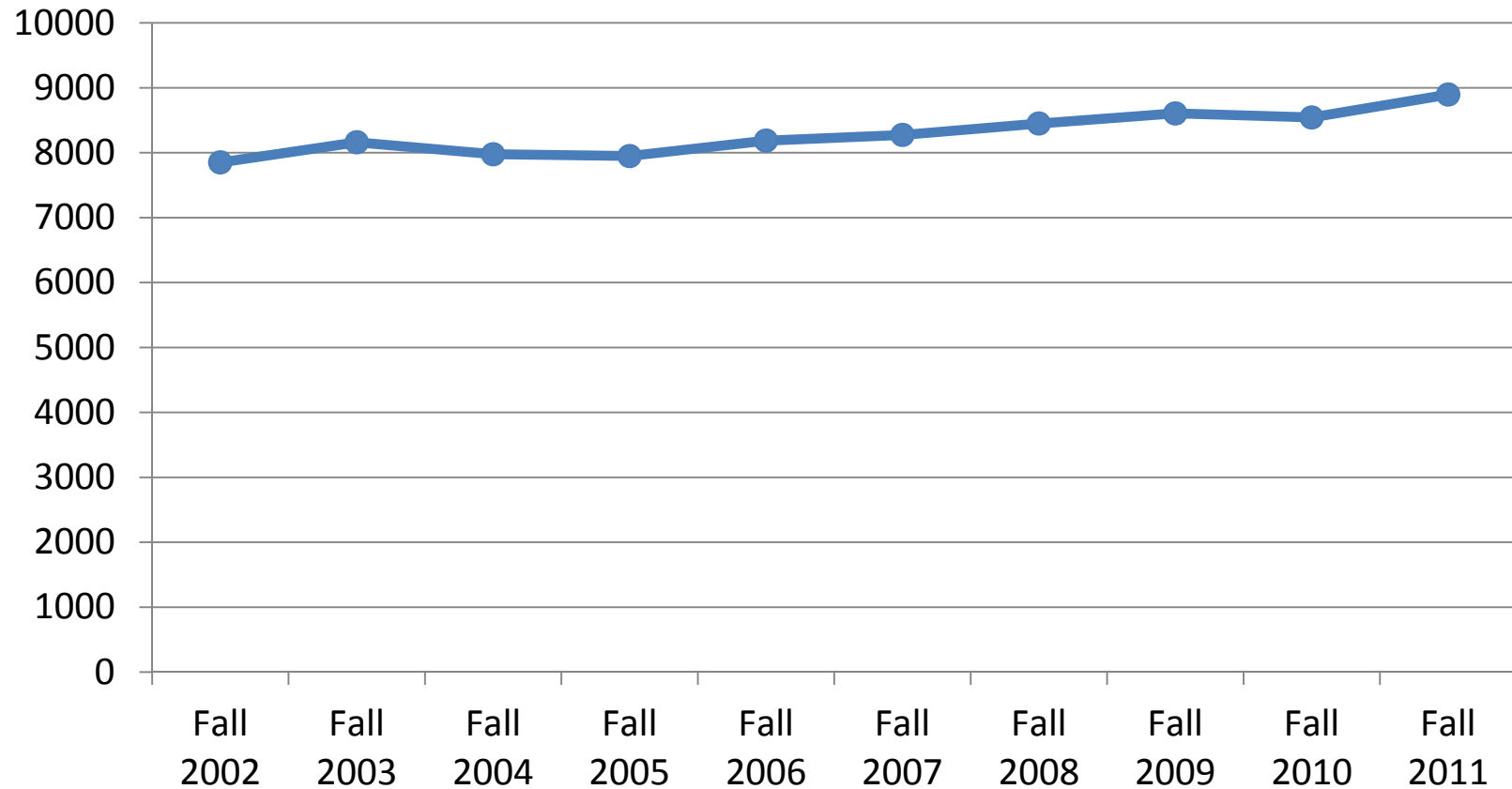


New Entering Student Counts





Headcount





Projection Model Goals

- To understand the effect of new entering student cohort sizes on future total enrollment-levels at the University
- Set Admission Goals
- To provide reasonable total enrollment-level predictions to MnSCU



Enrollment Projection Model

$$\begin{aligned} H_t = & T_t^F + r_F * (1 - a_F) * N_{t-1}^F \\ & + T_t^{So} + r_F * a_F * N_{t-1}^F + r_{So} * (1 - a_{So}) * N_{t-1}^{So} \\ & + T_t^J + r_{So} * a_{So} * N_{t-1}^{So} + r_J * (1 - a_J) * N_{t-1}^J \\ & + T_t^{Sr} + r_J * a_J * N_{t-1}^J + r_{Sr} * N_{t-1}^{Sr} \\ & + T_t^G + r_G * N_{t-1}^G \\ & + T_t^O + r_O * N_{t-1}^O \end{aligned}$$



The Number of Freshmen is:

- The number of new Freshmen entering WSU, plus
- Number of returning Freshmen



The Number of Returning Freshmen is:

The number of Freshmen from the previous term that:

1. Were retained, and
2. Did not advance (become a Sophomore)



The Number of Sophomores is:

1. The number of entering Sophomores, plus
2. The number of Sophomores from the previous term who were retained, and did not advance, plus
3. The number of Freshmen from the previous term who were retained, and advanced



Juniors and Seniors

Treated just like Sophomores, except
Seniors don't "advance"



Graduate Students and “Other”

These groups do not “advance”

1. Number of new, plus
2. Number from previous term that were retained



What we need to estimate

1. Advancement rates (FR-JR)
2. Retention rates (all)
3. New Student Counts



Enrollment Projection Model

H_t Predicted headcount for term t

N_{t-1}^F Actual number of Freshmen for the previous term (similarly for Sophomores, Juniors, etc).

T_t^F Estimated number of new Freshmen entering WSU (similarly for Sophomores, Juniors, etc). This is different from the NEF count. Any student not enrolled in the previous term is considered “new” for the purposes of the enrollment model.

r_F Estimated *Retention Rate* of Freshmen (similarly for Sophomore, Junior, etc). The term “retention” is used atypically here. This variable measures the number of Freshmen enrolled in the current term expected to be enrolled in the following term.

a_F Estimated *Advancement Rate* of retained Freshmen (similarly for Sophomore, Junior, etc.) This variable measures the percent of Freshmen that are retained Sophomores in the following term (for example).



How we estimate

1. Weighted average of observed values from previous 3 years, weighting more recent years more heavily
2. We estimate separately for Spring-Fall and Fall-Spring (Summer term is handled separately)

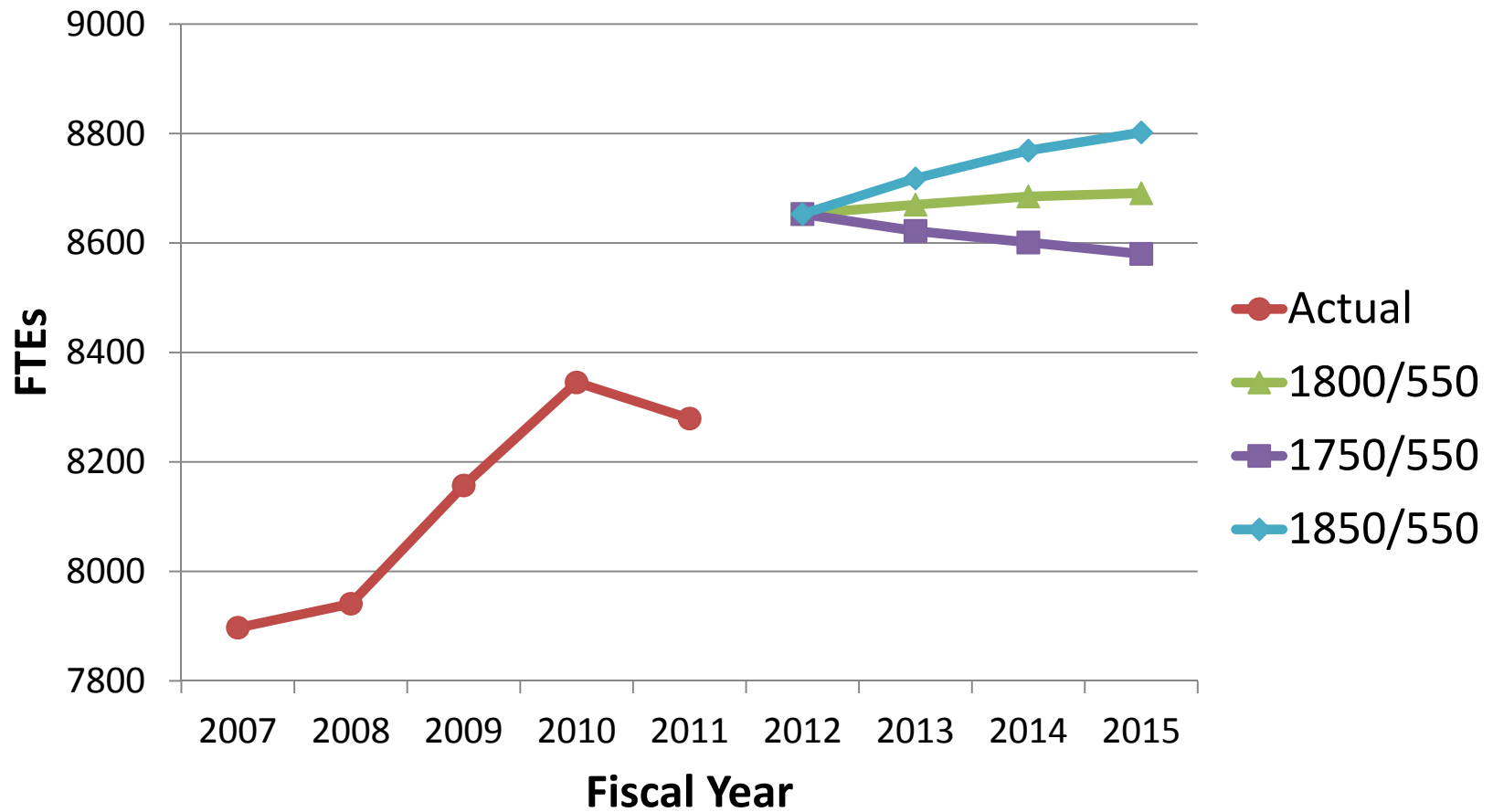


Model Inputs

1. Fall Tenth Day New Entering Freshmen Count
 2. Fall Tenth Day New Entering Transfer Count
- We estimate Spring counts from data
 - Issues translating NEF/NET counts to T_t

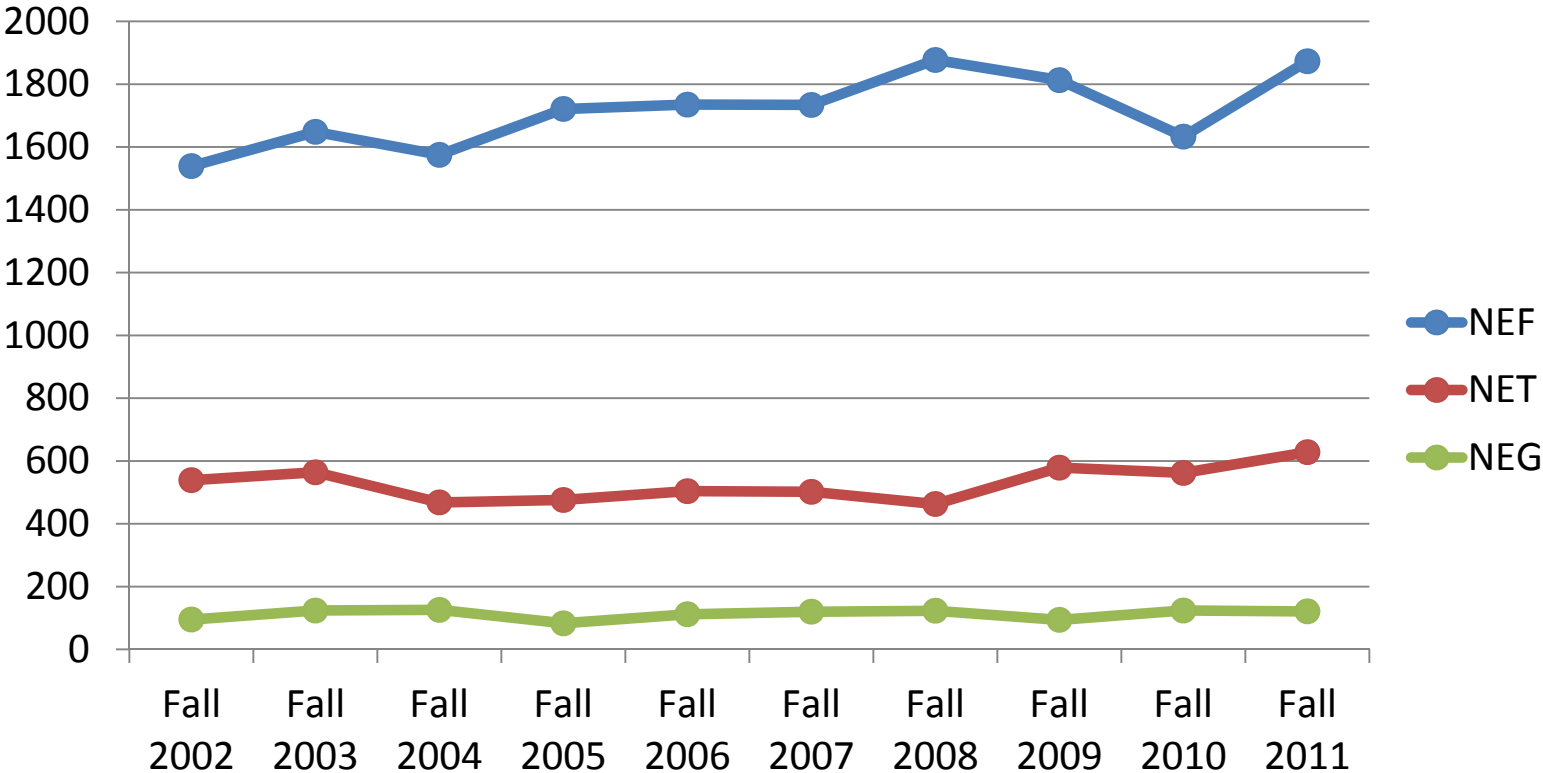


FTE Projections





New Entering Student Counts





Issues we ignore

1. Advancement rates conflate graduation and retention
2. Seniors treated as one group (could do 4 yr, 5 yr, 6 yr)
3. Ignore campus
4. Ignore student demographics
5. Ignore majors, colleges



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Model Validation

| Prediction Made in | Prediction of | Actual FTEs | Predicted FTEs | Error Rate |
|--------------------|---------------|-------------|----------------|------------|
| Fall 2009 | FY 2011 | 8279 | 8311 | 0.4% |
| Fall 2008 | FY 2010 | 8345 | 8276 | -0.8% |
| Fall 2007 | FY 2009 | 8157 | 8139 | -0.2% |
| Fall 2006 | FY 2008 | 7941 | 7880 | -0.8% |
| Fall 2005 | FY 2007 | 7897 | 7746 | -1.9% |



Weighted Averages

| Year 1 | Year 2 | Year 3 | Weighted Average |
|--------|--------|--------|------------------|
| 1 | 2 | 3 | 2.33 |
| 3 | 2 | 1 | 1.67 |
| 1 | 3 | 2 | 2.17 |



Why We Don't Model New Entering Counts

We feel New Entering Freshmen and Transfer counts are largely controlled by the actions of the University (which are largely unpredictable), and not by outside trends.



Early Predictors

1. Admissions run rates
2. Housing run rates
3. Registration run rates

Enrollment Analytics

Reports specific to Enrollment Analytics, including Housing/Admissions/Registration run rates and enrollment projections.

Reports:

Registration Run Rates

Registration run rates of the current registration period compared to past years. Number of students registered, seats and credits registered for during the current registration period compared to past registration periods.

Admissions Reports:

Admissions Run Rate Graphs

Graphs of application/admit trends over time, comparing the current year to previous years.

Admissions Run Rates

First and Fifteenth day of the month reports showing number of applications, admits, enrolled students, denials and cancels.

Finance Reports:

Enrollment Projection Model

Predicted enrollment counts and FTEs for the current and future fiscal years generated by Institutional Research's Enrollment Projection Model.

Housing Reports:

Housing Application Run Rates

Run rates of cumulative number of housing applications received for current fiscal year, and past fiscal years for comparison. Number of applications, non-cancelled applications, non-cancelled and paid applications and cancelled applications are available. Only students with an application to WSU for the selected term are included, which should mostly limit the applications to new students.



Term: Date: [View Report](#)
 Application Type: Campus:
 1 of 1 100% Find | Next

Admissions Run Rates as of 10/21

| | Spring 2008 | | Spring 2009 | | Spring 2010 | | Spring 2011 | | Spring 2012 | |
|-----------|-------------|------|-------------|------|-------------|------|-------------|------|-------------|------|
| # of Apps | 46 | -39% | 108 | 135% | 92 | -15% | 42 | -54% | 75 | 79% |
| Admitted | 11 | -73% | 47 | 327% | 48 | 2% | 8 | -83% | 13 | 63% |
| Denied | 3 | -40% | 9 | 200% | 3 | -67% | 1 | -67% | 7 | 600% |
| Pending | 25 | -19% | 52 | 108% | 40 | -23% | 33 | -18% | 55 | 67% |

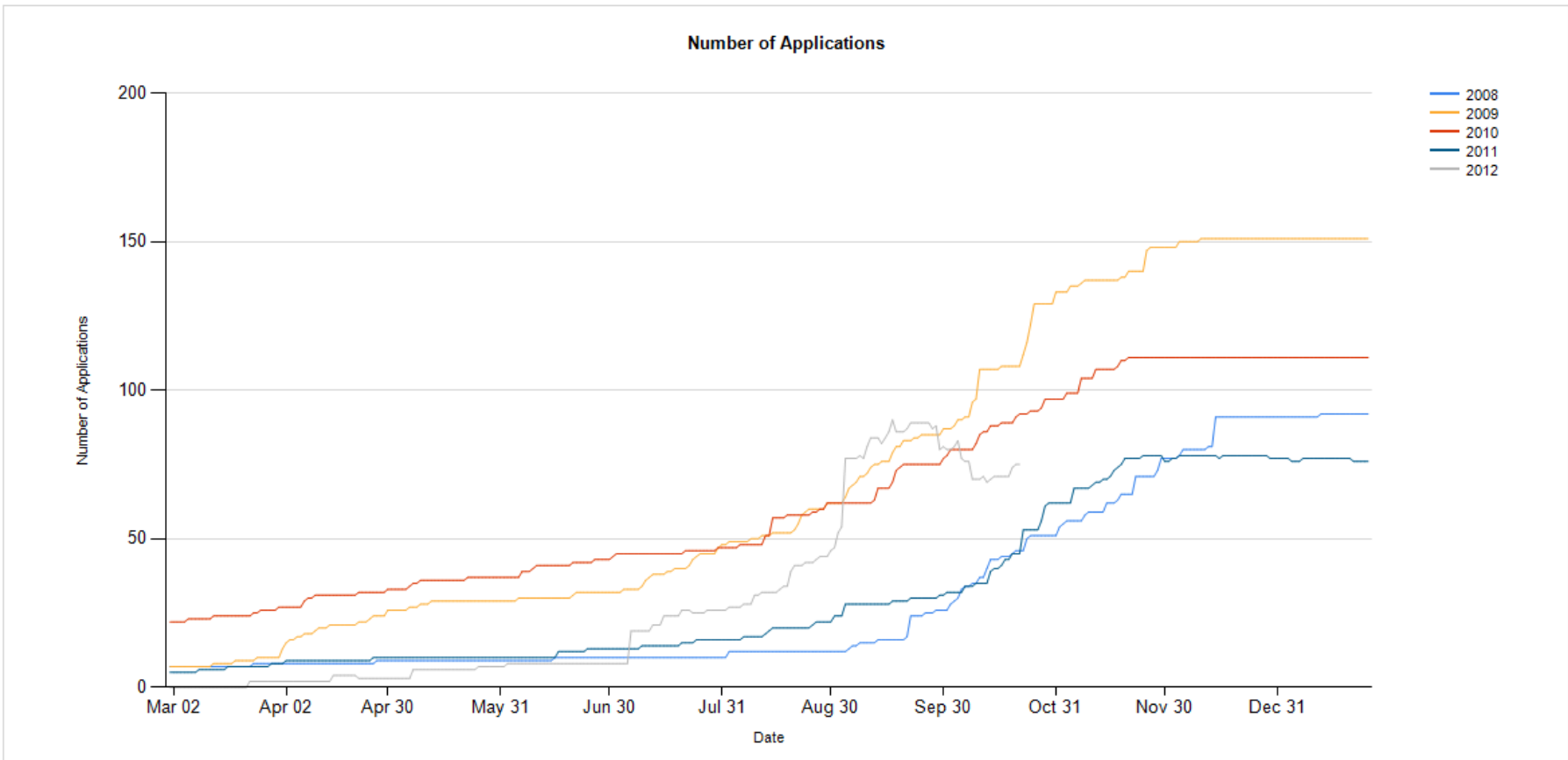


Term Application Type

Metric

[View Report](#)

Admissions Run Rates





Measure: Student Type: [View Report](#)

International:

1 of 2 ? 100% Find | Next

Housing Application Run Rates Non-Cancelled and Paid Applications

| | Fall 2006 | Fall 2007 | Fall 2008 | Fall 2009 | Fall 2010 | Fall 2011 | Fall 2012 |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Oct 1-7 | | 1 | | 1 | | 30 | 41 |
| Oct 8-14 | | 1 | | 2 | | 97 | 93 |
| Oct 15-21 | | 127 | | 29 | | 131 | 143 |
| Oct 22-28 | 78 | 232 | 139 | 158 | | 188 | 143 |
| Oct 29-31 | 94 | 269 | 210 | 175 | | 209 | |
| Nov 1-7 | 221 | 312 | 323 | 230 | 34 | 268 | |
| Nov 8-14 | 321 | 367 | 401 | 296 | 176 | 325 | |
| Nov 15-21 | 443 | 472 | 474 | 367 | 303 | 365 | |
| Nov 22-28 | 482 | 484 | 537 | 425 | 393 | 411 | |
| Nov 29-30 | 540 | 578 | 568 | 473 | 455 | 432 | |
| Dec 1-7 | 600 | 674 | 653 | 557 | 566 | 501 | |
| Dec 8-14 | 665 | 791 | 742 | 632 | 634 | 545 | |
| Dec 15-21 | 731 | 857 | 800 | 678 | 709 | 619 | |
| Dec 22-28 | 780 | 858 | 863 | 716 | 754 | 681 | |



Term Level
 Campus

1 of 2 ? 100% Find | Next

Registration Run Rates

Seats registered for:

| | 10/26 | 12/1 | 1/1 | 2/1 |
|-------------|-------|--------|--------|--------|
| Spring 2012 | 18 | | | |
| Spring 2011 | 2 | 31,344 | 33,259 | 35,652 |
| Spring 2010 | | 31,740 | 33,693 | 36,115 |
| Spring 2009 | | 31,415 | 33,407 | 35,725 |
| Spring 2008 | | 29,076 | 32,432 | 34,671 |
| Spring 2007 | | 14,314 | 33,075 | 34,793 |
| Spring 2006 | 2 | 23,069 | 32,060 | 33,657 |
| Spring 2005 | | 26,586 | 31,868 | 33,428 |

Registered seats is up 800% from this time last year



More Information

Ed Callahan

ecallahan@winona.edu

<http://www.winona.edu/ipar/reports.asp>