# *Establishing the Base Race Strategy: Female Short Course 100-Yard Events*

Select Competitions from 2010 - 2013

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# Agenda

I. Introduction
II. Analysis of the 100Y Freestyle
III. Analysis of the 100Y Backstroke
IV. Analysis of the 100Y Breastroke
V. Analysis of the 100Y Butterfly
VI. Conclusion – Establishing the Baseline

# Introduction

Section I

# Executive Summary

| | |
|---|---|
| **The Subject** | • An analysis of the top five female finishers in each of the 100-stroke A-Finals from a selection of competitions over the past four years |
| **The Objective** | • To determine the most commonly used race strategy amongst the worlds best swimmers as a baseline for developing more detailed training plans |
| **The Approach** | • Separate and analyze each lap of the 100 for every race over the years to develop an average split delta, in percentage terms, for the second 50 when baselining from the first 50 of the race |
| **The Advantage** | • Using my results, I developed a list of recommended splits for a range of times in order to give elite level swimmers a factual approach to specific goal times<br>• Using percentages as a measurement, rather than absolute times, does not disfavor any swimmers |

# Criteria Used

## Sex:

- Female

## Session

- A-Final

## Distance

- 100 Yards

## Place:

- 1st – 5th

## Stroke

- Freestyle
- Backstroke
- Breastroke
- Butterfly

## Meets

- Division 1 NCAA Championships
  - 10, 11, 12, 13

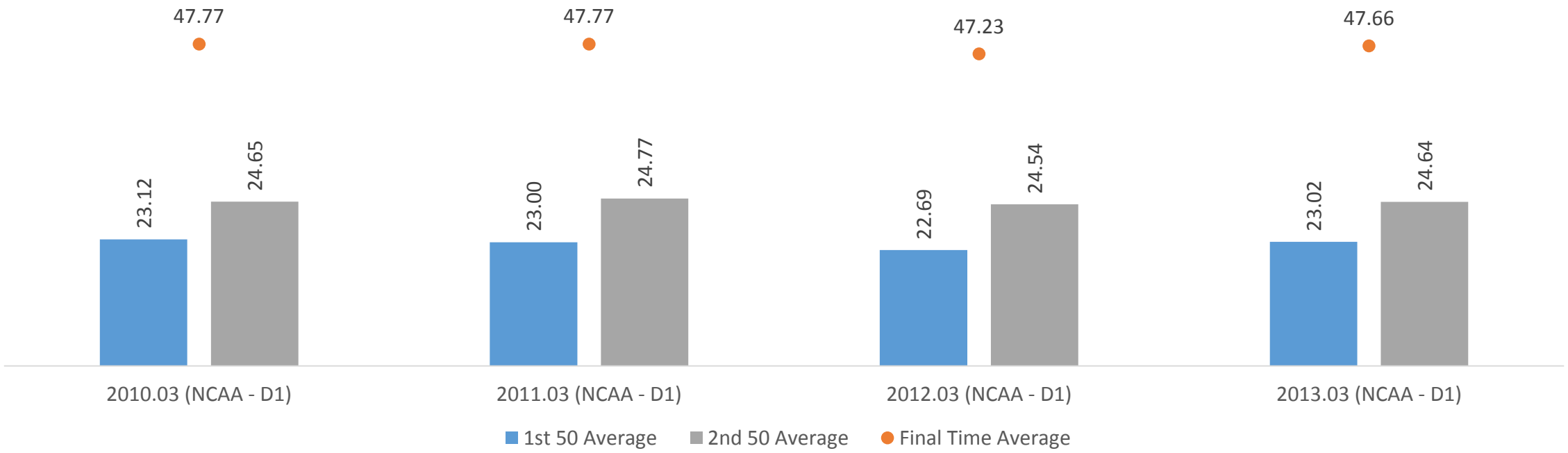
Note: In some scenarios a swimmer placing out of the top five may be included for comparison purposes.
Source: CollegeSwimming, NCAA

# Analysis of the 100Y Freestyle

Section II

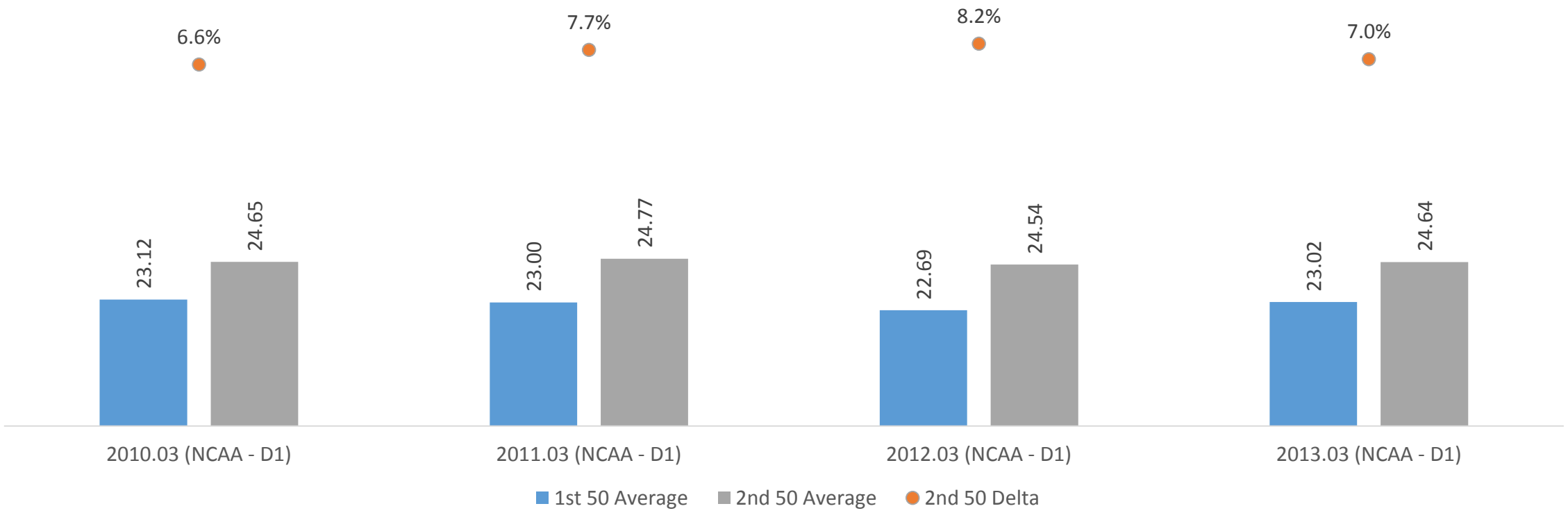
# SCY Female 100 Freestyle: Race Averages

Average Time = 47.61



# SCY Female 100 Freestyle: 1st → 2nd 50

| Average 1st 50 = 22.96 | Average 2nd 50 = 24.65 | Average Split Delta = 7.4% |
|---|---|---|

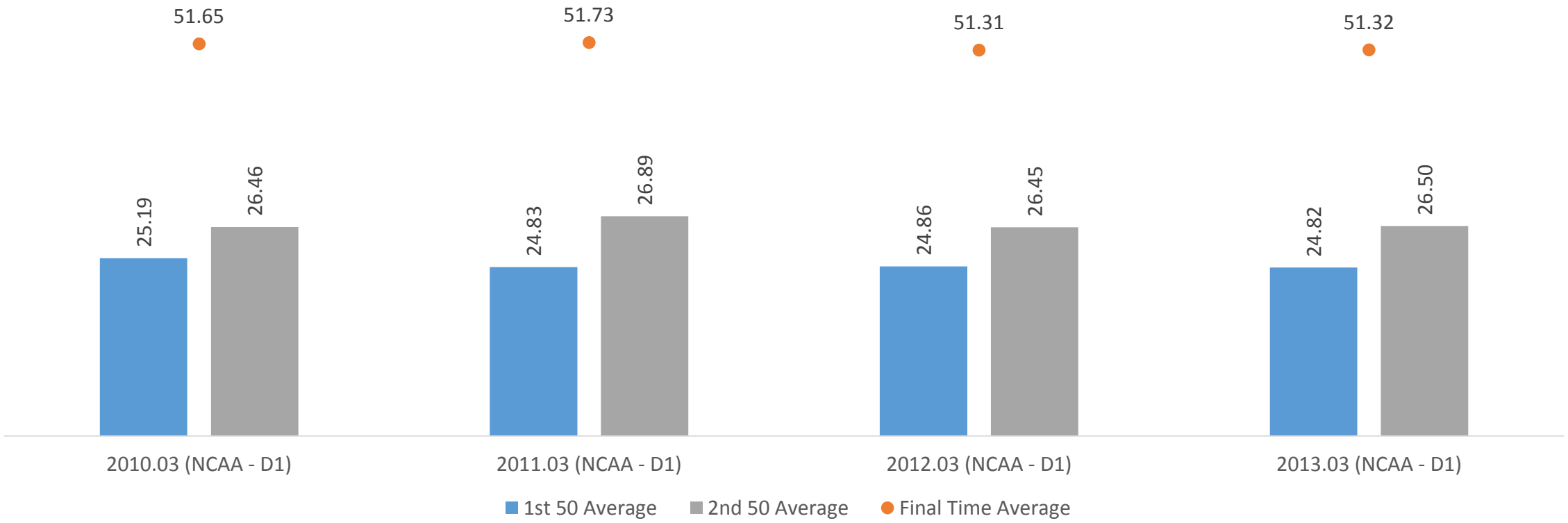


# Analysis of the 100Y Backstroke

Section III

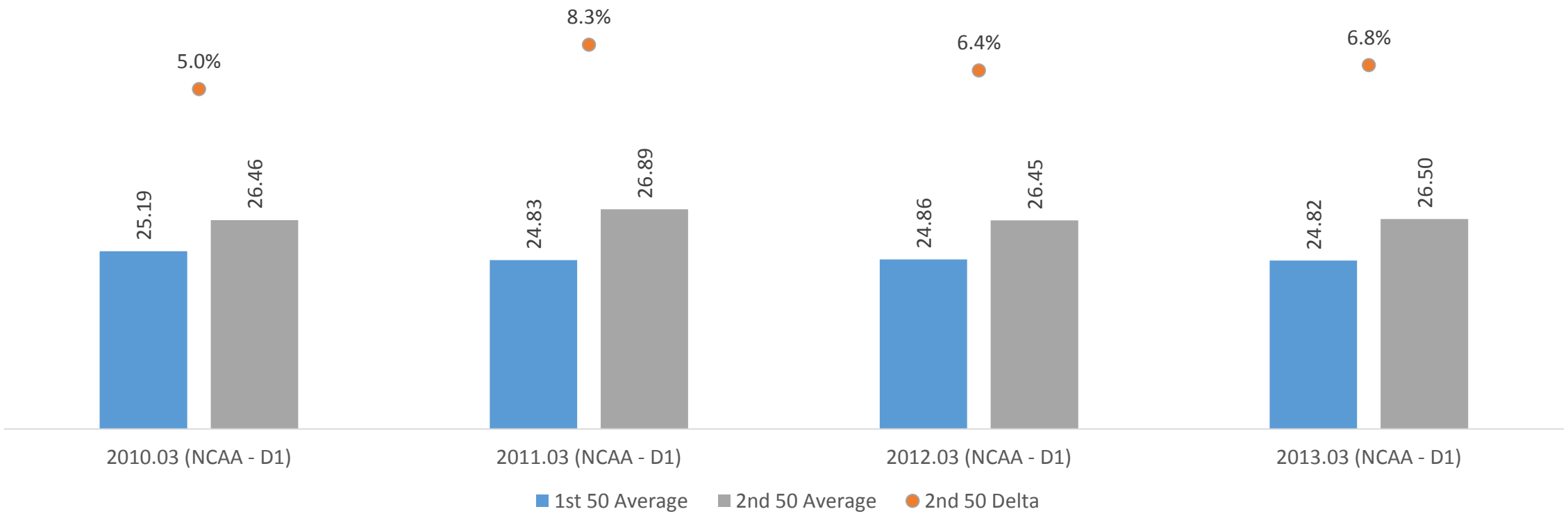
# SCY Female 100 Backstroke: Race Averages

Average Time = 51.51



# SCY Female 100 Backstroke: 1st → 2nd 50

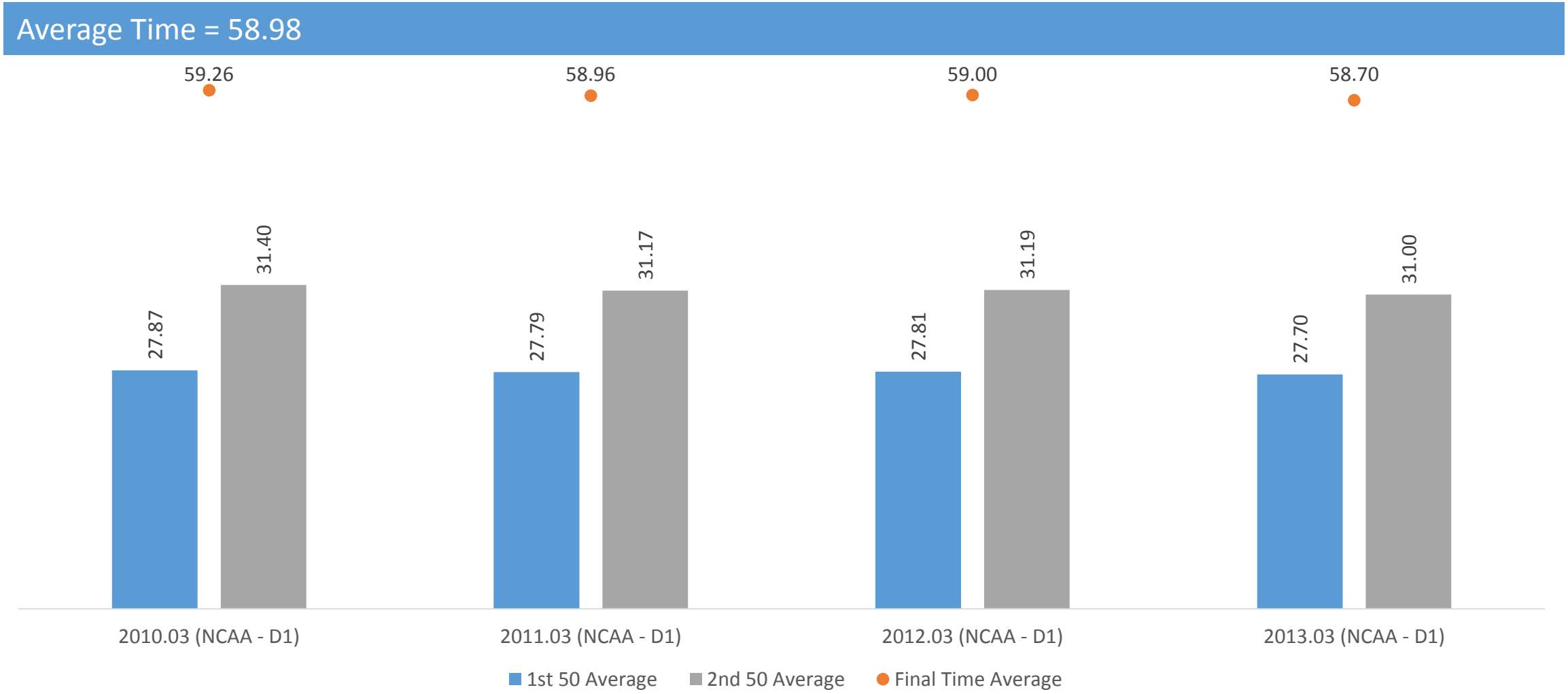
| Average 1st 50 = 24.93 | Average 2nd 50 = 26.58 | Average Split Delta = 6.6% |
|---|---|---|



# Analysis of the 100Y Breastroke

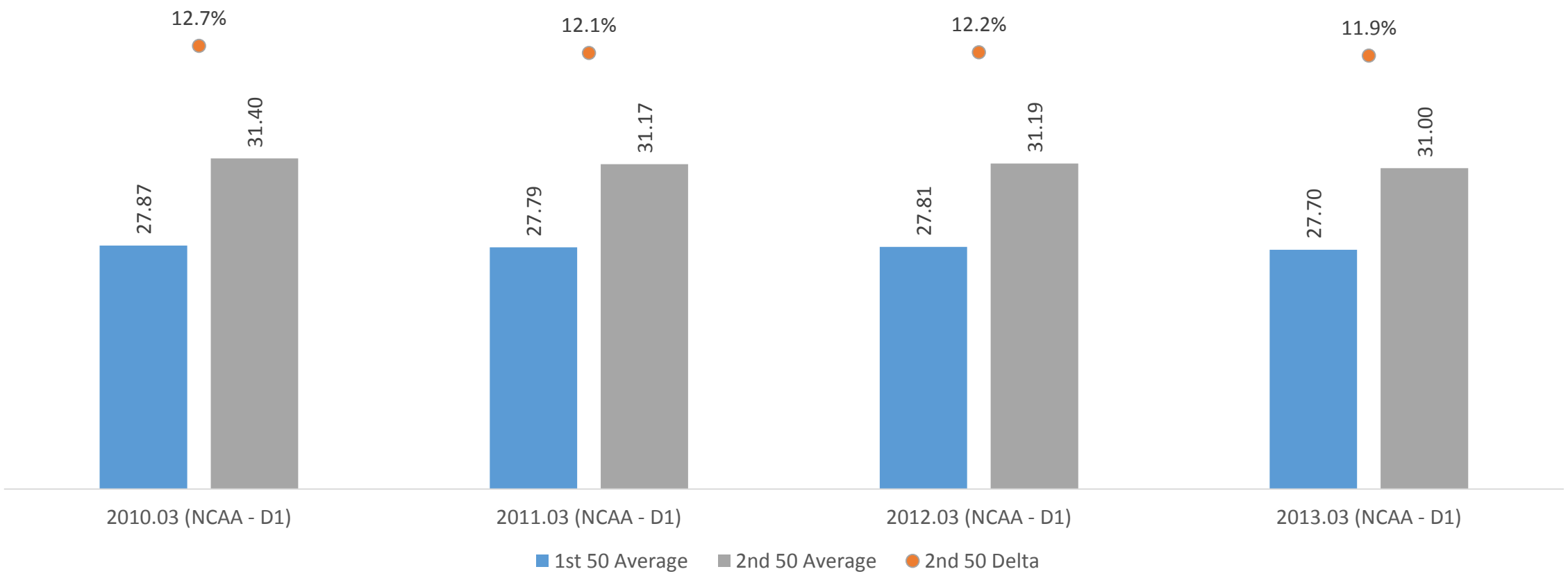
Section IV

# SCY Female 100 Breaststroke: Race Averages



# SCY Female 100 Breaststroke: 1st → 2nd 50

| Average 1st 50 = 27.79 | Average 2nd 50 = 31.19 | Average Split Delta = 12.2% |
|---|---|---|

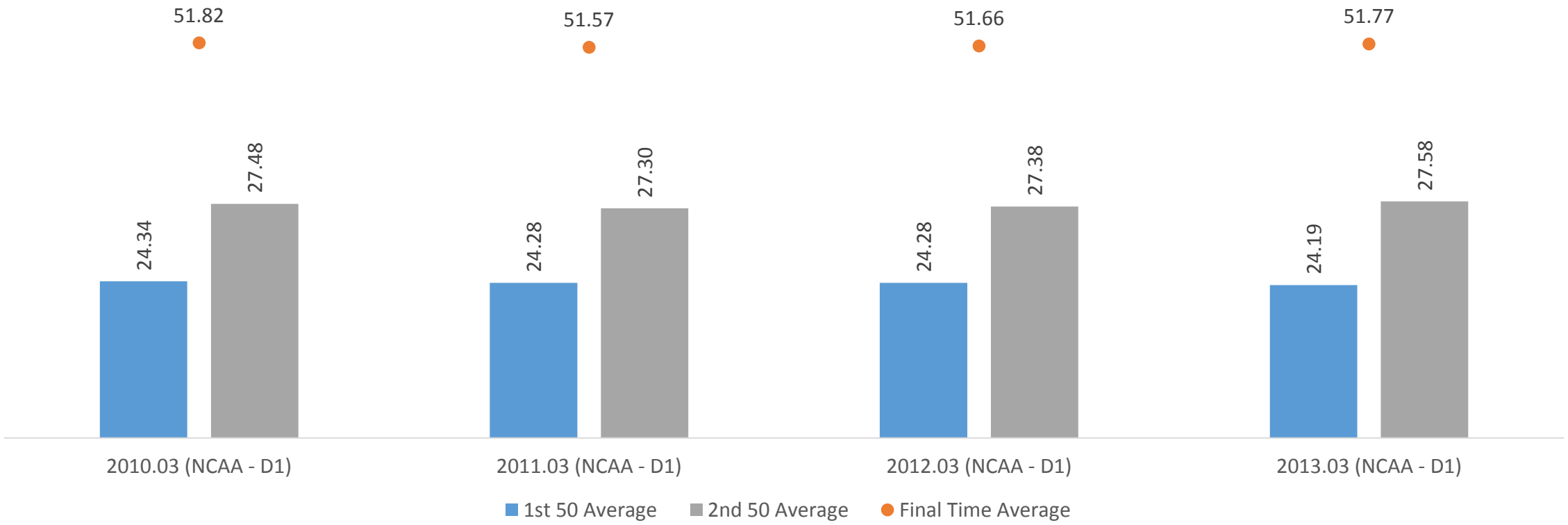


# Analysis of the 100Y Butterfly

Section V

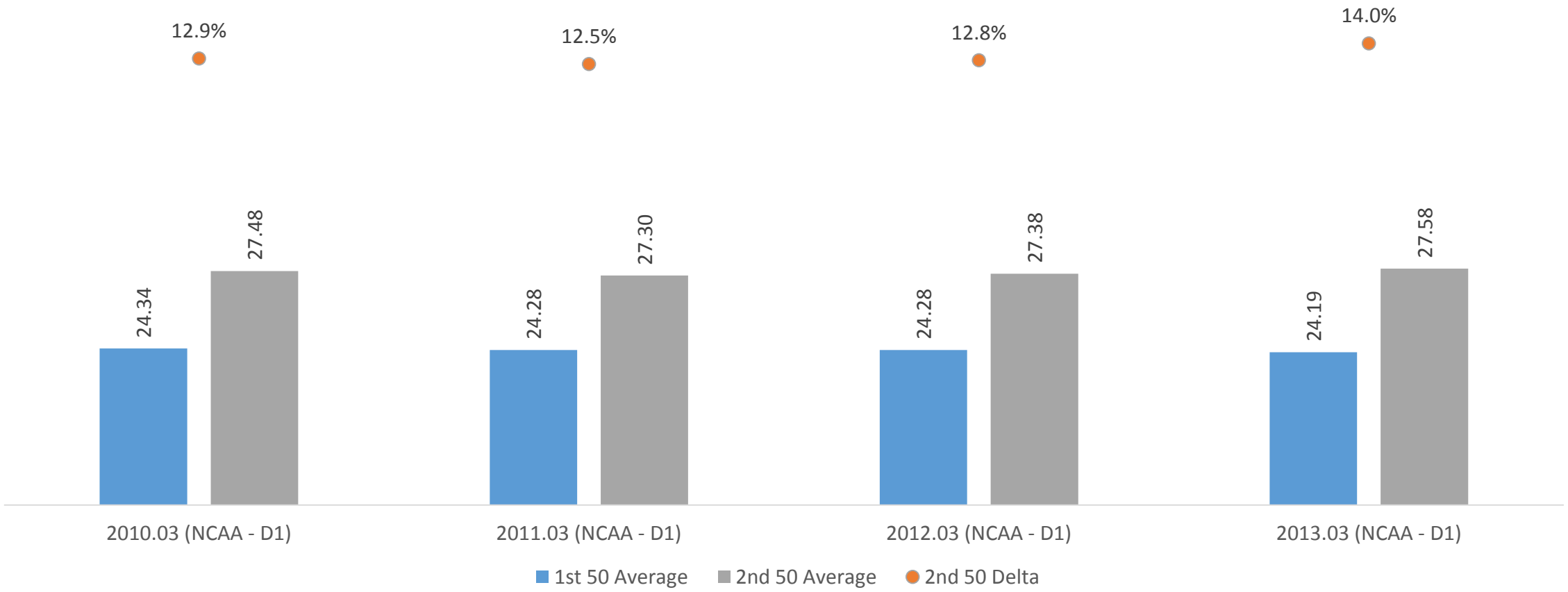
# SCY Female 100 Butterfly: Race Averages

Average Time = 51.70



# SCY Female 100 Butterfly: 1st → 2nd 50

| Average 1st 50 = 24.27 | Average 2nd 50 = 27.43 | Average Split Delta = 13.0% |
|---|---|---|



# Establishing the Baseline

Section VI

# SCY Female 100Y Freestyle: Baseline

- Using the average first 50 (22.96) as a baseline to the average split delta's, results in the following list of race strategies for a selection of times
- Split Delta's
  - 1st → 2nd 50 = 7.4%

| Final Time | Splits by 50 | | Split Delta (seconds) |
|---|---|---|---|
| | 1st | 2nd | |
| *Note: all times are formatted in mm:ss.hh* | | | |
| 43.55 | 21.00 | 22.55 | 1.55 |
| 44.07 | 21.25 | 22.82 | 1.57 |
| 44.59 | 21.50 | 23.09 | 1.59 |
| 45.11 | 21.75 | 23.36 | 1.61 |
| 45.62 | 22.00 | 23.62 | 1.62 |
| 46.14 | 22.25 | 23.89 | 1.64 |
| 46.66 | 22.50 | 24.16 | 1.66 |
| 47.61 | 22.96 | 24.65 | 1.70 |
| 48.74 | 23.50 | 25.24 | 1.74 |
| 49.25 | 23.75 | 25.50 | 1.75 |
| 49.77 | 24.00 | 25.77 | 1.77 |
| 50.29 | 24.25 | 26.04 | 1.79 |
| 50.81 | 24.50 | 26.31 | 1.81 |
| 51.33 | 24.75 | 26.58 | 1.83 |
| 51.85 | 25.00 | 26.85 | 1.85 |

# SCY Female 100Y Backstroke: Baseline

- Using the average first 50 (24.93) as a baseline to the average split delta's, results in the following list of race strategies for a selection of times
- Split Delta's
  - 1st → 2nd 50 = 6.6%

| Final Time | Splits by 50 | | Split Delta (seconds) |
|---|---|---|---|
| | 1st | 2nd | |
| *Note: all times are formatted in mm:ss.hh* | | | |
| 47.53 | 23.00 | 24.53 | 1.53 |
| 48.04 | 23.25 | 24.79 | 1.54 |
| 48.56 | 23.50 | 25.06 | 1.56 |
| 49.07 | 23.75 | 25.32 | 1.57 |
| 49.59 | 24.00 | 25.59 | 1.59 |
| 50.11 | 24.25 | 25.86 | 1.61 |
| 50.62 | 24.50 | 26.12 | 1.62 |
| 51.51 | 24.93 | 26.58 | 1.65 |
| 52.69 | 25.50 | 27.19 | 1.69 |
| 53.21 | 25.75 | 27.46 | 1.71 |
| 53.72 | 26.00 | 27.72 | 1.72 |
| 54.24 | 26.25 | 27.99 | 1.74 |
| 54.76 | 26.50 | 28.26 | 1.76 |
| 55.27 | 26.75 | 28.52 | 1.77 |
| 55.79 | 27.00 | 28.79 | 1.79 |

# SCY Female 100Y Breaststroke: Baseline

- Using the average first 50 (27.79) as a baseline to the average split delta's, results in the following list of race strategies for a selection of times
- Split Delta's
  - $1^{st} \rightarrow 2^{nd}$ 50 = 12.2%

| Final Time | Splits by 50 | | Split Delta (seconds) |
|---|---|---|---|
| | 1st | 2nd | |
| *Note: all times are formatted in mm:ss.hh* | | | |
| 55.18 | 26.00 | 29.18 | 3.18 |
| 55.71 | 26.25 | 29.46 | 3.21 |
| 56.24 | 26.50 | 29.74 | 3.24 |
| 56.77 | 26.75 | 30.02 | 3.27 |
| 57.30 | 27.00 | 30.30 | 3.30 |
| 57.83 | 27.25 | 30.58 | 3.33 |
| 58.36 | 27.50 | 30.86 | 3.36 |
| 58.98 | 27.79 | 31.19 | 3.40 |
| 59.42 | 28.00 | 31.42 | 3.42 |
| 59.96 | 28.25 | 31.71 | 3.46 |
| 1:00.49 | 28.50 | 31.99 | 3.49 |
| 1:01.02 | 28.75 | 32.27 | 3.52 |
| 1:01.55 | 29.00 | 32.55 | 3.55 |
| 1:02.08 | 29.25 | 32.83 | 3.58 |
| 1:02.61 | 29.50 | 33.11 | 3.61 |

# SCY Female 100Y Butterfly: Baseline

- Using the average first 50 (24.27) as a baseline to the average split delta's, results in the following list of race strategies for a selection of times
- Split Delta's
  - 1st → 2nd 50 = 13.0%

| Final Time | Splits by 50 | | Split Delta (seconds) |
|---|---|---|---|
| | 1st | 2nd | |
| *Note: all times are formatted in mm:ss.hh* | | | |
| 47.94 | 22.50 | 25.44 | 2.94 |
| 48.47 | 22.75 | 25.72 | 2.97 |
| 49.00 | 23.00 | 26.00 | 3.00 |
| 49.53 | 23.25 | 26.28 | 3.03 |
| 50.07 | 23.50 | 26.57 | 3.07 |
| 50.60 | 23.75 | 26.85 | 3.10 |
| 51.13 | 24.00 | 27.13 | 3.13 |
| 51.71 | 24.27 | 27.44 | 3.17 |
| 53.26 | 25.00 | 28.26 | 3.26 |
| 53.79 | 25.25 | 28.54 | 3.29 |
| 54.33 | 25.50 | 28.83 | 3.33 |
| 54.86 | 25.75 | 29.11 | 3.36 |
| 55.39 | 26.00 | 29.39 | 3.39 |
| 55.93 | 26.25 | 29.68 | 3.43 |
| 56.46 | 26.50 | 29.96 | 3.46 |

# Race Analysis Comparison

- This analysis confirms that energy is more evenly dispersed in long-axis strokes vs. short-axis strokes
- Additionally, this analysis shows that females race with a more narrow delta than males

| Delta from 1st to 2nd 50 | Long-Axis | | | Short-Axis | | |
|---|---|---|---|---|---|---|
| | Freestyle | Backstroke | **Average** | Breastroke | Butterfly | **Average** |
| Female | 7.4% | 6.6% | **7.0%** | 12.2% | 13.0% | **12.6%** |
| Male | 9.5% | 8.0% | **8.8%** | 13.6% | 14.3% | **13.9%** |