A DISCUS JOURNEY

Mike Turk

University of Illinois

Gia Lewis-Smallwood

- 2001 (C4)
  - 57.76m PB
  - 50.50m - 11th USA
- 2002 (PC1)
  - 52.28
- 2003 (PC2)
  - 54.95 – 9th USA
- 2004 (PC3)
  - 57.88m PB
  - 56.28m – 10th USA OT
- 2005 (PC4)
  - 48.68m – 20th USA
- 2006 (PC5)
  - 49.95m – 13th USA
- 2007 (PC6)
  - 51.10
- 2008 (PC7)
  - 59.96 PB

Psychological Assessment

- Lack of confidence
  - Perform when it counts?
  - Relatively inexperienced
- No mind-body link
  - Lack of appropriate effective system of cues
- Need to toss out the security blanket
- A+ Commitment
- A+ Support

Physical/Training Assessment

- Excellent athleticism
- Good strength levels
- Excellent power capabilities
- Age/training age factors
- Lack of specific training
- Commitment to health & lifestyle

Skill Assessment

- Lack of knowledge of the event
- Lots of cooks in the kitchen
- Used multiple radical (and different) technical models
- Basic tendency towards linear technique
- Achieved results over 57m using three different technical models over a eight year period
- Very inconsistent

2008 Side View

- Leads movements with turning head
- Pendulum action of right leg instead of sweeping
- High & low points of the orbit misplaced
- Poor weight distribution & balance in power position.
- Weak left leg block

2008 Rear View

- Spends a lot of time in pre-throw routine
- Very explosive in the delivery
- Unreliable technique

2008 Results

54.01		3 Sun Angel	Tempe AZ	12 Apr
56.45		1 KansasR	Lawrence KS	19 Apr
53.70		1 DrakeR	Des Moines IA	25 Apr
53.25		1 Twilight	Champaign IL	30 Apr
59.96	**SB (42)**	1 Redbird Inv	Normal IL	3 May
54.29		7 Pre	Eugene OR	8 Jun
NM		q NC	Eugene OR	27 Jun

Stages of Motor Learning

- Cognitive
  - Develop basic understanding of concepts
- Associative
  - Refine and stabilize technique
- Autonomous
  - Automatic performance

Three Phase Plan for Quadrennium

- Phase I (2009-2010)
  - Discovery and Learning
- Phase II (2010-2011)
  - Refining and Believing
- Phase III (2011-2012)
  - Belonging and Competing

Phase I Objectives

- Discovery of abilities
- Establish a technical model
- Build a cue system
- Develop & emphasize consistency
- Be part of the “in crowd”

Phase II Objectives

- Technical refinements
- Stabilize the technical model
- Step up performances
  - Season average
  - Lifetime Best
  - USA Championships
- Gain opportunities to compete internationally

Phase III Objectives

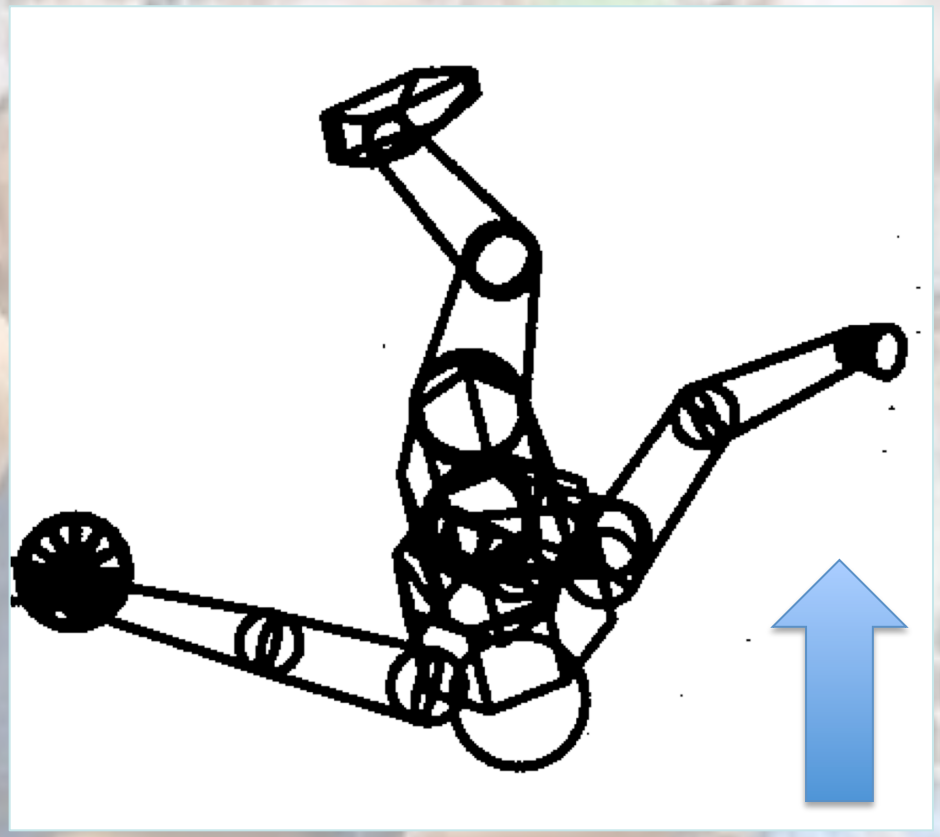
- Automation
- Maintain technique
- Keep the practice environment fresh by using different stimulus
- Improve speed of movement

Considerations for Construction of the Technical Model

- Focus on creating maximum separation in the power position to take advantage of Gia's excellent ability to accelerate and deliver the discus
- When to create and how to maintain separation
- Need for stable balanced positions
- Establish a model that is simple

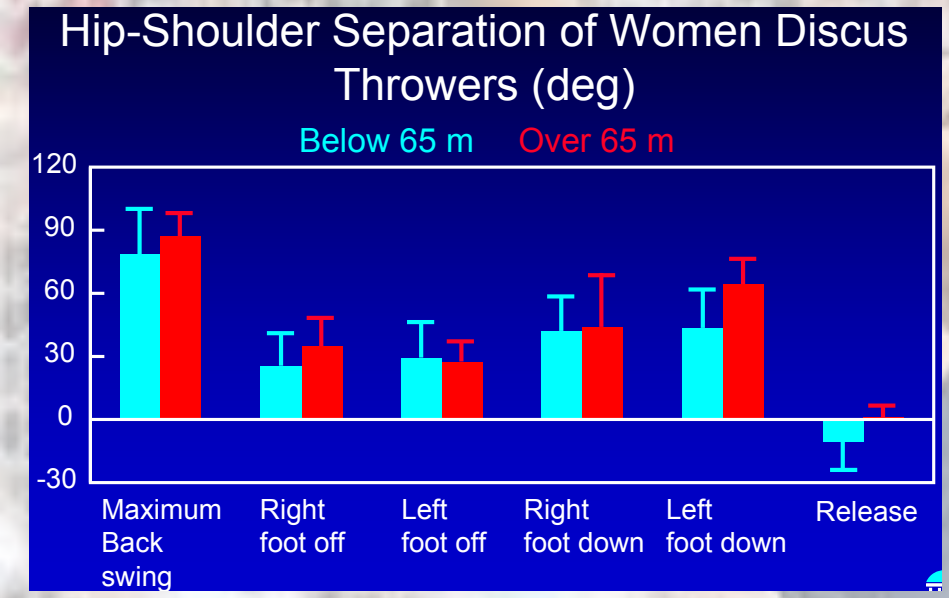
Separation (Tension)

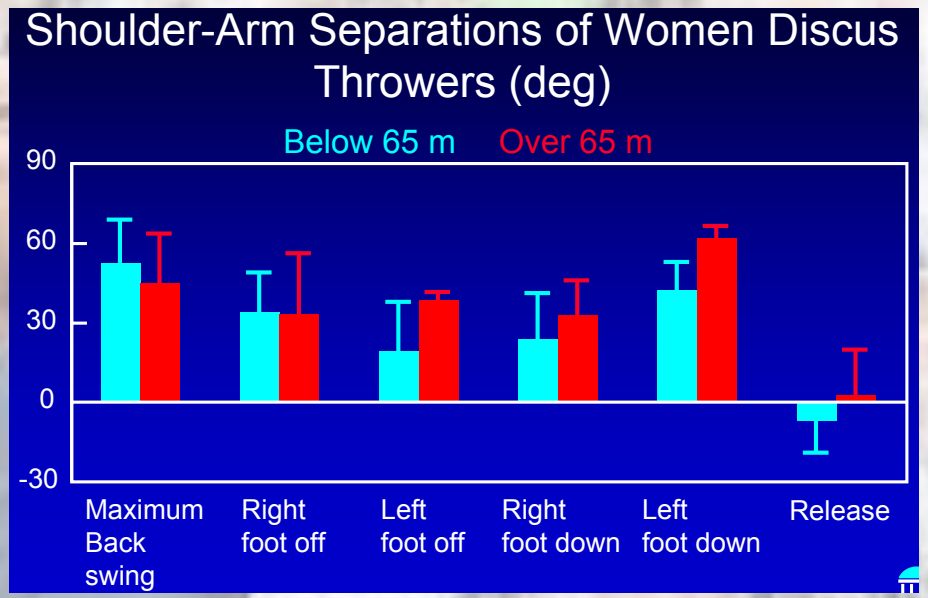
- Hip-Shoulder Separation
- Shoulder-Arm Separation
- Track separation at landmark points
  - DS1, SS1, NS, SS2, DS2



Top View

Separation Data





Data & Graphs by Bing Yu, PhD, UNC-CH
USATF Biomechanist for the discus
http://www.usatf.org/groups/coaches/library/2007/Throws%20Training/Throw_Summit_2007.pdf

Foundations of the Technical Model

- Posture
  - Upright “stickman” posture
- Balance
  - Critical in executing the turn to land in an effective power position
- Rhythm
  - Control movements (slow-fast) for proper sequencing
- Separation
  - Focus on separation in the power position
- Blocking
  - Braced left leg and stopped left shoulder
- Flight
  - Wide radius of the throwing lever
  - Control the angle of the release

Whole-Part-Whole Method

- Whole
- Stand Throws
- Half Turns
- Turning Drills
- Ring Awareness Drills
- Full Throws
- 360 & Go Throws

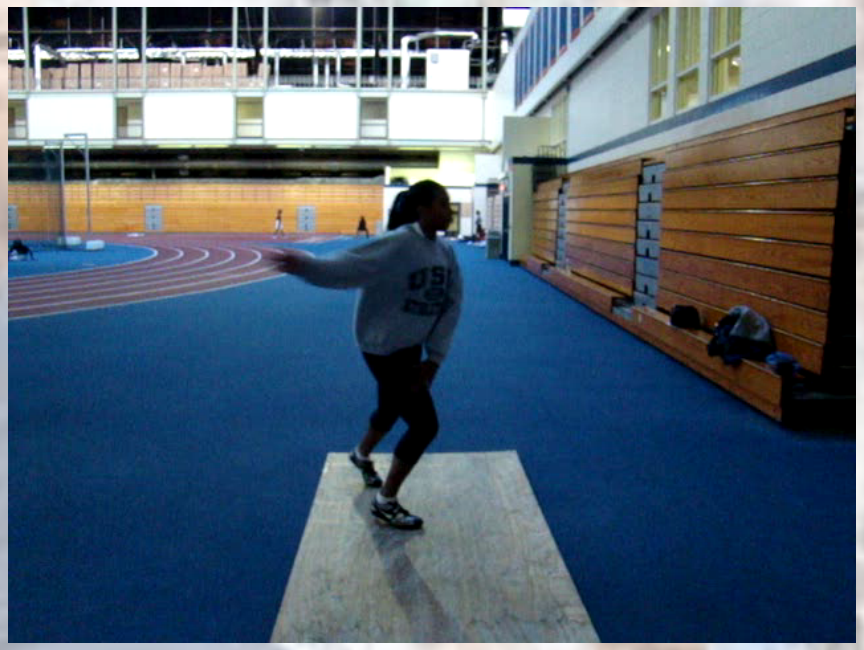
September 2008

Phase I Throwing Sessions

- Periodization of drills/throwing
  - Drill intensive early in the year
  - Full throws are the majority of the volume of attempts late in the season
- Focused Throwing Session
  - “Pass the points!”
  - Build a system of cues
  - Stay on task
- Range Throwing
  - Use of range of 70-80% effort

Stand Throws

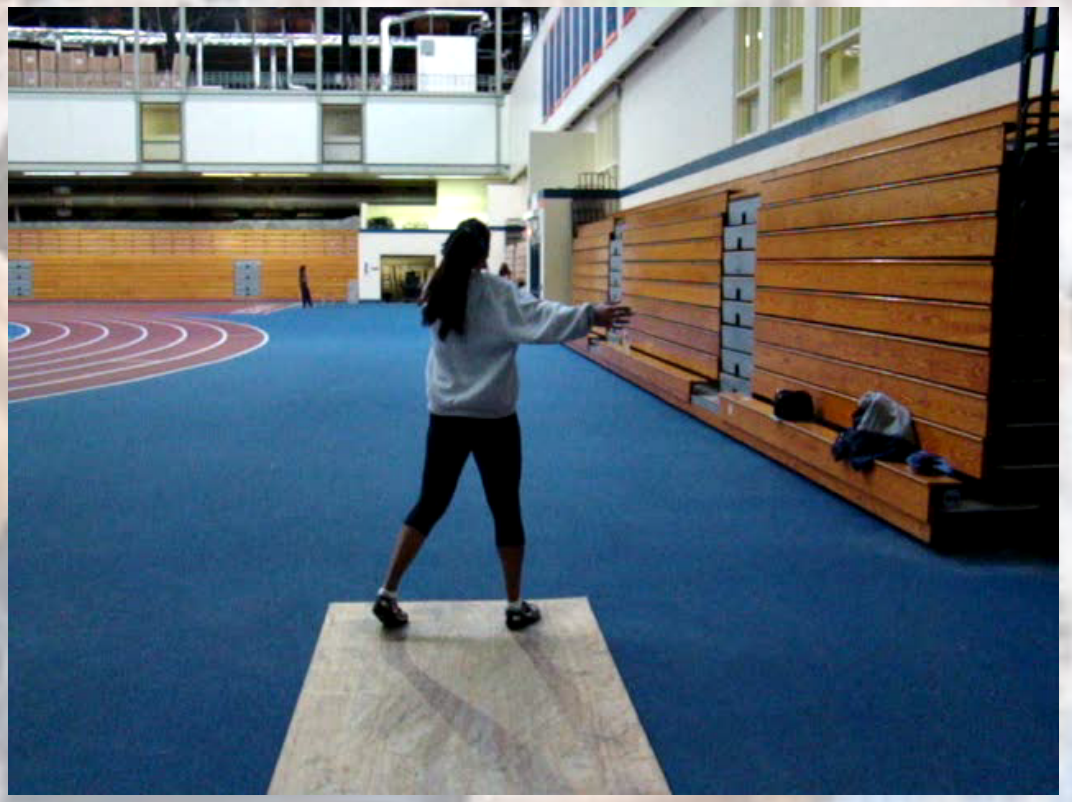
Half Turn



Turning Drills

Awareness Drills

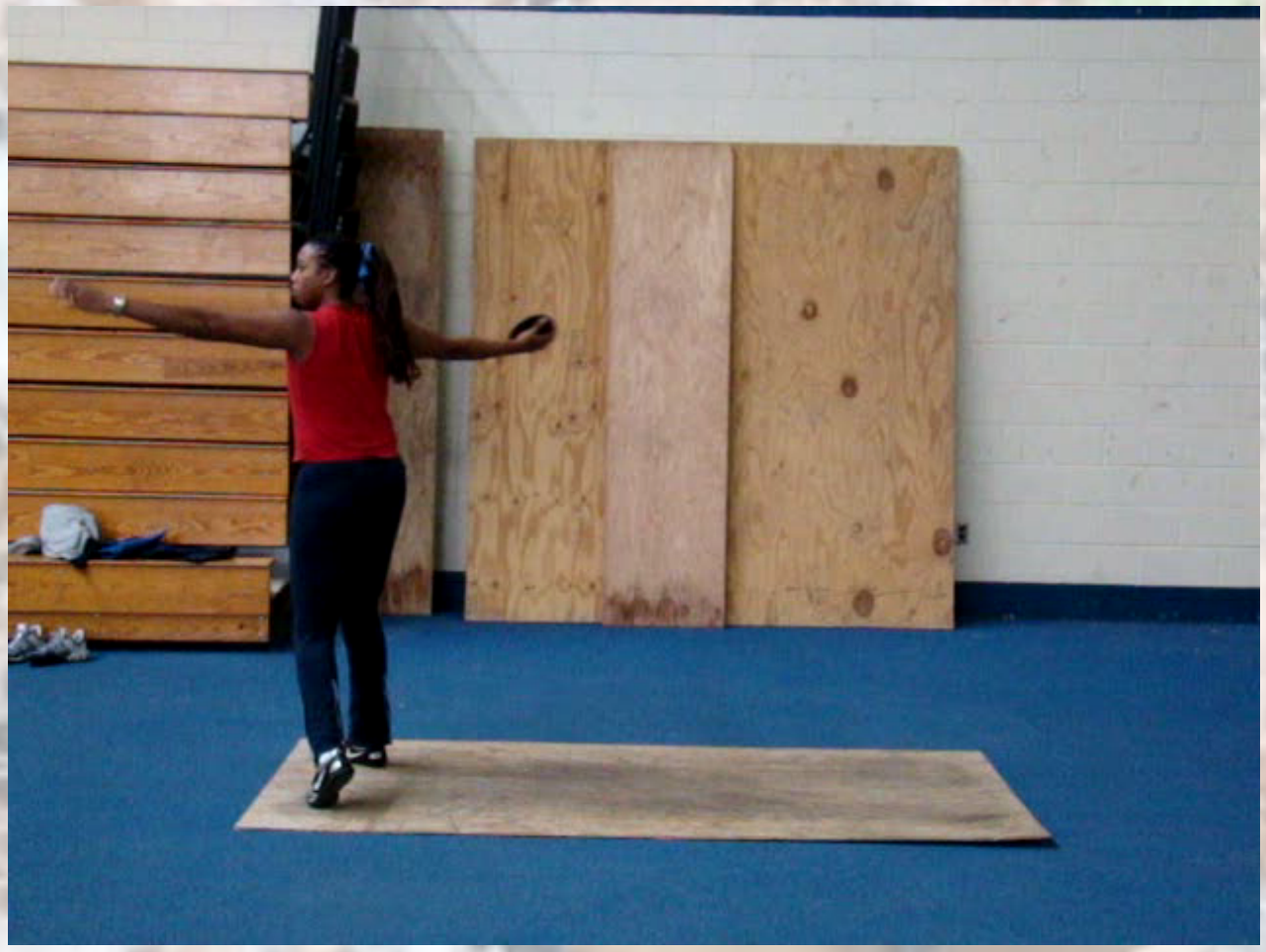
- Landmarks
- Focal Points



Full Throw Imitation

South African

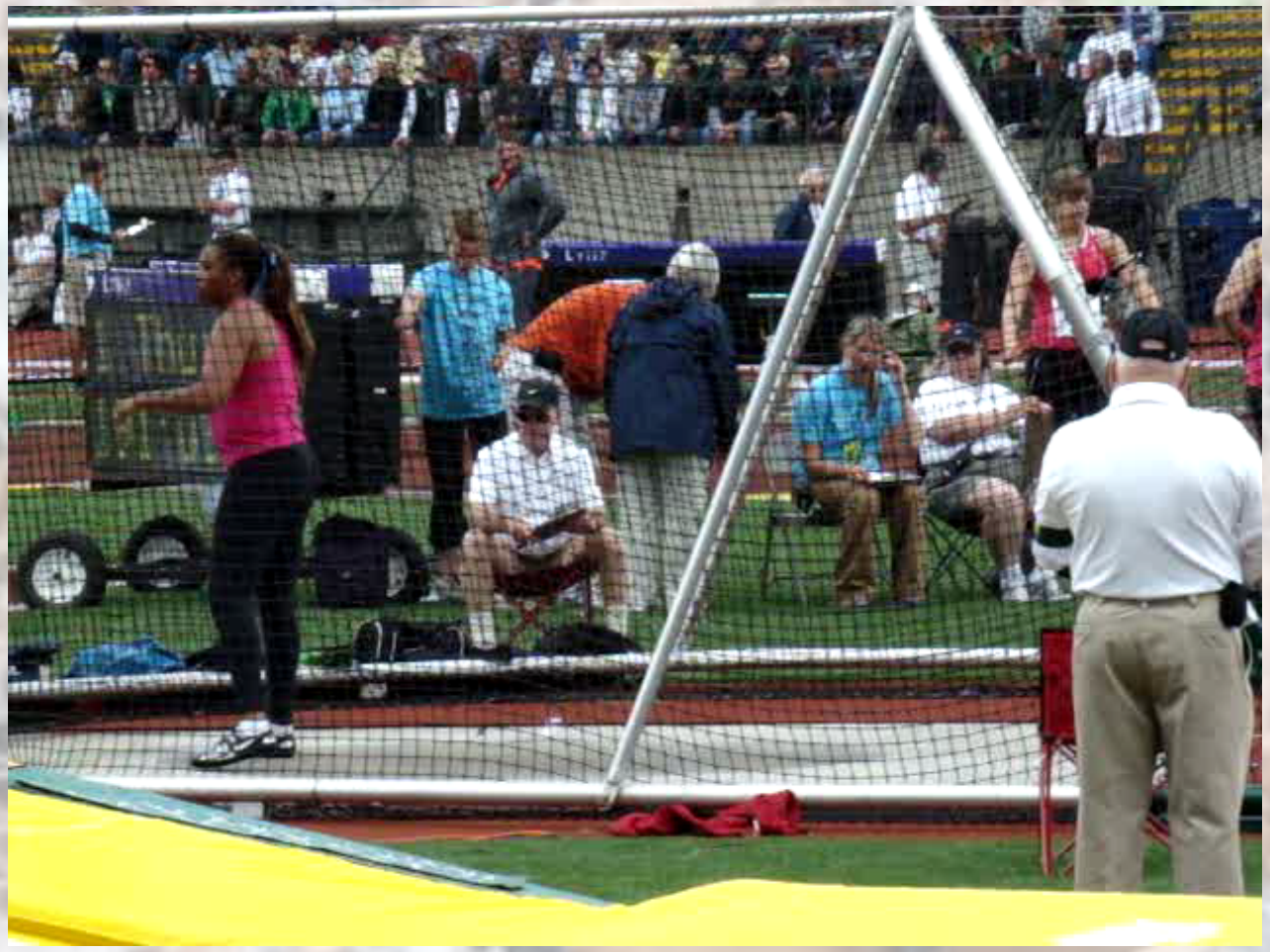
360 Turn & Throw



Considerations For Competition

- Establish routines (Warm up protocol, during competition, etc.)
- The speed-accuracy trade off
- Rhythm of warm ups and competition should be controllable and consistent

Phase I Basic Model
2009 Pre Classic



2009 Post Season Evaluation

- Learned basic concepts
- Consistency - only one meet below 56m (rain)
- New PB 60.32
- Placed at USATF
- Conquered Eugene

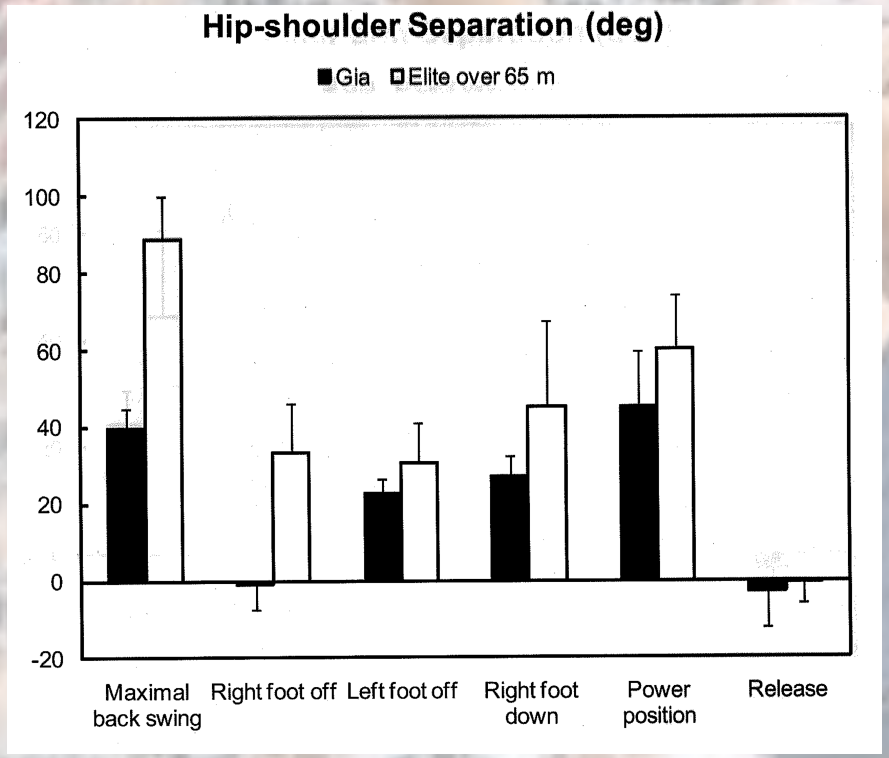
2009 Results

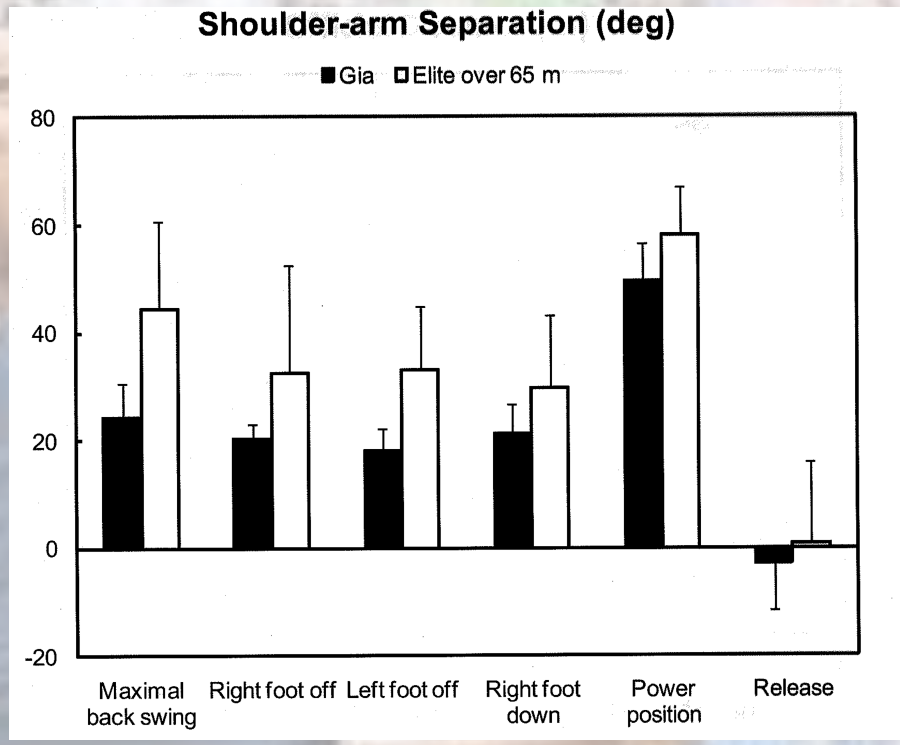
58.36		1	Classic	Charleston IL	4 Apr
57.10		1	Calhoun	Macomb IL	11 Apr
58.64		2c2	MSR	Walnut CA	18 Apr
53.73		5c2	DrakeR	Des Moines IA	25 Apr
59.28		1	Ill Inv	Champaign IL	2 May
60.32	**SB (37)**	1	Elite Throwers	Tucson AZ	21 May
56.93		3	Elite Throwers	Tucson AZ	23 May
57.34		5	Reebok	New York NY	30 May
59.39		6	Pre	Eugene OR	7 Jun
58.74		6	NC	Eugene OR	25 Jun

Phase II – Technical Refinements

- Increase separation (tension) especially in the power position
- Adjust orbital path and arm angle at release
- Generate more vertical velocity
- Blend linear and rotational drills & movements
- Improve rhythm with a more fluid backswing and entry

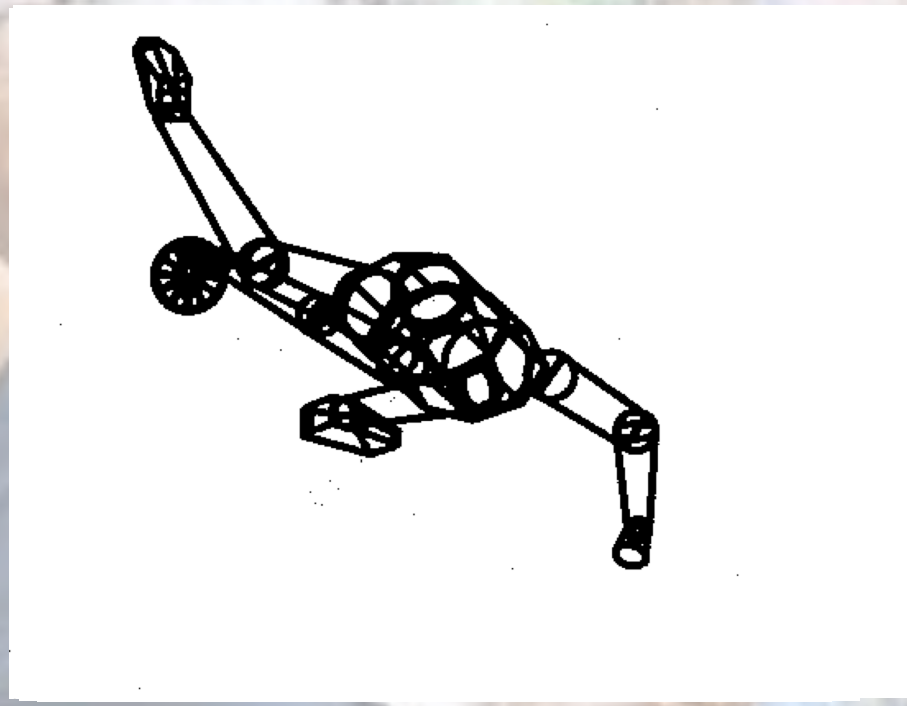
Gia's Separation Data

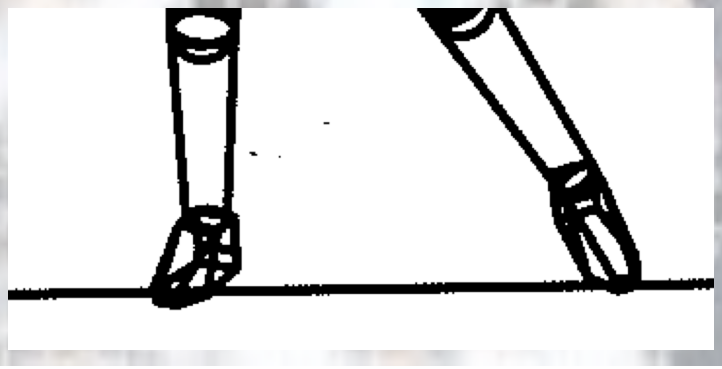




Strategy To Create Separation

- Sweep of the right leg
- Right leg passes the midline of the body
- Drive off the left leg
- Allows the hips to rotate ahead during flight phase.



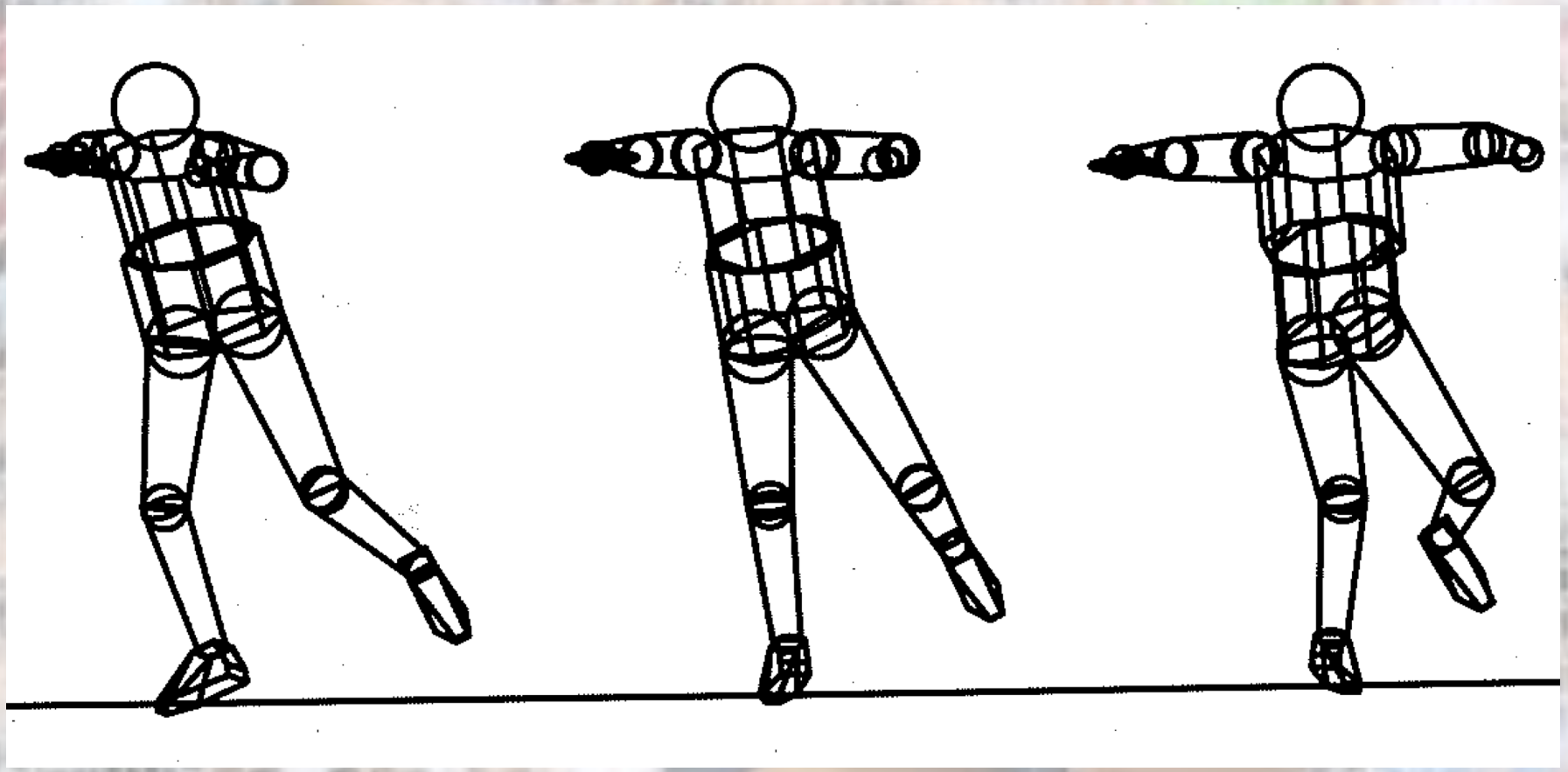


South African

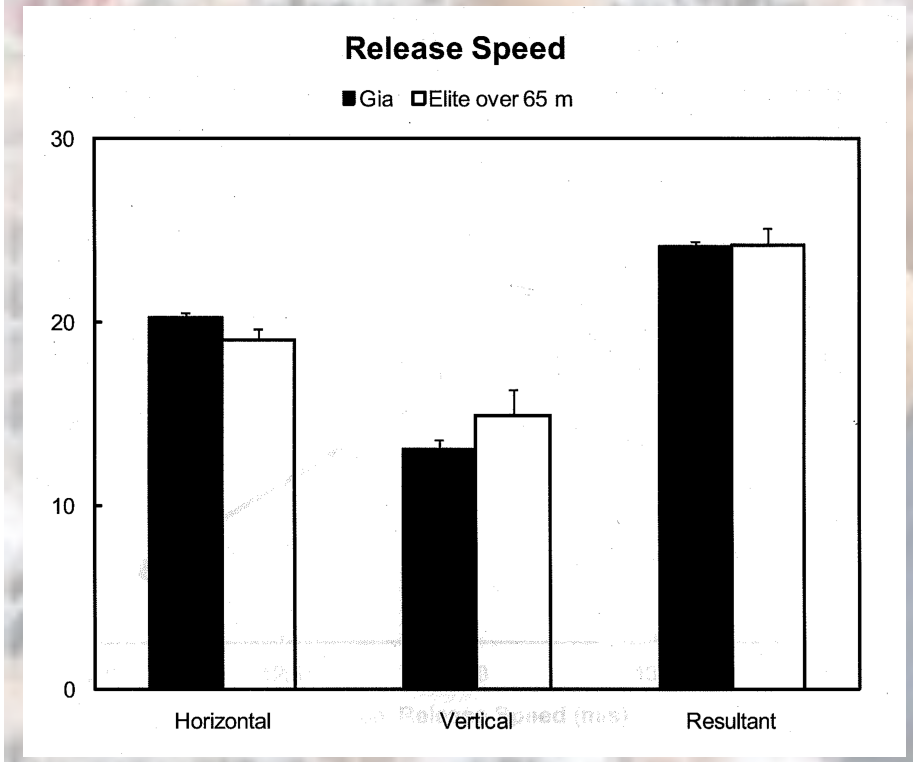
Cues

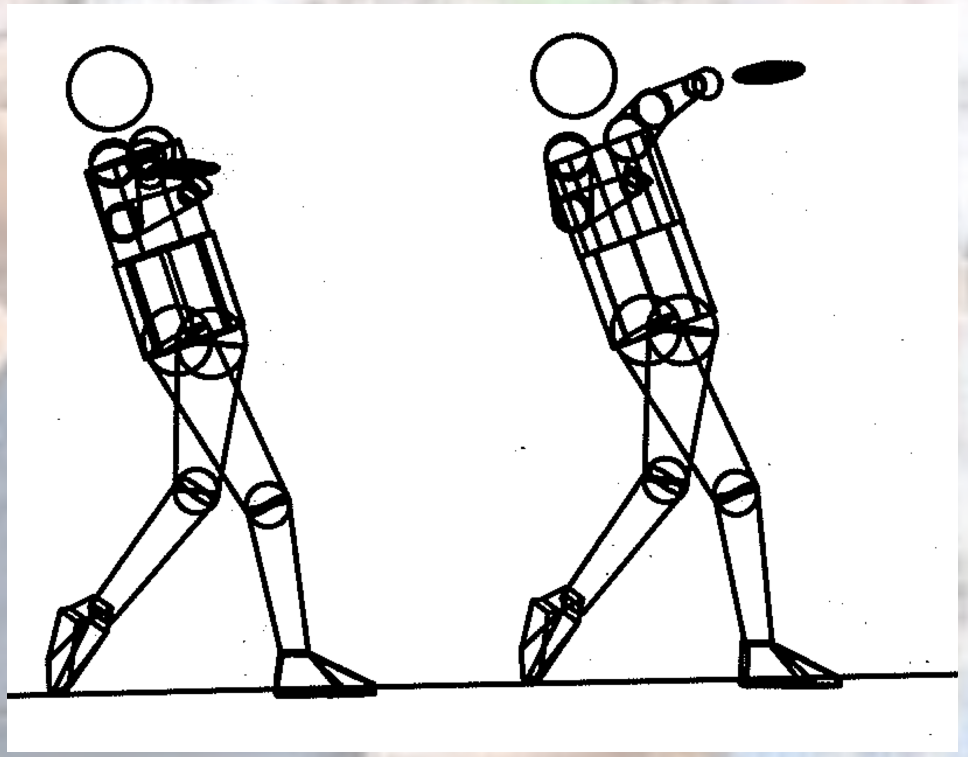
- Sweep the right ahead
- Pass the “point”
- Get off the left
- Get up in the middle
- “Flip the hips”

Orbital Path and Arm Angle



Vertical Velocity





2010 USATF - 62.18m (2nd Place)

65.58m PB

Blending Linear & Rotation Movements

- Working 360 turns along with South African drills.
- Alternate sets of South Africans and full throws
- Varying emphasis (volume of attempts) on linear or rotational movements during the session

2010 Post Season Evaluation

- Only 1 meet under 58.92m
- New PB 65.58
- 2nd place @ USATF
- Earned her 1st opportunity to compete outside of the USA
- 52.92 to open the season in rainy conditions
- Longest season of career

2010 Results

52.92		2 Poehlein	West Lafayette IN	3 Apr
58.92		1 Calhoun	Macomb IL	10 Apr
58.93		4 MSR	Walnut CA	17 Apr
60.97		2 DrakeR	Des Moines IA	24 Apr
59.97		1 Twilight	Champaign IL	30 Apr
59.73		1 Cardinal	Louisville KY	14 May
59.89		2 Classic	Tucson AZ	20 May
62.75		1 Classic	Tucson AZ	22 May
60.39		1 CAA	Brazzaville	30 May
59.70		4 adidas	New York NY	12 Jun
62.18		2 NC	Des Moines IA	27 Jun
65.58	**PB (7)**	1	St. Charles MO	10 Jul

2011 Goals & Objectives

- Achieve IAAF WC “A” standard (62m)
- Make WC team
- Gain additional opportunities to compete internationally
- Stabilize technical refinements from 2010
- Improved performance in poor (rainy) conditions
- Autonomy
- Take advantage of WC opportunity to prepare for 2012 OG

2011 Post Season Evaluation

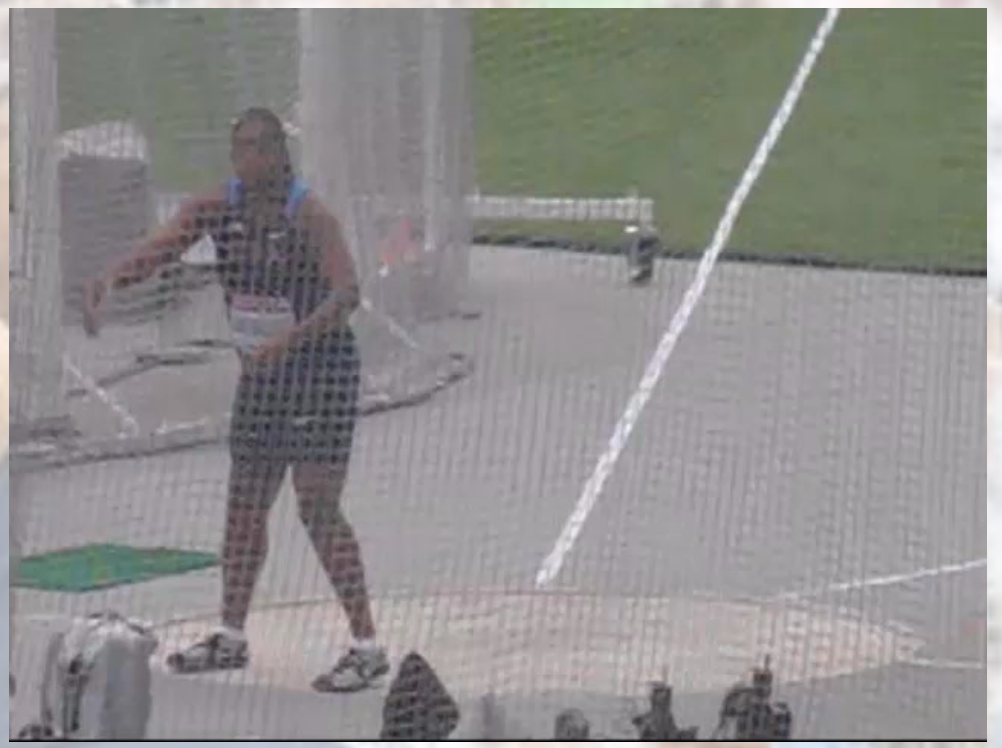
- Not ready for autonomy at start of 2011
- Performed well in adverse conditions
- Gained international experience
- 3rd @ USATF (WC selection)
- Short of WC final goal (15th)
- 4th place at Pan Am Games
- Health and conditioning became an issue for the first time

2011 Results

55.03i	**PB (4)**	3		Växjö	12 Mar
56.15		5	TT Open	Lubbock TX	1 Apr
60.23		1	Musco	Iowa City IA	23 Apr
62.26	**SB (24)**	2		Wailuku HI	28 Apr
61.13		3		Wailuku HI	29 Apr
60.64		4	Diamond	Shanghai	15 May
59.89		2	adidas	New York NY	11 Jun
60.53		3	NC	Eugene OR	23 Jun
59.49		15q	WC	Daegu	27 Aug
57.34A		4	PAG	Guadalajara	28 Oct

2011 IAAF World Championships

- Village environment
- Practice sessions (autonomy)
- Warm up protocol
- Marshaling
- Emotion of walking in the stadium
- Performance
  - Sector foul
  - 56.91
  - 59.49



3rd qualifying attempt -59.49m

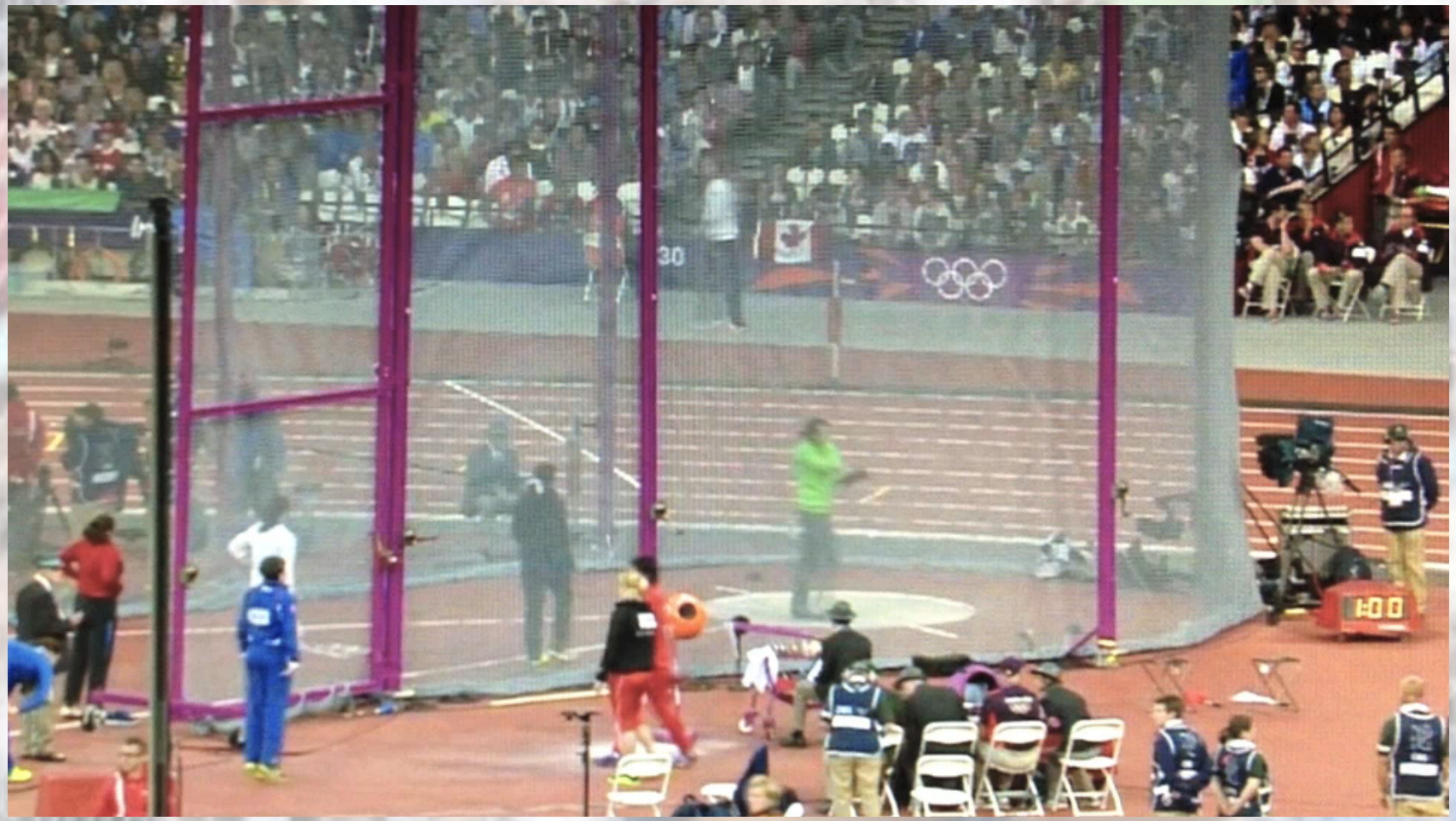
2012 Goals & Objectives

- Olympic “A” standard
- Make US Olympic Team
- Qualify for Olympic final
- Get on the podium
- Autonomy
- Manage stress
- Rely on basic model for base performances
- Hit the “A” standard early in the season
- Stay focused on goals
- Use experience of WC to prepare at the OG
- Keep sessions fresh

London Preparation

- Focus on basic model
- Mini cycle focusing on specific strength
- Kept busy with moderate to light twice daily sessions
- Practiced in rain
- Simulated warm up and competitive environment in practice

London 2012



Women's discus qualifying

Post London Evaluation

WDT MAJOR CHAMPIONSHIP QUALIFYING ROUNDS											
Year	Min Qual.	US-1	Place	US-2	Place	US-3	Place	US Finalists		US Medalists	
2012 OG	62.47	**64.89**	**6th**	61.44	15th	59.39	25th	Brown-Trafton			
2011 WC	59.94	**61.89**	**6th**	59.88	13th	59.49	15th	Brown-Trafton			
2009 WC	61.08	**61.23**	**11th**	**61.08**	**12th**	58.5	22nd	Brown-Trafton	Hill-Thurmond		
2008 OG	60.28	**62.77**	**1st**	**61.90**	**6th**	58.02	26th	Brown-Trafton	Hill-Thurmond	Brown-Trafton	GOLD
2007 WC	60.89	59.57	15th	58.42	19th	53.02	26th				
2005 WC	59.30	57.68	16th	57.16	18th	47.15	22nd				
2004 OG	61.35	58.82	19th	58.54	22nd	NM	-				
2003 WC	59.87	**61.83**	**6th**	58.07	16th	50.79	20th	Powell			
2001 WC	60.67	**62.63**	**5th**	**62.54**	**6th**	58.19	18th	**Sua**	Kuehl		
2000 OG	60.74	**61.88**	**8th**	59.68	15th	-	-	Sua			
1999 WC	62.35	**62.48**	**10th**	57.50	23rd	55.77		Sua			
1997 WC	59.88	59.18	16th	55.52	20th	54.22	21st				
1996 OG	61.98	57.48	30th	56.24	33rd	56.04	34th				
1992 OG	60.88	58.66	21st	58.06	22nd	55.44	24th				
1988 OG	62.54	57.5	15th	57.04	16th	-	-				
1984 OG	53.34	**56.24**	**Q**	**53.76**	**Q**	**53.34**	**Q**			Deniz	Silver

OG & WC	60.948	* excluding 1984 OG
OG	61.4629	* excluding 1984 OG
WC	60.50	
Last 4	60.9425	

2012 Post Season Evaluation

- Endured the early part of the season
- Achieved goal of OG "A" standard early
- Great performance in the rain at Prefontaine Classic
- Poor plan for U.S. Olympic trials final
- **MADE THE TEAM!**
- Good preparation and focus for London

2012 Results

57.94		1	MissouriR	Columbia MO	24 Mar
57.62		1	Big Blue	Charleston IL	31 Mar
56.46		1	Calhoun	Macomb IL	14 Apr
56.48		1c2	Musco Inv	Iowa City IA	21 Apr
58.59		1c1	Musco Inv	Iowa City IA	21 Apr
57.22		3		Chula Vista CA	25 Apr
59.82		6	Triton Inv	La Jolla CA	28 Apr
62.88		3		Wailuku HI	4 May
63.97	**SB (16)**	3		Wailuku HI	5 May
61.69		1	Elite Classic	Tucson AZ	17 May
59.88		2	Elite Classic	Tucson AZ	19 May
60.74		2	Pacific Ch	San Mateo CA	27 May
61.77		5	Pre	Eugene OR	1 Jun
	61.30 61.77 X 59.69 60.57 58.20				
57.60		6q	OT	Eugene OR	22 Jun
58.78		6	OT	Eugene OR	24 Jun
61.44		15q	OG	London	3 Aug
	X 61.44 61.25				