

BAYLOR



BAYLOR

**APPLIED
PERFORMANCE**

Baylor Performance:

Past – Present – Future

Andrew Althoff

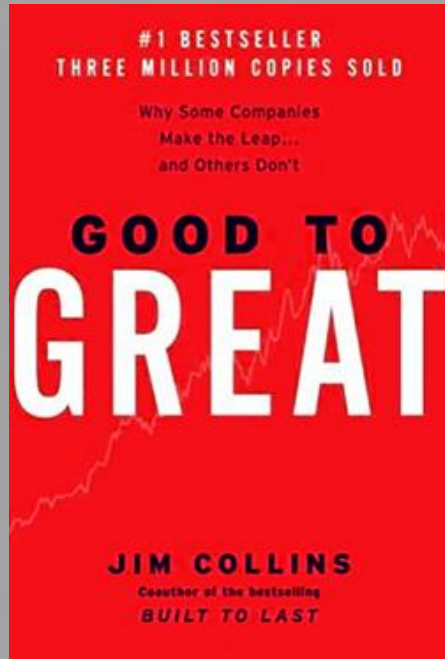
ABCD, EFGH, IJKL, LMNO, PQRS, TUVW, XY&Z



Outline:

1. Contextual Info
2. How our culture was set
3. Filtering of sports science
4. Future considerations





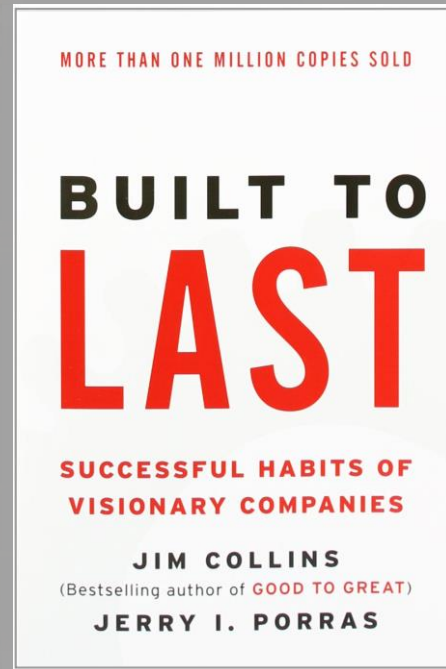
#1 BESTSELLER
THREE MILLION COPIES SOLD

Why Some Companies
Make the Leap...
and Others Don't

GOOD TO GREAT

JIM COLLINS
Coauthor of the bestselling
BUILT TO LAST

The book cover features a red background with a white line graph showing an upward trend. The title 'GOOD TO GREAT' is prominently displayed in large, bold, white and red letters.



MORE THAN ONE MILLION COPIES SOLD

BUILT TO LAST

SUCCESSFUL HABITS OF
VISIONARY COMPANIES

JIM COLLINS
(Bestselling author of *GOOD TO GREAT*)
JERRY I. PORRAS

The book cover is white with red and black text. The title 'BUILT TO LAST' is in large, bold, black and red letters. Below the title, the authors' names are listed in black.



The Past



1994

1996

1998

2000

2002

2004

2006

2008

2010

2012

2014

2015



Bowl Appearances

Staff Evolution

2007

2008

2009

2010

2011

2012

2013

2014

2015

Generation 1 (4):
 Director of Football
 Associate Director of Football
 Assistant Director of Football
 Graduate Assistant

Generation 3 (8):
 Assist. AD of Ath. Perf.
 Director of Football
 Director of Oly. Sports
Associate Director of Oly. Sports
 Associate Director of Football
 Graduate Assistantx3

Generation 5 (14):
 Assist. AD of Ath. Perf.
 Director of Football
 Director of Olympic Sports
 Associate Director of Ath. Perf. x2
Director of Performance Nutrition
 Assistant Director of Football
 Assistant Director of Oly. Sports
 GAx2
 SW x4

Generation 7 (22):
 Associate Athletic Director
Director of Athletic Performance
 Director of Football
 Director of Olympic Sports
 Director of Performance Nutrition
Director of Applied Performance
 Associate Director of Football
 Assistant Director of Olympic Sports
 Assistant Director of Perf. Nutrition
Assistant Director of Applied Perf.
 GAx4
SW x8

Generation 2 (7):
 Assist. AD of Athletic Performance
 Director of Football
Director of Olympic Sports
 Associate Director of Athletic Performance
Assistant Director of Olympic Sports
 Graduate Assistantx2

Generation 4 (14):
 Assist. AD of Ath. Perf.
 Director of Football
 Director of Olympic Sports
 Associate Director of Ath. Perf.
Co- Director of Oly. Sports
 Assistant Director of Football
Assistant Director of Oly. Sports
Recovery/Nutrition Specialist
 GAx2
SW x4

Generation 6 (16):
Associate Athletic Director for Ath. Perf.
 Director of Football
 Director of Olympic Sports
 Director of Performance Nutrition
 Associate Director of Footballx2
 Assistant Director of Olympic Sports
 Assistant Director of Football
Assistant Director of Perf. Nutrition
 GAx2
SW x5



STUDENT WORKER PARTNERSHIP



STUDENT WORKER PROGRAM





Allison Indoor Facility



McLane Stadium



Williams Sports Facility



Highers-Simpson Facility



On-Campus Dining Hall



BANC Dining Hall

2008

2008

2009

2010



2011



2012

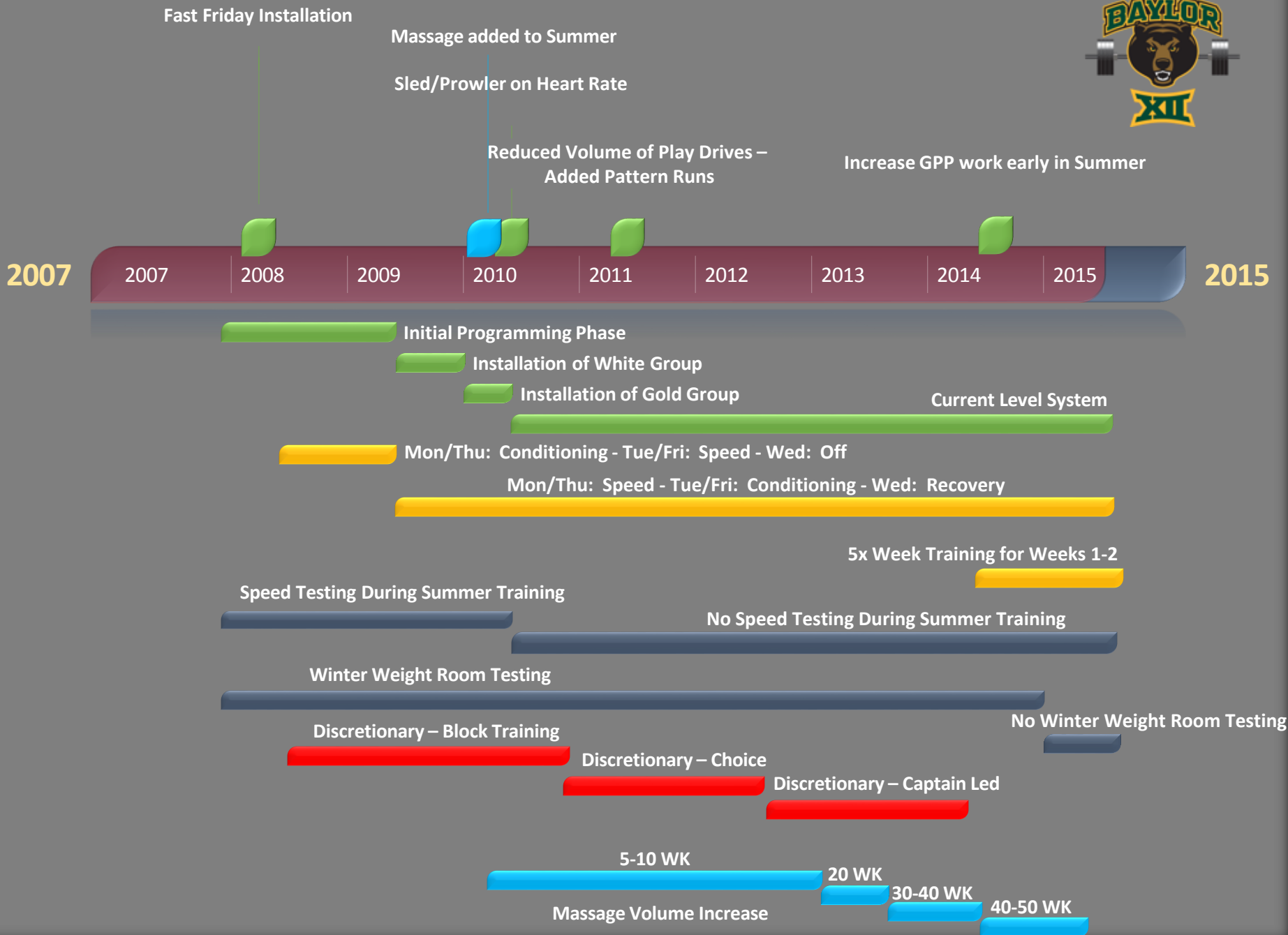
2013

2014

2015

2015





1st Four Weeks of Summer

BLACK GROUP	2013	2014	2015
Strength	679	454	376
Olympic	107	201	204
Total	786	655	580

GRAY GROUP	2013	2014	2015
Strength	444	384	379
Olympic	95	158	158
Total	539	542	537

GREEN GROUP	2013	2014	2015
Strength	538	474	470
Olympic	65	135	166
Total	603	609	636

GOLD GROUP	2013	2014	2015
Strength	609	536	580
Olympic	131	144	132
Total	740	680	712



Athlete Monitoring

Omegawave Update GPS Report

Catapult GPS

NormaTec

TMG

Omegawave

Fusion Timing Systems

Analytics Report

Athletigen Genetic Testing

2008

2008

2009

2010

2011

2012


2013

2014

2015

2015

Today

A person in a white, red, and blue wingsuit is flying over a rocky cliffside. The wingsuit has red and white patterns on the wings and blue on the body. The person is positioned in the lower left of the frame, flying towards the right. The cliffside is dark and textured, with a deep crevice visible. The background shows a vast, hazy landscape with a river or valley below. The sky is bright and clear.

**“The way to ensure
this calm but
heightened attention
to the matter at hand
is to choose activities
that push you so close
to the edge of your
competence that they
demand your
absolute focus”**

- Nicholas Hobbs

A scene from the movie 'The Wizard of Oz' featuring the Tin Man, Dorothy, and the Cowardly Lion in a room with green curtains. The Tin Man is on the left, Dorothy is in the center, and the Cowardly Lion is on the right. The text 'THE PRESENT' is overlaid in the center.

THE
PRESENT



IT'S ABOUT...



1%

MONITOR



MANAGE



MAXIMIZE



MONITOR

*If I had six hours
to chop down a tree,
I'd spend the first four hours
sharpening the axe.*

~ Abraham Lincoln

NUTRITION

SLEEP

SORENESS

MOOD



STRENGTH

POWER

SPEED

Coaches' Intuition & Eye:

- How are the athletes moving?
- Marked changes in performance?
 - How much?
 - Why?
- Did we load/stress the athlete in the manner we planned?
- What can we do to improve/streamline?

MONITOR

S.M.A.R.T. Analysis:

Specific

Measurable

Actionable

Relevant

Time

MONITOR

ASSESSMENTS	BIGS	INT	SKILL
Body weight		X	X
Soreness	X	X	X
Sleep Qual/Quan	X	X	X
Stress	X	X	X
Nutrition		X	X
Omegawave	X	X	X
Strength/Power (wtroom)	X		
Playerload	/distance	X	X
IMA H/M/L	H/M/L	H/M	H/M
Distance 50-75%		X	
Distance 75-90%		X	X
Distance 90+%		X	X
Max Velocity (mph)		X	X
HR (min/max/avg)	X	X	X
TMG		X	X
Athletigen	X	X	X

MONITOR

SUMMER PREP IN SEASON

ASSESSMENT	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Body Weight	X		X	X	X	X	
Questionnaire (pre)	X		X	X	X		
Questionnaire (post)	X		X	X	X		
Omegawave	X		X	X	X		
Catapult			X	X	X		X
Weight Training	X		X	X	*		
Yoga/Massage /Chiro	X			X	X		X
TMG		X	?	?	?		
ASSESSMENT	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Body Weight		X			X		
Questionnaire (pre)		X	X		X	X	
Questionnaire (post)		X	X		X	X	
Omegawave		X	X		X	X	
Catapult			HR			HR	
Weight Training		X	X	X (WK 1-2 ONLY)	X	X	
Speed/Agility/ Jumps		X			X		
Conditioning			X			X	
Yoga/Massage /Chiro				X		X	
TMG				X		X	



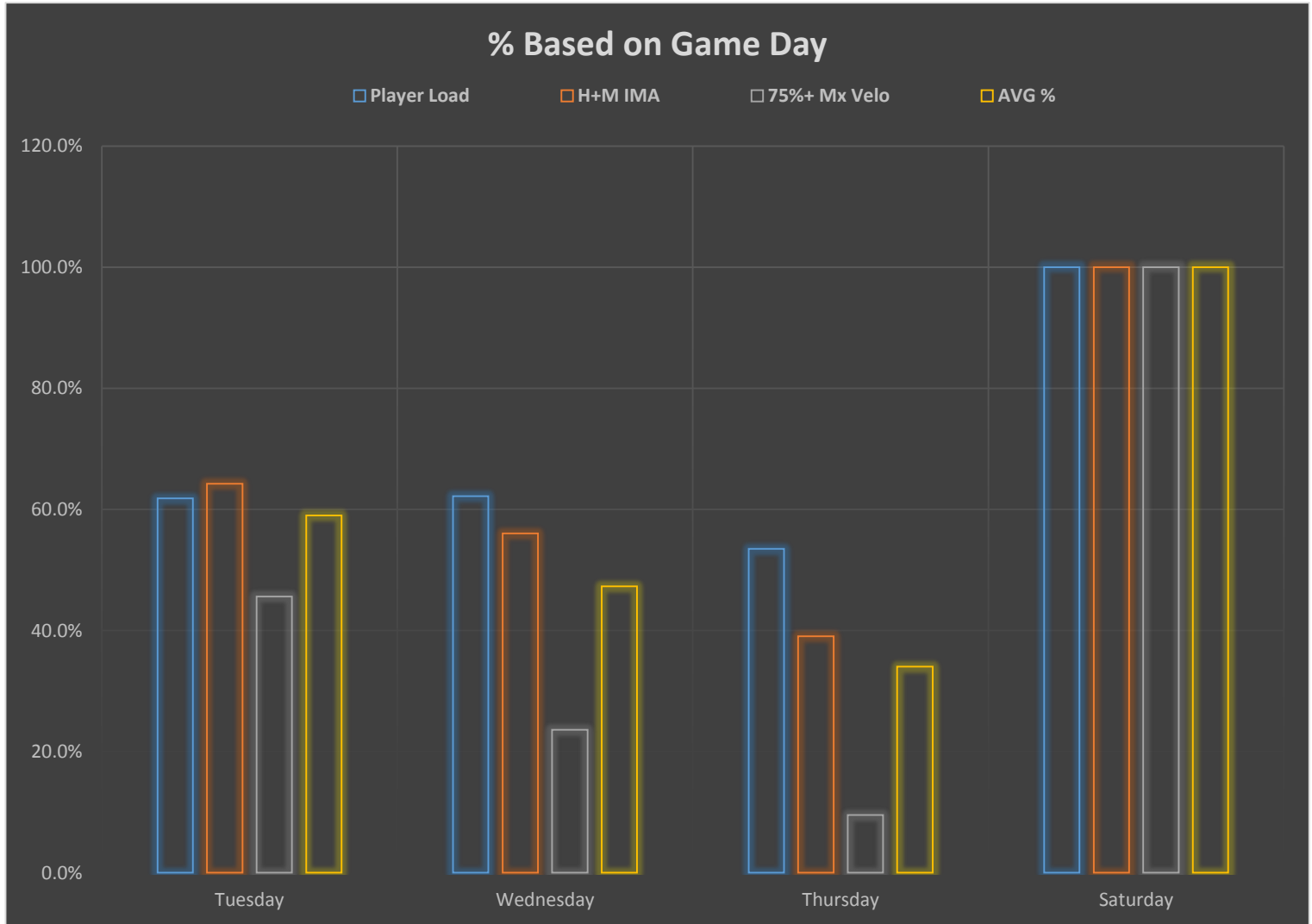
MANAGE



MANAGE

**STOP HITTING
PARKED CARS**

2013 WR DATA



	Player Load	H+M IMA	75%+ Mx Velo
Tuesday	375.3	105.5	61.6
Wednesday	377.5	92	31.9
Thursday	324.6	64.1	12.9
Saturday	606.9	164.2	135.1

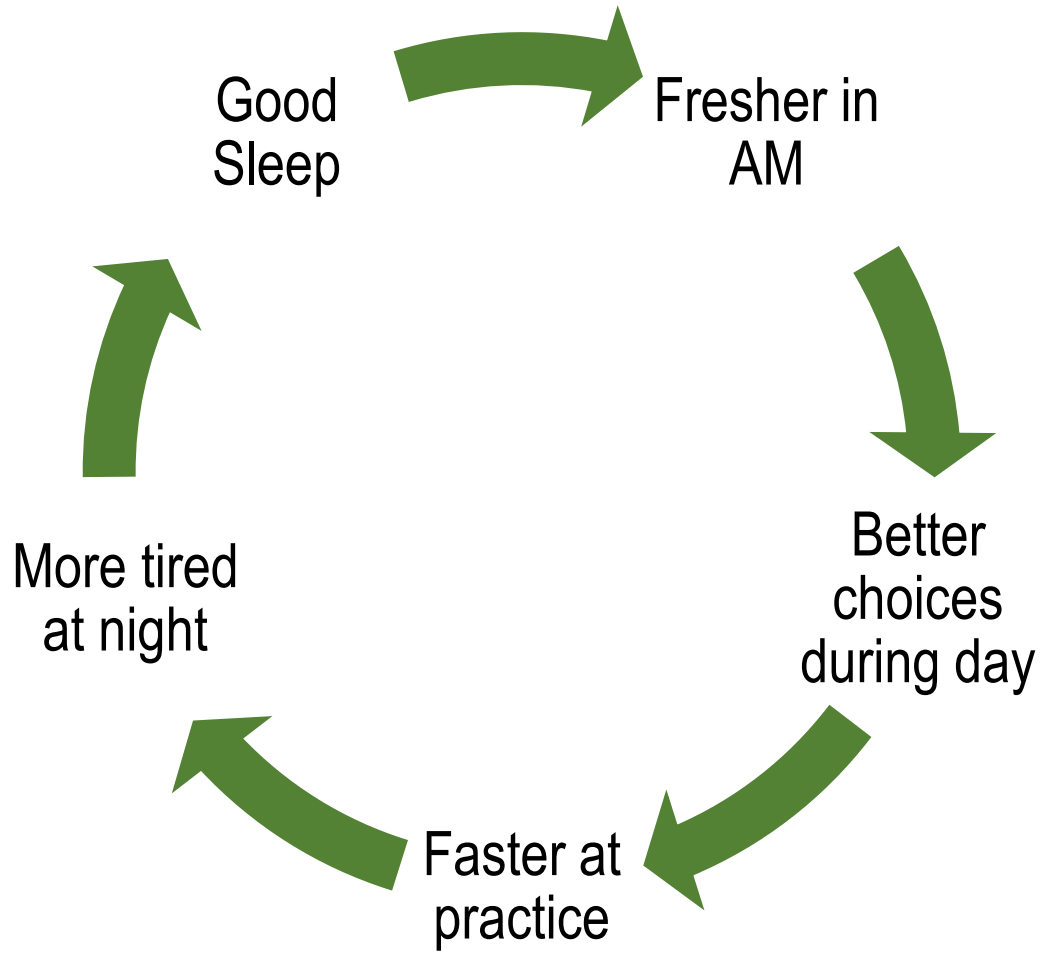
MANAGE



Linear Regression (Predictive)

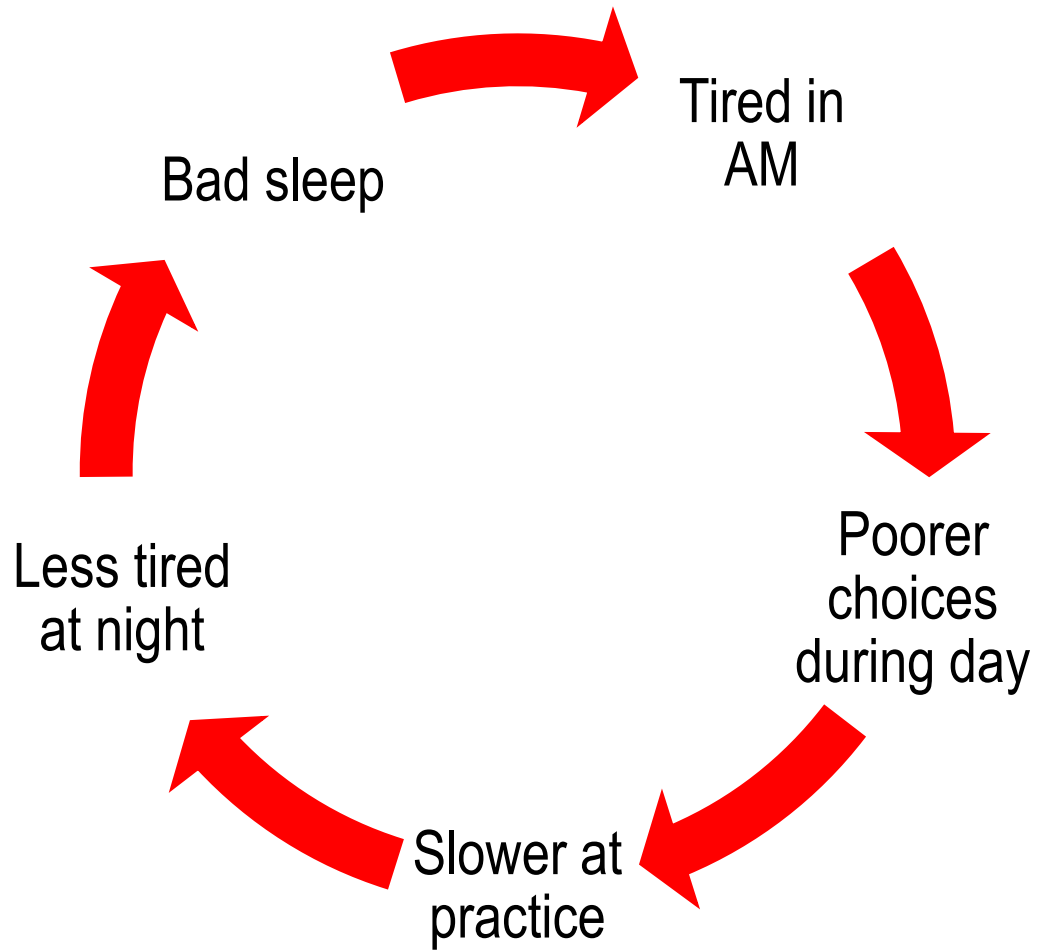
- Mood has the strongest negative response to Total Movements
 - Mood is the sum of the other stressors?
- Increase in body weight = increase in movements
- Nutrition has the strongest positive response to total movements
- As CNS improves so do the total movements
- As sleep quantity increases so to the total movements

GOOD CYCLE











Sleep Quality	Mood	Sleep Quantity	Nutrition

CYCLE OF DOOM



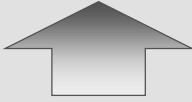


Sleep Quality	Mood	Sleep Quantity	Nutrition
↓	↓	↓	↓

CORRELATIONS (RELATIONSHIPS)

Sleep Quality	Soreness
	
Mood	RPE
	
CNS	Mood
	
RPE	Session Time
	

CORRELATIONS (RELATIONSHIPS)

Mood	Session Time	Total Movement (H/M IMA)
		

MANAGE

2013 Key Performance Indicators	2014 Adjustments
Sleep	Education
Soreness	~415% increase in massage/chiropractor funding
Nutrition	Enhance snack
Mood	Environment

MANAGE

2014 Key Performance Indicators	2015 Adjustments
Sleep	Education + Monitoring
Soreness	Increase # of massage during summer. Rearrange in season schedule
Nutrition	Dining Hall
Training volume and Inventory Totals	?

Be Proactive: Create a Buffer

- Start fast!
- Yearly trends
- Nutrition
- Soft tissue work
- Academics
- Create allies within the community
- Communicate

MANAGE COMMUNICATE: TEAM TALKS



mTOR vs AMPK

Sympathetic NS (FOF) ANS

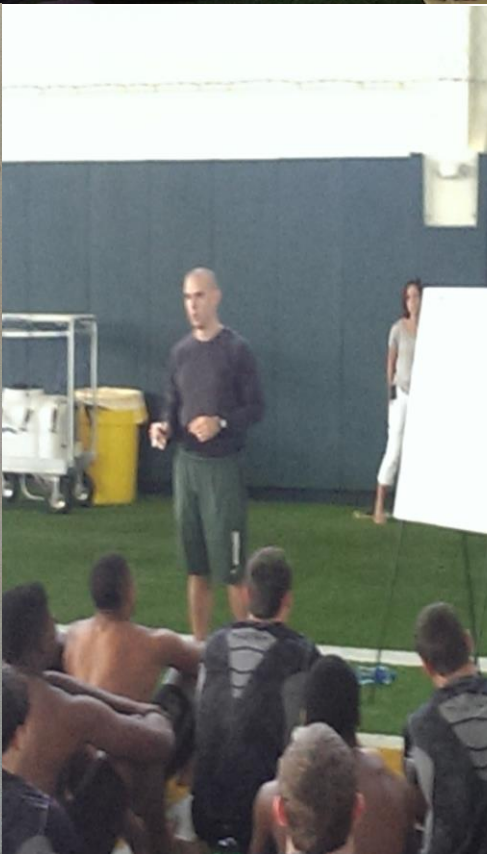
Parasympathetic NS (RHR) YOU

Ideal | Reality

* Baseline not the same for all

* Omega wave → Vagal tone → Vagus nerve brain stem

- ↳ controls HR
- ↳ signal ↑ HR ↓
- ↳ signal ↓ HR ↑
- ↳ .16-.41 ideal
- ↳ .32-.41 optimal
- ↳ primal reasons



ANAEROBIC THRESHOLD (AT) = HR WHERE YOU PRODUCE LACTATE FASTER THAN YOU CAN REMOVE IT = GLYCOLYTIC

	SKILL - 172	INT - 168	BIG - 164
ZONE 1 68% AT RECU	< 117	< 114	< 111
ZONE 2 68-84% AT RECOVERY/ CARDIAC OUTPUT	117-145	114-142	111-137
ZONE 3 84-100% AT AEROBIC DULPMT + MAINTENANCE	145-172	142-168	137-164
ZONE 4 100%+ AT	172+	168+	164+

SK INT BIG

ALACTIC = MONSTER TRUCK



AEROBIC = PRIUS



- Good = Efficient, Recycling system for Alactic
- Bad = Lack of power

MANAGE
COMMUNICATE: TEAM TALKS



MANAGE COMMUNICATE: TEAM TALKS



#BUB

**This is what
DETERMINATION
looks like.**



**MANAGE
COMMUNICATE:
SPORT PSYCH**

TAKE A BREATH



ONE REP AT A TIME

THE STANDARD




MANAGE

COMMUNICATE: FRESHMAN MANUAL

- **The Bear Way**
- **Mental Development**
- **Habits**
- **Being a Bear**
- **Staying a Bear**





MANAGE




COMMUNICATE: RECORD KEEPING




Thursday -				Friday -			
PRE-LIFT				PRE-LIFT			
Gather metrics (Intern - Mike Armilo)				Gather metrics (Intern - Mike Armilo)			
Take Bodyweight (Nutrition department)							
6:15AM TRAINING SESSION:				6:15AM TRAINING SESSION:			
GET BODY WEIGHTS				WARMUP			
WARMUP				CONDITIONING:			
JUMP RUDIMENT (5YDS EACH)				INT/SKILL - 5x300 yds			
COMBO AGILITIES (1 rep only - 60-70%) - cart/bpt/cart/str							
STRETCH							
STATIONS (VETS)							
ROTATION 	STATION	COACH	START GRP	POSITION	TIME (SEC)	COACH	
	SPEED MECH	HILL	1	Off. Skill	55	Tamp	
		<i>ankle/leg, Curb/pt/str</i>		Def. Skill	55	Hill	
	FLYING 10's	TAMP	2	Off. Int	60	Waltr	
		<i>(w/20 yds wild, 20 yds drill) 2</i>		Def. Int	60	Ruf	
	SHORT AGILITY	CHARLES	3	DL/OL	DL-65, OL-70	Taylor	
	<i>Shock, Mback</i>		START/TIME		Kazadi/Ozzenheimer		
	<i>Early/L only/5k-Cor</i>		***FRESHMEN AND DE OR THOSE OL/DL WHO MISSED TO MANY OF PREVIOUS FRI 300r WILL RUN INSTEAD OF SLED AGAIN THIS WEEK				
SCRAMBLE UPS	CATON	4	OL	DL			
	<i>10 yds 2 (off movement)</i>		HILLIARD	BROOKS?			
FLOAT	KAZADI, RUF, ALTHOFF		MCGOWAN	EZELL			
FINISHER:				OL/DL - WOOD SLED PUSH			
Half Gazzers x 4				2x60 yds, 2x45 yds			
CONDITIONING ONLY (FRESHMEN)				4 push/3 ride - 3pt2r - 2pt1r			
	Tompa Run (Lang)	NELSON	3x4	SLED	LANE	COACH	
STRETCH				1	1	Caton	
LIFT:				2	2	Althoff	
BREAKDOWN:	Lower Empharic			OL	DL	OUT	
				ARMSTEAD	BLACKSHEAR?	BAKER	
				COLBERT	VALDEZ	DRANGO	
				EARNEST	MASUMBUKO	MAGEE	
				FULLER		NANCE	
				HUBER?			
				OSEI			
				PALMER			
				RICHARDSON?			
11:45AM STAFF LIFT (+B. TRAHAN & P. KENT - 1AM CLASS)				STRETCH			
				FOR A BEAR BY A BEAR: MASTERY - PUNT RETURN (LEVINORWOOD)			
2:00PM TRAINING SESSION (FRESH):				LIFT:			
WARMUP (Full)				Upper Empharic			
LIFT				BREAKDOWN:			
				Nutrition - Tip for the weekend (win on the weekend) - Haqan			

MANAGE COMMUNICATE: CHEAT SHEETS

	Caution 	Optimal 	Caution 	Alert 
	"Not enough"	"Ideal"	"A little high"	"Very high"
Defensive Line	Player Load	<265	265-465	465-565
	*Player Load/yards	<10	.10-20	.2-3
	High & Med Acc/Decel	<60	60-80	80-95
Linebackers	Player Load	<350	350-550	550-650
	High and Medium COD	<110	110-155	155-180
Secondary	Player Load	<350	350-550	550-650
	High and Medium COD	<75	75-150	150-175
	*Explosive Distance	<100	100-140	140-170

	Caution 	Optimal 	Caution 	Alert 
	"Not enough"	"Ideal"	"A little high"	"Very high"
Offensive Line	Player Load	<225	225-425	425-525
	*Player Load/yards	<10	.10-20	.2-3
	High & Med Acc/Decel	<60	60-80	80-95
QB/RB/TE	Player Load	<300	300-500	500-600
	High and Medium COD	<90	90-145	145-170
WR	Player Load	<350	350-550	550-650
	High and Medium COD	<75	75-150	150-175
	*Explosive Distance	<110	110-150	150-180


	Optimal 	Caution 	Alert 
Defensive Line	BW:	3 <-> 0	0 <-> -2
	Wellness:	5-9	10-14
	Soreness	1-2	3
Linebackers	BW:	3 <-> 0	0 <-> -2
	Wellness:	5-9	10-14
	Soreness	1-2	3
Secondary	BW:	3 <-> 0	0 <-> -2
	Wellness:	5-9	10-14
	Soreness	1-2	3

	Optimal 	Caution 	Alert 
Offensive Line	BW:	3 <-> 0	0 <-> -2
	Wellness:	5-9	10-14
	Soreness	1-2	3
QB/RB/TE	BW:	3 <-> 0	0 <-> -2
	Wellness:	5-9	10-14
	Soreness	1-2	3
WR	BW:	3 <-> 0	0 <-> -2
	Wellness:	5-9	10-14
	Soreness	1-2	3

MAXIMIZE





An aerial photograph of a railway track crossing. The tracks are made of metal rails and wooden sleepers, set on a bed of gravel. The tracks cross each other in the center of the frame, with one track passing over the other. The surrounding area is a mix of gravel, dirt, and some sparse green vegetation.

**The
greatest
power
that
a
person
possesses
is
the
power
to
choose.**

– J. Martin Kohe

A problem has been detected and windows has been shut down to prevent damage to your computer.

SYSTEM_SERVICE_EXCEPTION

If this is the first time you've seen this stop error screen, restart your computer. If this screen appears again, follow these steps:

Check to make sure any new hardware or software is properly installed. If this is a new installation, ask your hardware or software manufacturer for any windows updates you might need.

The Future . . .

Technical information:

*** STOP: 0x0000003B (0x00000000C0000005, 0xFFFFF97FFE8D1231, 0xFFFFFADF16715200, 0x0000000000000000)

*** ativvaxx.dll - Address FFFFF97FFE8D1231 base at FFFFF97FFE8B3000, DateStamp 4e31d434

Beginning dump of physical memory

Physical memory dump complete.

Contact your system administrator or technical support group for further assistance.



First.

Meaningful.

Touch.

People **NOT** Cattle







FIND YOUR 1%

FIND YOUR 1%



TED



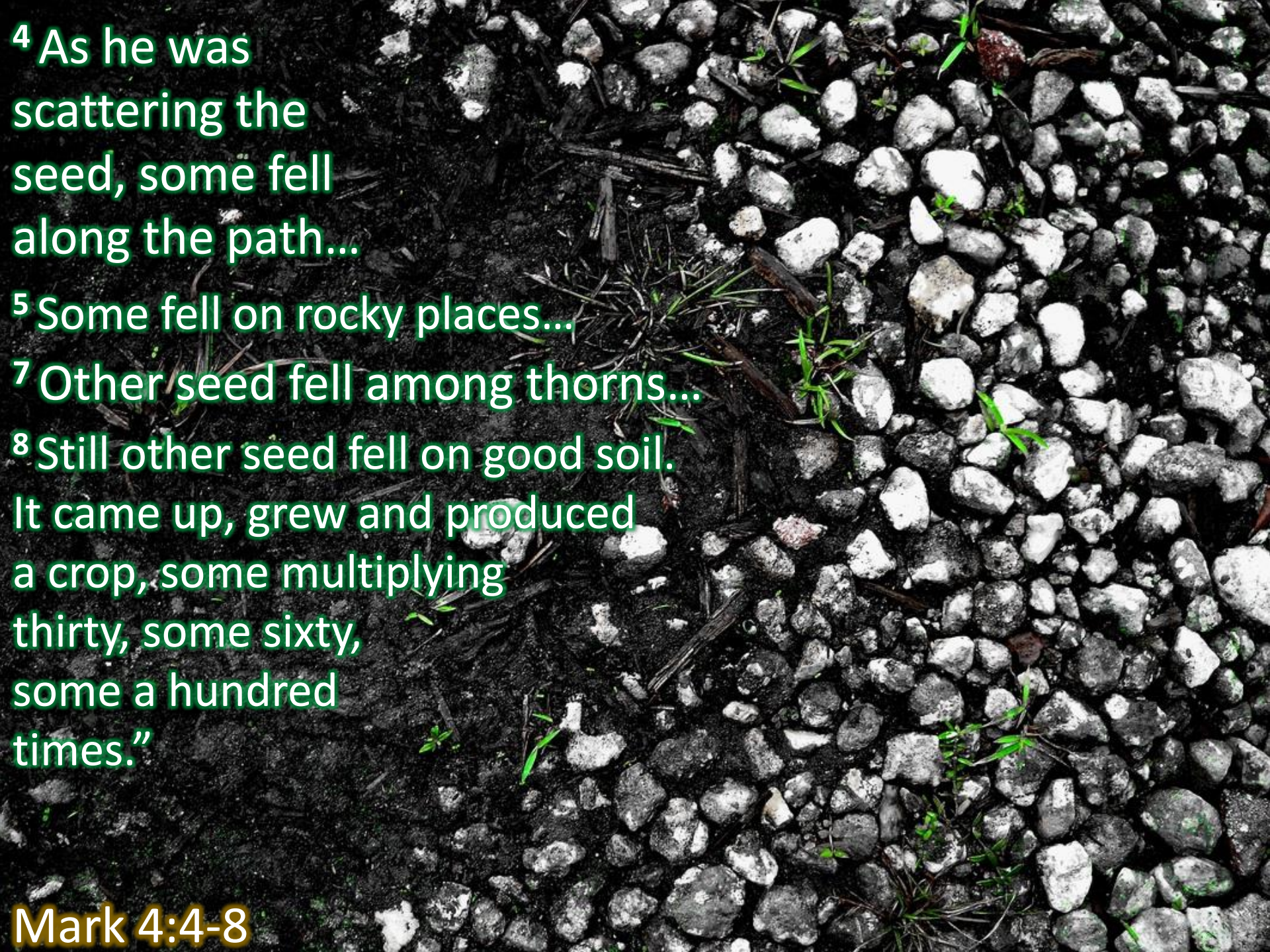
HOSPITAL FOR SPECIAL SURGERY



Catapult.



elitefts



⁴ As he was scattering the seed, some fell along the path...

⁵ Some fell on rocky places...

⁷ Other seed fell among thorns...

⁸ Still other seed fell on good soil.

It came up, grew and produced a crop, some multiplying thirty, some sixty, some a hundred times.”

Mark 4:4-8



Kaz Kazadi



Chris Ruf



Andrew Althoff



Keith Caton



Candice Walls



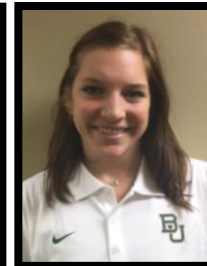
Tony Randolph



Josh Nelson



Cade Carnett



Bailee Begnoche



John Griffin



Jose Rodriguez



Nelson Ehirim

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