

A background image of an Ultimate Frisbee game. A player in a white jersey is in the foreground, jumping to catch a white frisbee. Another player in a dark jersey is jumping behind him, also reaching for the frisbee. The background shows a grassy field and a blurred crowd of spectators in bleachers.

Analyzing Passes in Ultimate

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What's to come?

- Ultimate basics
- Related research (loosely)
- Gathering the data
- Statistics summary
- Discussion (visualizations, analysis notes)

Ultimate 101 – the movie

- Thanks Mike Bell, Lance Larson, and Brad Holmes at ultimatefrisbeevideo.com
- Roles
- Offense & defense
 - In here: Offense
 - Note: only passes, no dribbling!

Related research

- Notational analysis, statistics
 - Baseball!
 - Basketball on paper by Oliver
- Network analysis aspect, examples
 - Network Analysis of Basketball Passing Patterns (Reifman 2005)
 - EURO 2004 passing networks data available (Molina, 2004)
 - Structural analysis of a soccer game (Gould & Gatrell, 1977)

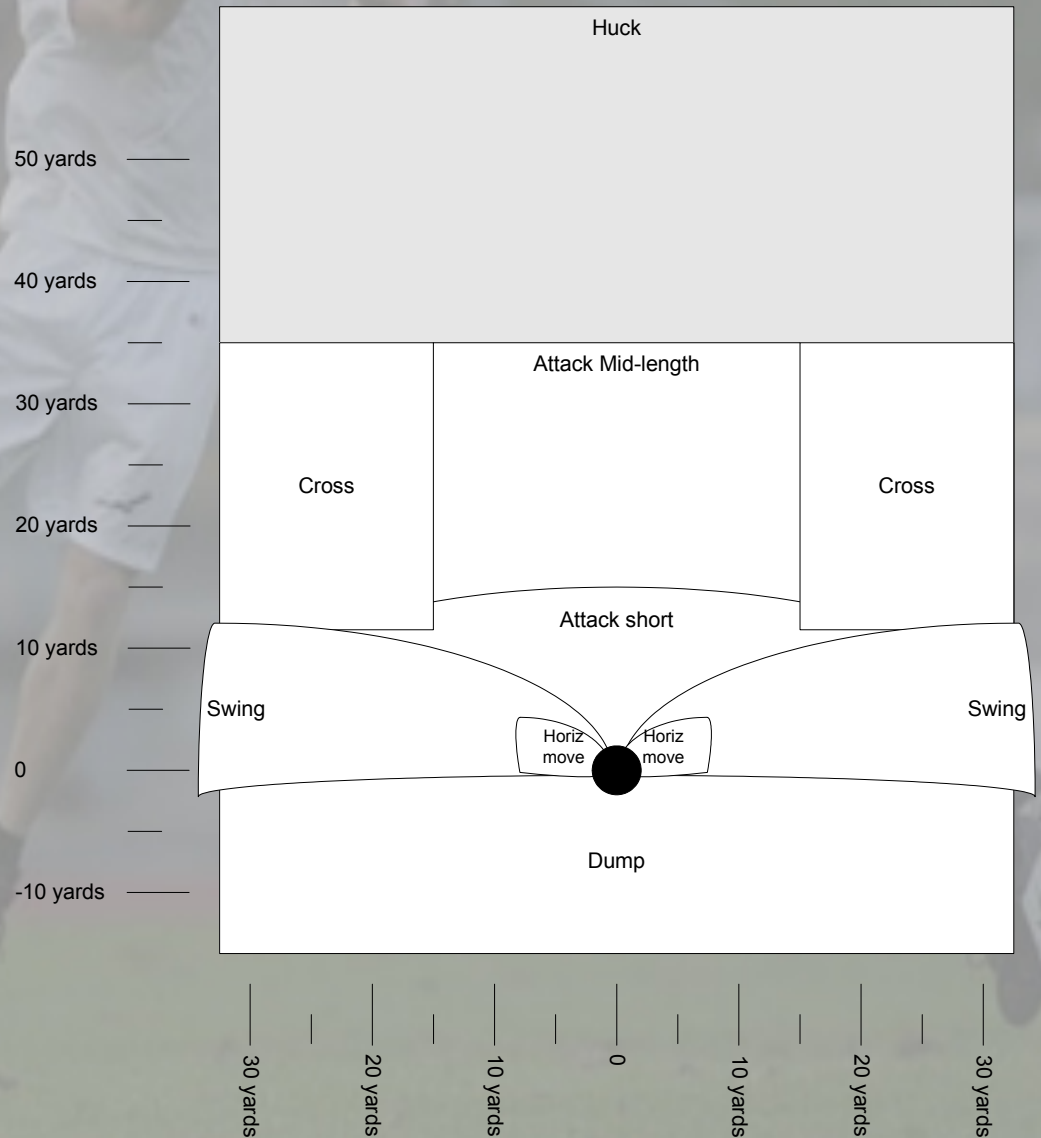
Data gathered

- Lineups (squads) for the studied teams
- Touches -> passes, pass types and possession result
 - Also intended receiver (turnovers)
 - For opposing team: pass types and results only
- Not coded
 - Stall count, time-outs, fouls, game clock...

Example datasheet

	D	E	F	G	H	I	J	K	L	M	N	O	P		
					Touches-FG		Score	Touhces-SBC		Condors lineups					
	Ortiz	Savage	Wood	Woodridge	Savage	a	0-1			Bogle	Cameros	Cascino	Fiske	Hus	
					Cruickshank	s									
					Lugsdin	d									
					Ortiz	s									
					Savage	h									
					Cruickshank	block									
									Yarborough	a					
									Husak	m					
									Cascino	d					
									Namkung	m					
									Fiske	a					
									Cascino	l					
									Namkung	m					
									Cascino	goal					
	Ortiz	Roberts	Savage	Woodridge	Savage	a				Cameros	Cascino	Husak	Namkung	Nicl	
					Cruickshank	s									
					Alexander	a									
					Lugsdin	h									
					Cruickshank	block									
								Yarborough	d						
								Husak	a						
								Seidler	a						
								Cascino	d						
								Seidler	s						
								Husak	a						
								Cascino	s						

Pass types



Possession results



- Goal
- Turnover
 - Drop
 - Throwaway
 - OB
 - Block
 - Marker block
 - Stall count 10
 - Other turnovers

Games

- 4 Stanford games in a sectional tournament (Stanford only) - audio
- Women's division final in 2004 WUC: Can-Fin (Finland only) - DVD
- Open division final in 2004 WUC: Can-USA (both teams)- DVD

Can you identify the players?



Stanford games

- Lopsided games
 - Makes analysis quite hard

	Stanford	UCSC-B	Stanford	LPC	Stanford	Davis-B	Stanford	Berkeley
Goals	13	3	13	1	13	3	13	3
Turnovers	3	12	13	24	7	16	6	15
Possessions	16	15	26	25	20	19	19	18
Scoring efficiency %	81.25%	20.00%	50.00%	4.00%	65.00%	15.79%	68.42%	16.67%
Starting on offense, score on 1st try	4	2	2	0	2	2	2	3
Starting on defense, score on 1st try	7	0	4	0	9	1	6	0
Scoring without turnovers, total	11	2	6	0	11	3	8	3
Total number of passes	69	36	136	77	83	58	165	78
Avg.passes per possession	4.31	2.40	5.23	3.08	4.15	3.05	8.68	4.33

Stanford: Some notes

- Some zone defense by opponents (no. of passes!)
- Checking the consistency over multiple games
 - Neither lineups for the game nor passing patterns from previous game explain the variability

Women's final

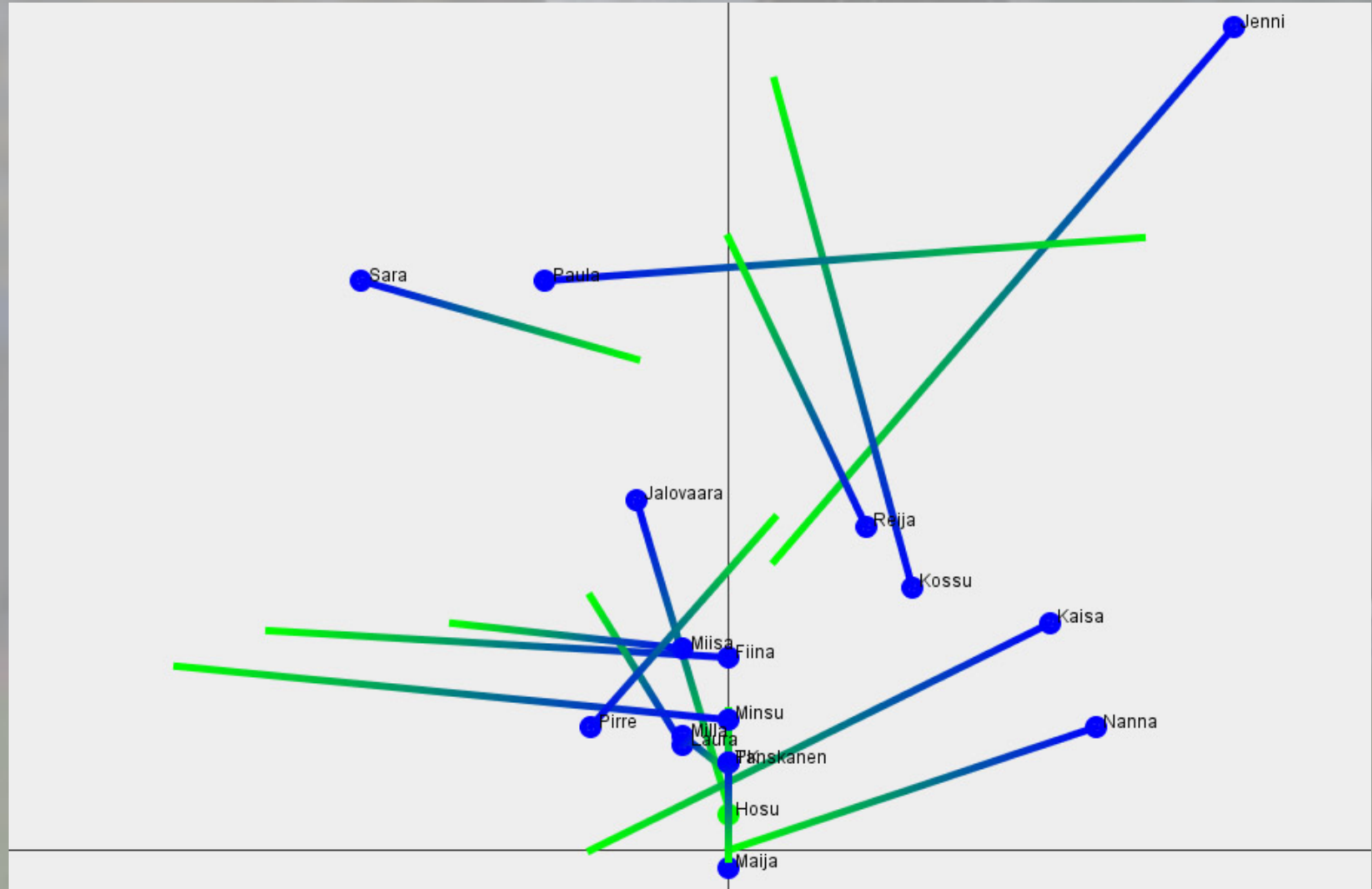
- Can – Fin: 17 – 13

	Canada	Finland
Goals	17	13
Possessions	44	43
Efficiency (Goals / Poss)	38.64%	30.23%
Passes	243	222
Avg Passes / Possession	5.52	5.16
Goals with one possession / Offense	4	4
Goals with one possession / Defense	4	2

Can-Fin: Some notes

- Mostly man defense
 - Finland used transition defense to prohibit Canada to run set plays
- Finland: collection of players from different club teams
 - Lineups not along team borders

Individual Offensive Rating



Open final

- Can – USA: 14 – 12
- Time-capped (a lot of stoppages)

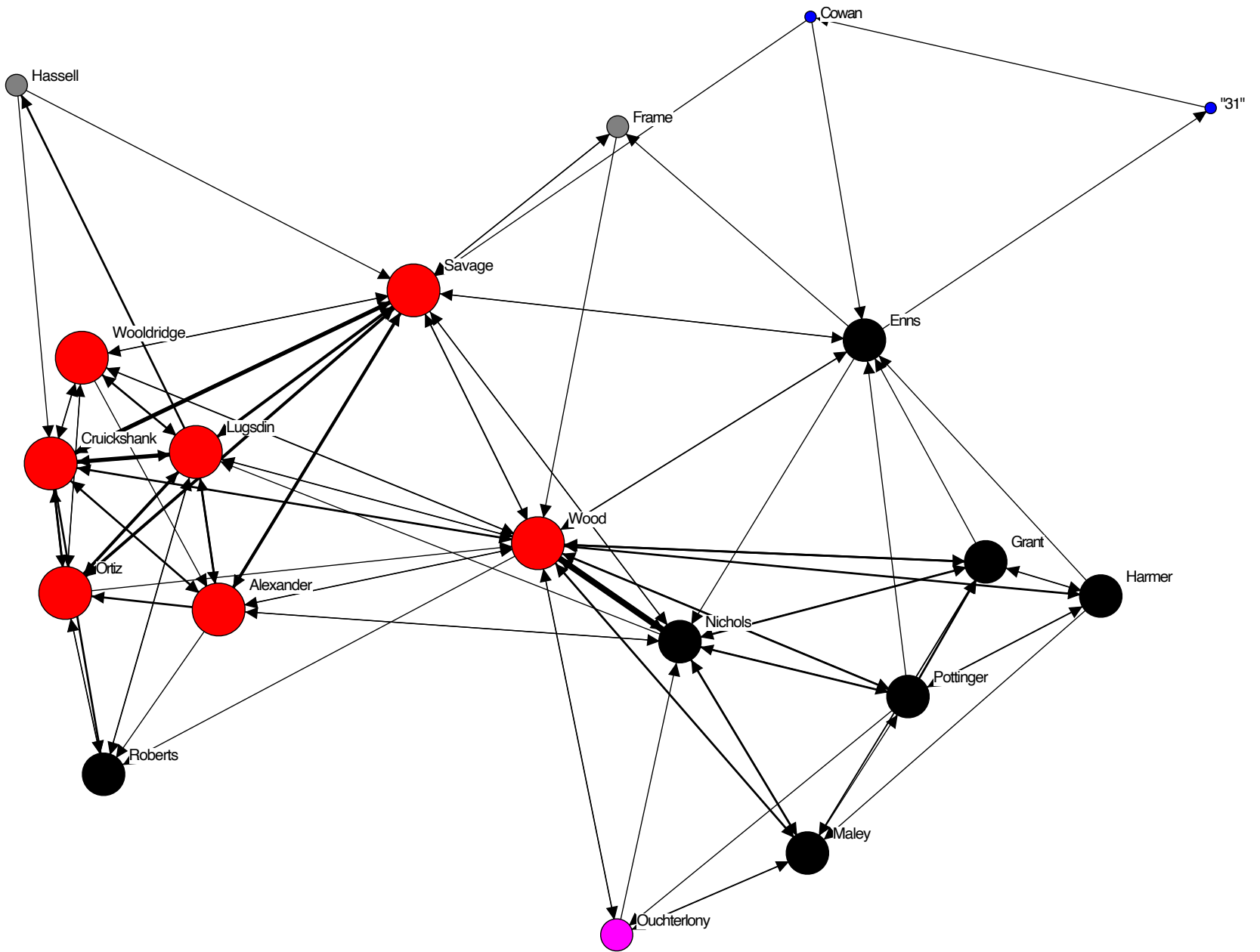
	Furious George	Santa Barbara Condors
Goals	14	12
Number of turnovers	11	12
Possessions	25	24
Scoring efficiency	56.00%	50.00%
Starting with offense, score on 1st try	7	6
Starting with defense, score on 1st try	5	3
Scoring without turnover, total	12	9
Total number of passes	234	164
Avg. passes per possession	9.36	6.83

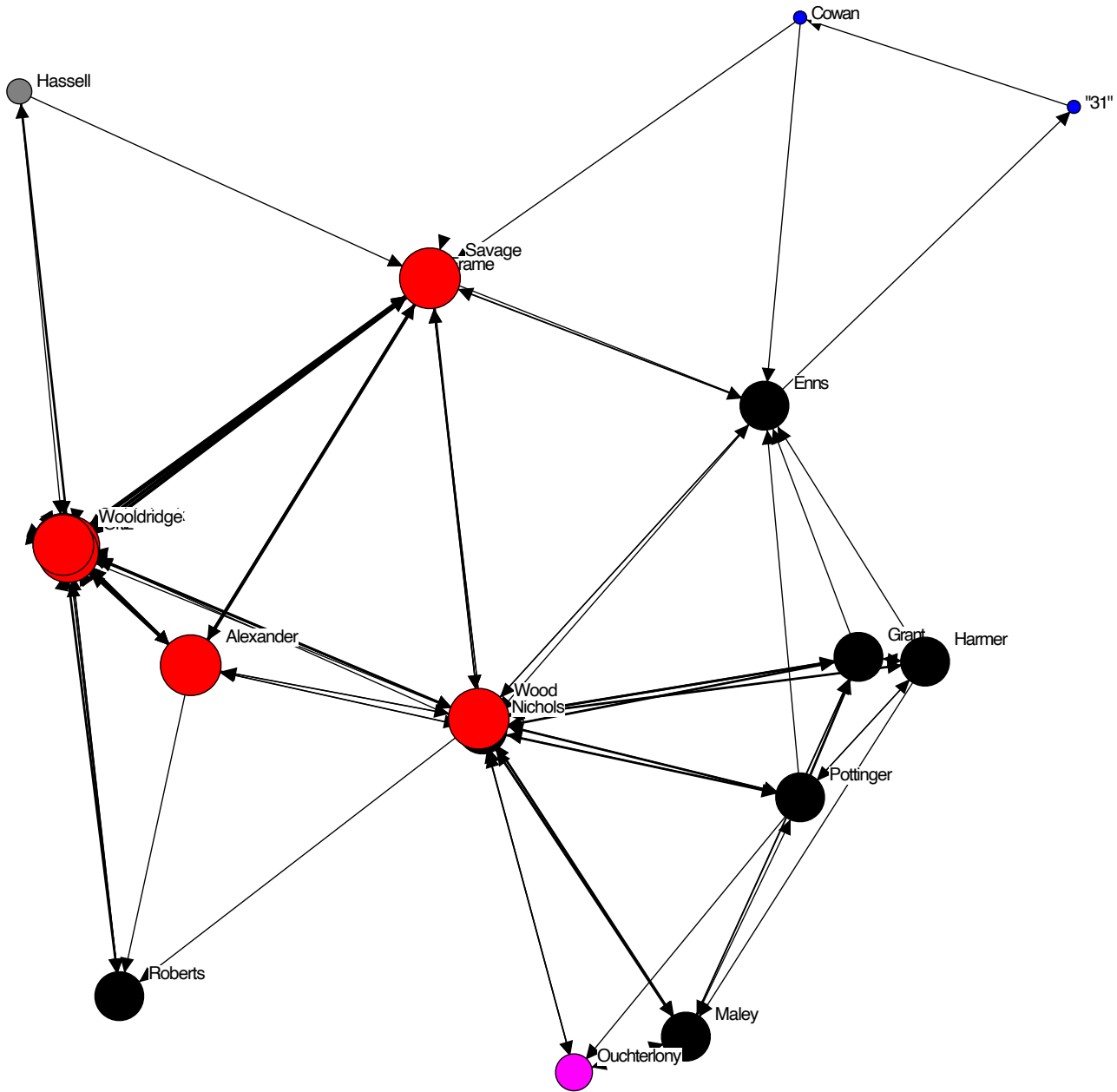
Can-USA: Some notes

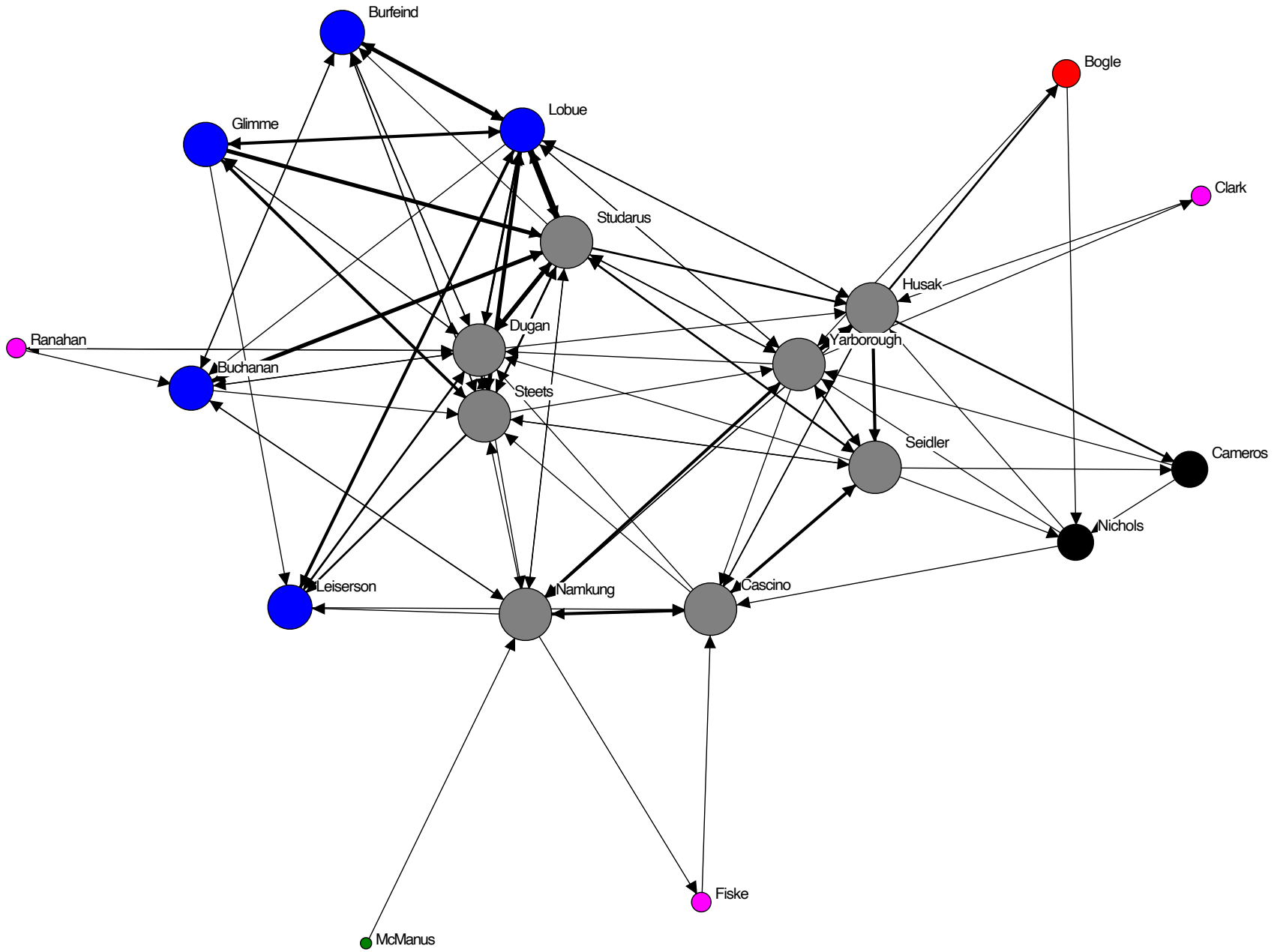
- All man defense
- Unique substitution mechanism for USA
- USA's style is more run-n-gun
- Canada has long hucks mostly on set plays
 - Otherwise waiting for the opportunity

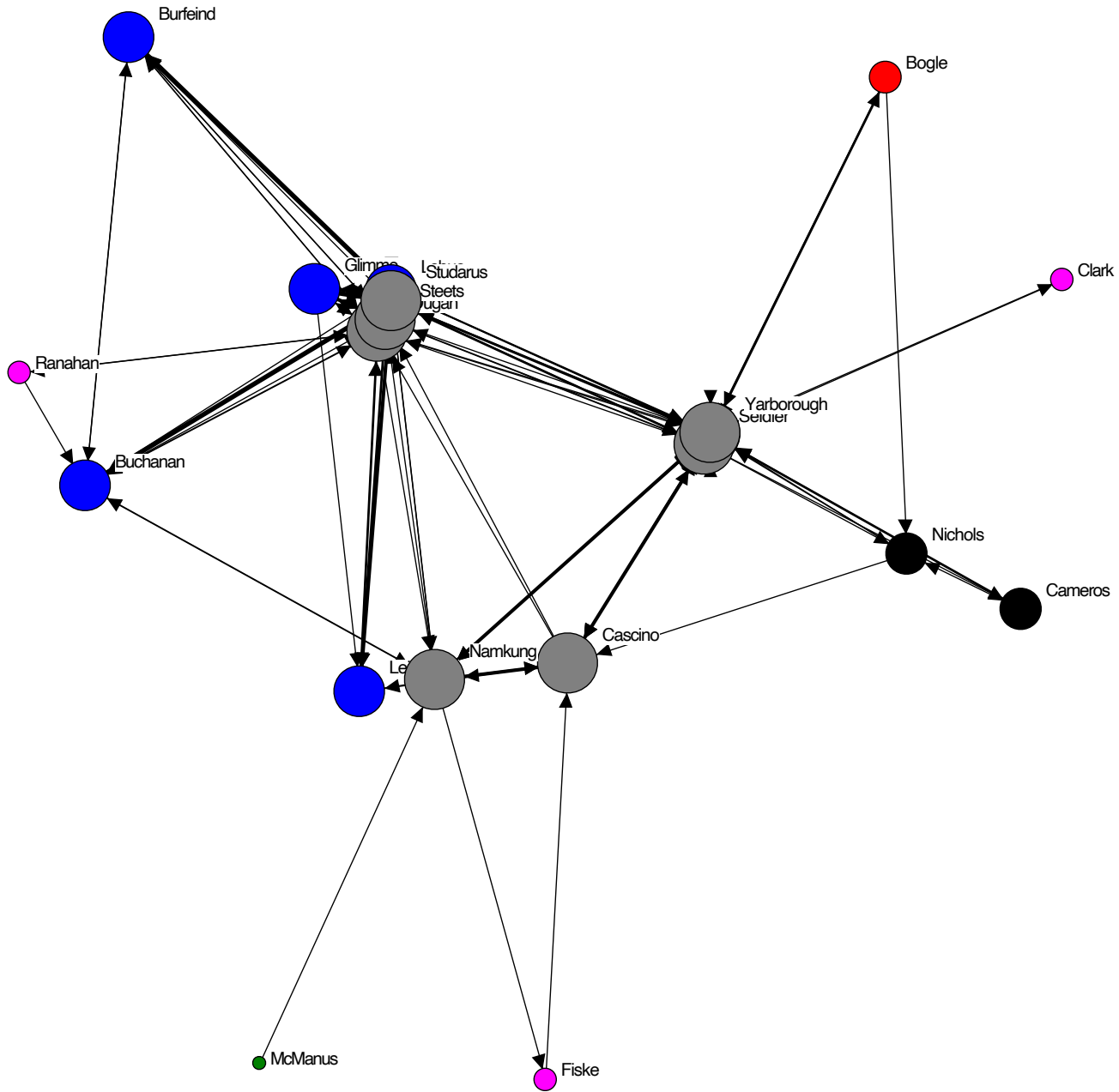
Some visualizations

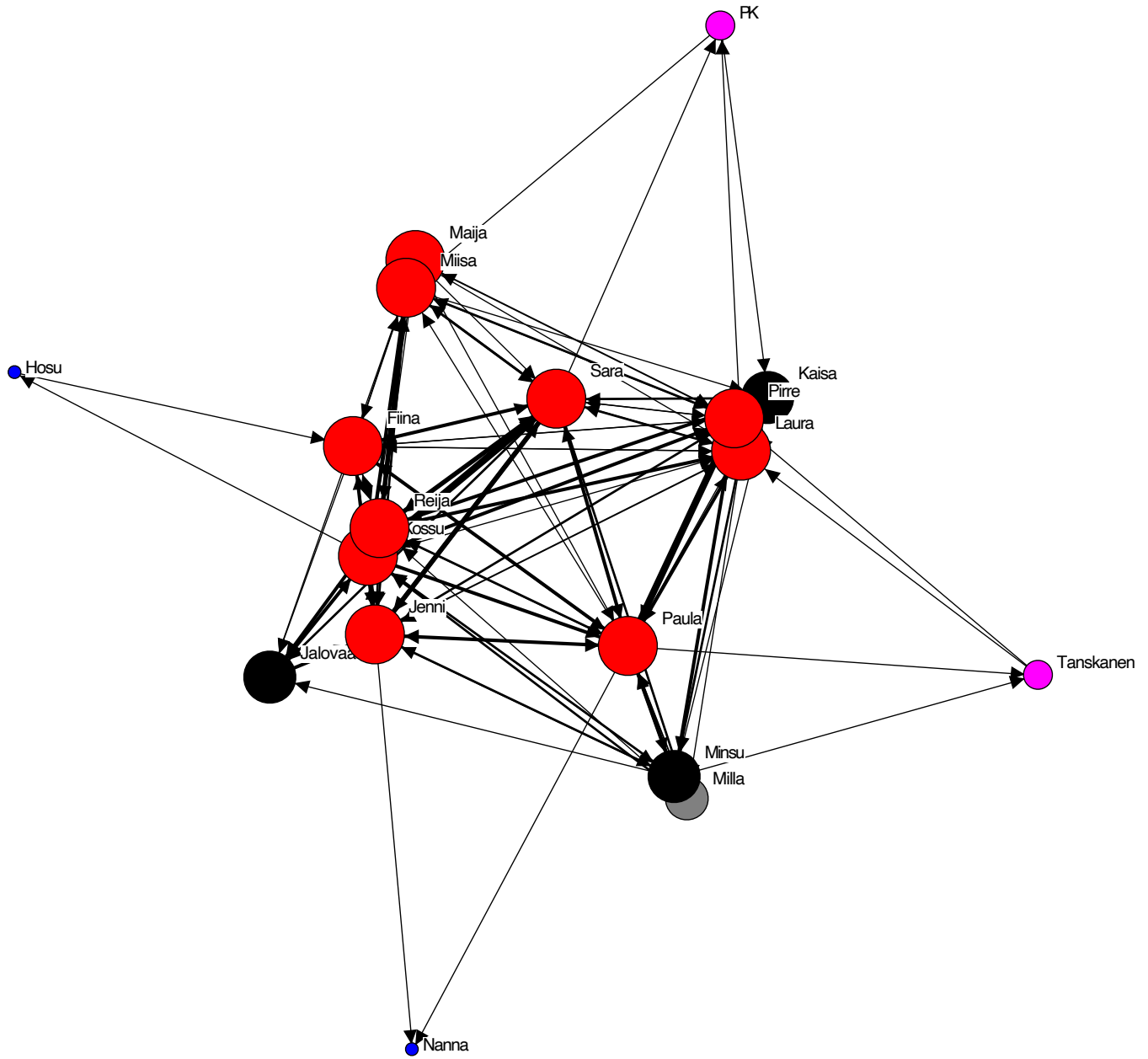
- SoNIA movie of Finland's possessions
- All passes Can & USA - Spring
- All passes Can, USA & Fin (W) - MDS











Some random notes

- Dichotomized indegree vs. outdegree (different players)
- Offense – defense lineups create quasi-cliques
 - Most central player seems to be the one playing in both lineups
 - Although the most central offensive player might play offense only

What's missing



- Predicting goals & turnovers
 - Might be too small dataset
- Sequence analysis (WinTDA) of:
 - Players
 - Pass types
 - Players & pass types
- Diving deeper to the offensive details
 - Measuring the stall counts