

# Giant Killers

**Predicting March Madness Upsets  
by Isolating the Factors that Contribute  
to Early-Round Tournament Success and Failure**

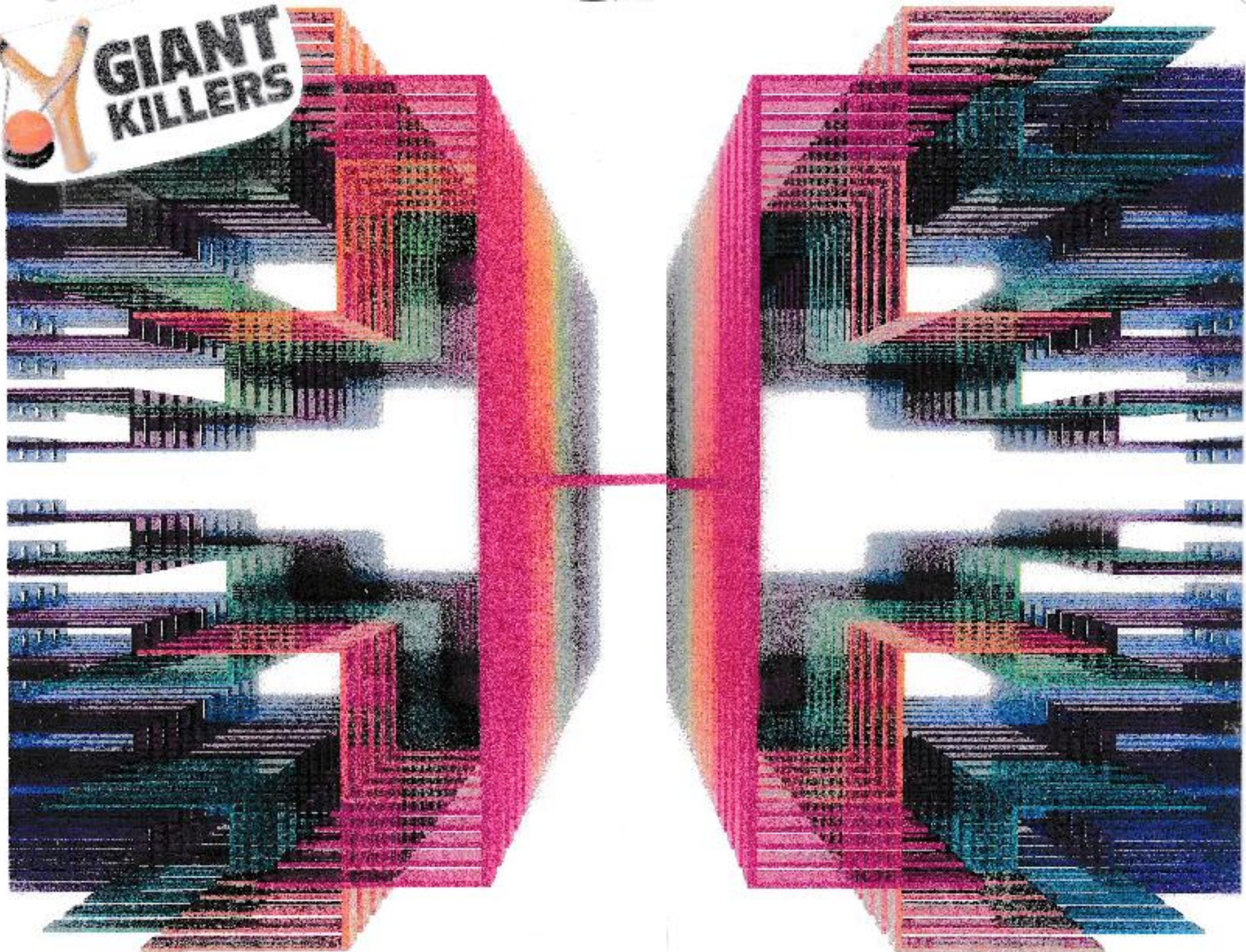
Jordan Brenner and Peter Keating  
*ESPN the Magazine* and ESPN Insider

Sloan Sports Analytics Conference 2014



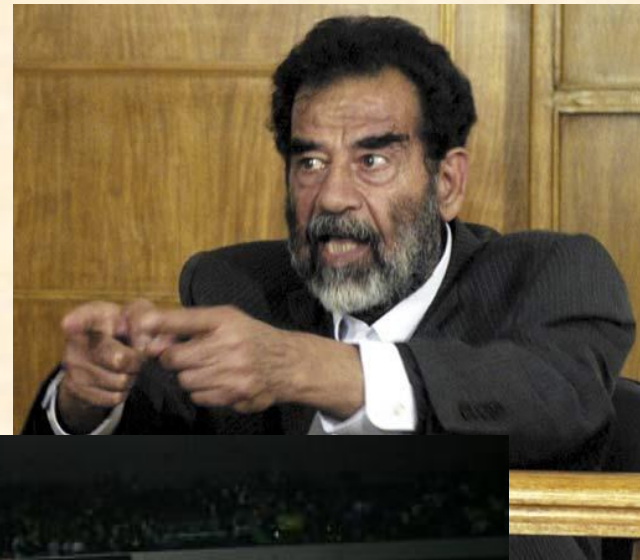
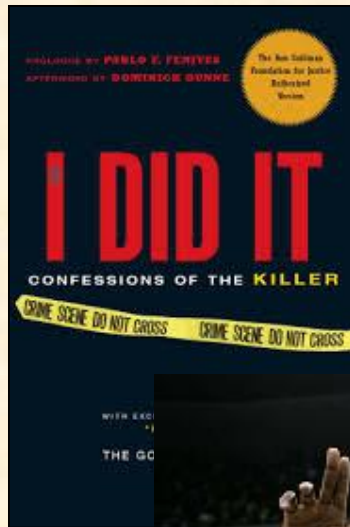


# GIANT KILLERS





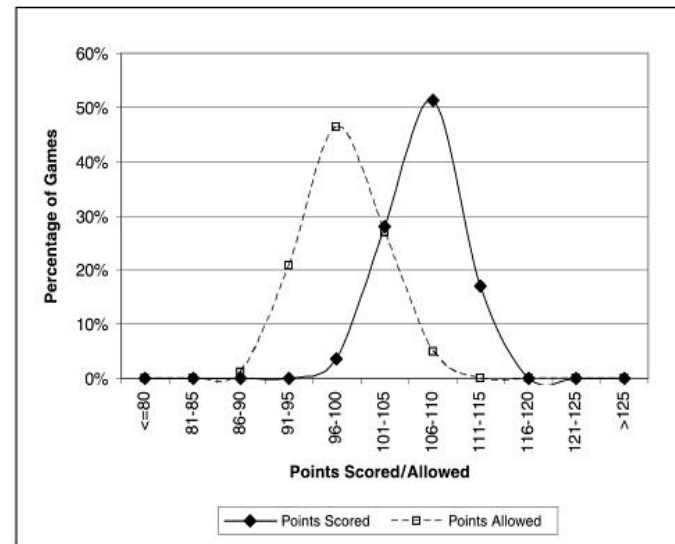
# Origins and Definitions ... 2006: A Big Year for Killers



Theory: Consistency helps favorites, variability can benefit underdogs  
Dean Oliver: idea (1991), online (1995), *Basketball on Paper* (2004)



Figure 11.5. Falsely Consistent Utah Scores (79-3)



Copyright 2004

# Two ways to slay a Giant



# Regression analysis showed value of high-risk/high-reward play

Early triumphs:

- Cleveland State, 2009
- Cornell, 2010
- Old Dominion, 2010





## VCU, 2011: The complete package



"I do think that our style of play is very good for the postseason, and I think it can be tough to prepare for, and I think it can create certain scenarios on the court that maybe teams aren't used to seeing as much."

**"Now, it's more risky. It takes a level of control out of your hands as a coach sometimes, but that's okay with me."**

## Traits common to vulnerable/safe Giants, too



Georgetown: the worst Giant ever



## **Different years have different patterns**

- 2010: Lots of good underdogs
- 2011: Chalk
- 2012: Vulnerable Giants

## **2013: We revamp the model**

- Ongoing conference re-alignments
- Increasing parity, dispersal of talent
- Want to distinguish mis-seedings from teams playing over/under their apparent skill level

## **Step 1: Basic Power Rankings**

SRS, with help in 2013 from Neil Paine

This year from John Harris, Kevin Hutson  
and Liz Bouzarth of Furman University

Lets us answer questions like:

- Who is the best team this year?
- Who was the worst 16-seed ever?
- What are the biggest NCAA tournament upsets?



year	opp	seed	killer_srs	team	seed	giant_srs	predicted	actual	diff
2011	VCU	11	9.1	Purdue	3	27.3	18.2	-26.3	44.5
2010	Cornell	12	13.2	Wisconsin	4	28.3	15.1	-29.3	44.4
2011	VCU	11	9.1	Georgetown	6	20.7	11.6	-28.0	39.6
2008	Davidson	10	19.7	Wisconsin	3	28.6	9.0	-29.4	38.4
2008	Siena	13	6.4	Vanderbilt	4	14.2	7.8	-30.1	37.9
2011	VCU	11	9.1	Kansas	1	32.5	23.4	-14.3	37.7
2010	Ohio	14	6.9	Georgetown	3	25.4	18.5	-19.1	37.6
2012	Norfolk State	15	-3.5	Missouri	2	28.2	31.7	-3.1	34.8
2013	FGCU	15	3.2	Georgetown	2	22.1	18.9	-13.1	32.0
2009	Cleveland State	13	12.3	Wake Forest	4	21.9	9.6	-22.0	31.5

## Step 2: Isolating the secret sauce for Killers and Giants

- Factors show Killers must take, Giants must limit chances
- Surprisingly unimportant: depth, experience, height
- Surprisingly negative: Giant reliance on free throws



## **Full model predicts upset chances based on similarities to past Giants and Killers**

Lets us break down matchups based on teams' fundamental strengths and their tendencies to play like historical vulnerable/safe Giants, successful/failed Killers.

Likeliest upsets:

- 2013: Minnesota over UCLA (79.0%!)
- 2012: VCU over Wichita State (56.5%)
- 2011: Marquette over Xavier (67.6%)
- 2010: Old Dominion over Notre Dame (67.3%)



# The double-edged slingshot ... and the peanut allergy



# The mongoose ... and the All-GK team



## Subjects for further research

- Assists
- Momentum
- Strength of schedule
- Belmont



## Lessons for 2014

Slim pickings for traditional Killers; upsets from:

- Vulnerable Giants
- Mis-seeds
- Conference tournament longshots
- Miracles

# Shaky Giants

- Arizona
- Creighton
- Iowa State
- Michigan
- Wisconsin

# Wounded Assassins

- Minnesota
- Oklahoma State
- Providence
- the SEC

## Mid-Major Cinderellas

- Boise State
- Louisiana Tech
- Southern Mississippi
- St. Mary's



# Deep Sleepers

- Stephen F. Austin
- North Carolina Central

**Jordan Brenner**

@jordanbrenner

Jordan.Brenner@gmail.com



**Peter Keating**

@PKStatsBlog

Peter.J.Keating@espn.com