



UNIVERSITY OF
NOTRE DAME

College of Engineering

Junior Parents Weekend
March 6, 2021

Dept. of Aerospace &
Mechanical Engineering

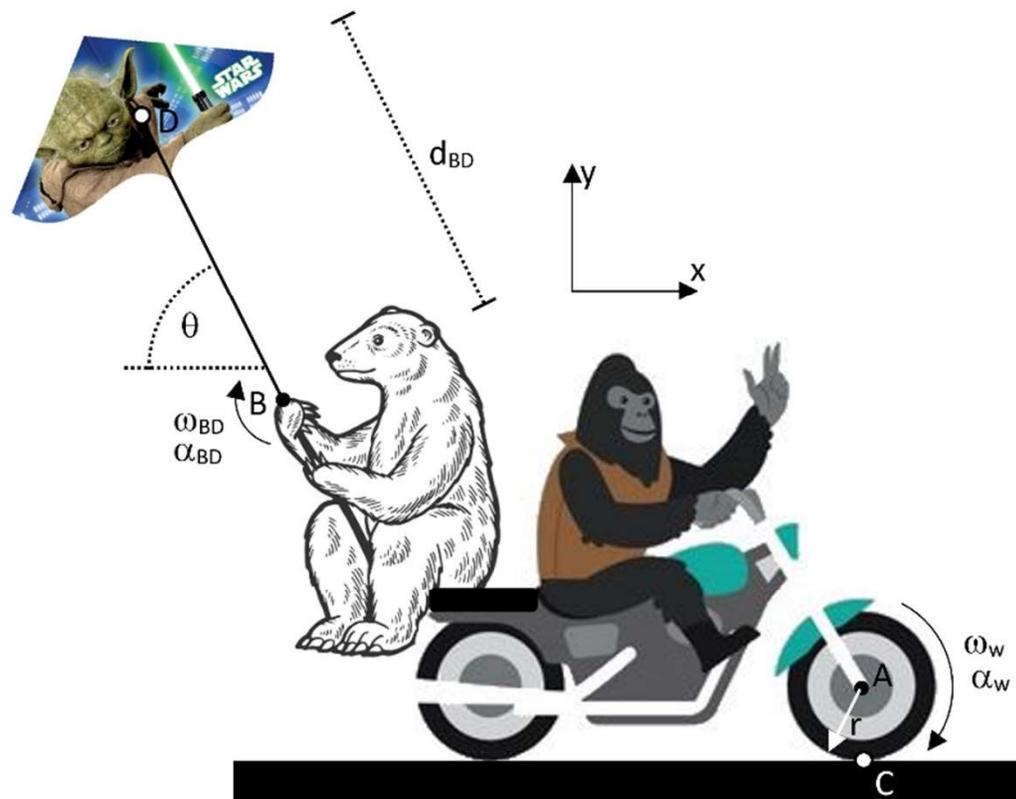
-- Prof. Mike Seelinger

What is it that you pay us to do to your children?

- We force them to solve problems like this in 25 minutes

1. (50 pts) The Gorilla and Polar Bear ride a motorcycle together while the Polar Bear flies a Yoda kite. **At the instant shown determine the acceleration of the kite, point D.**

- The motorcycle wheels roll without slipping.
- The front wheel has center point A and radius r. It has angular velocity ω_w and angular acceleration α_w in the direction shown.
- Point C is the contact point between the wheel and the ground.
- d_{BD} is the distance from the Polar Bear's hand B and the center of the kite D. This length is changing at a rate of \dot{d}_{BD} while \ddot{d}_{BD} is changing at a rate of $\ddot{\dot{d}_{BD}}$.
- The kite string from B to D may be treated as a rigid body. It currently makes an angle of θ with respect to the horizontal. It has angular velocity ω_{BD} and angular acceleration α_{BD} in the direction shown.
- The vector distances $\underline{r}_{B/A}$, $\underline{r}_{C/A}$, and $\underline{r}_{D/B}$ are provided for your convenience.



Possibly Important Parameters

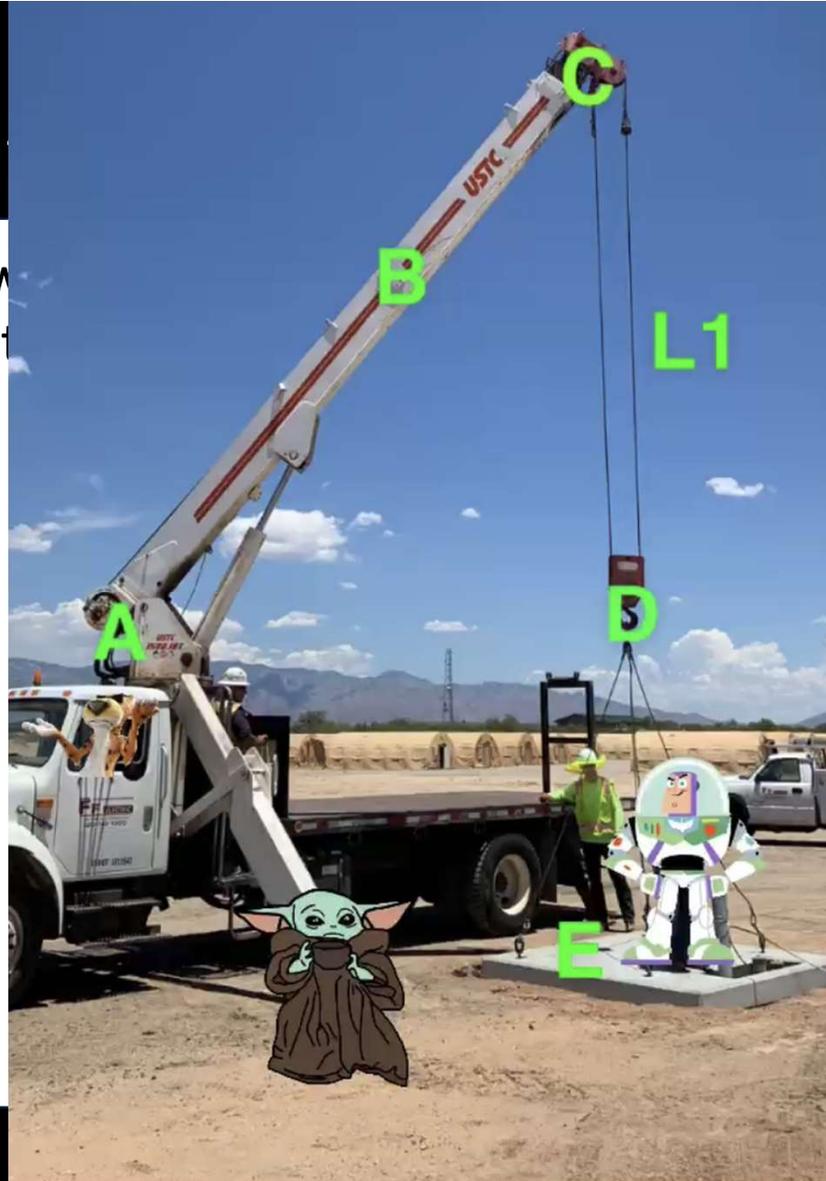
$r = 0.5 \text{ m}$	$\omega_w = 30 \text{ rad/s}$	$\alpha_w = 10 \text{ rad/s}^2$
$d_{BD} = 20 \text{ m}$	$\dot{d}_{BD} = 4 \text{ m/s}$	$\ddot{d}_{BD} = -2 \text{ m/s}^2$
$\theta = 55^\circ$	$\omega_{BD} = 1 \text{ rad/s}$	$\alpha_{BD} = 2 \text{ rad/s}^2$
$\underline{r}_{B/A} = (-2 \hat{i} + 1.5 \hat{j}) \text{ m}$	$\underline{r}_{C/A} = (-0.5 \hat{j}) \text{ m}$	
$\underline{r}_{D/B} = (-11.5 \hat{i} + 16.4 \hat{j}) \text{ m}$		

What is it that you pay us to do to your children?

- The end result is that when they are out in the real world solving real engineering problems they visualize this:

What is it that

- The end result is that we are solving real engineering problems



your children?

and solving real

Why did the students ask me to
talk at JPW?

Why did the students ask me to
talk at JPW?

Maybe they thought I would dress
up in a funny costume like they
can do for my final exams.

Why did the students ask me to
talk at JPW?

More likely it is because they
know I like telling stories in class.



Story time
with
Seelinger®



notredame:snaps
13m ago
DEBART



So I am going to tell you a few stories.

So I am going to tell you a few stories.

And hopefully pass on some wisdom.

So I am going to tell you a few stories.

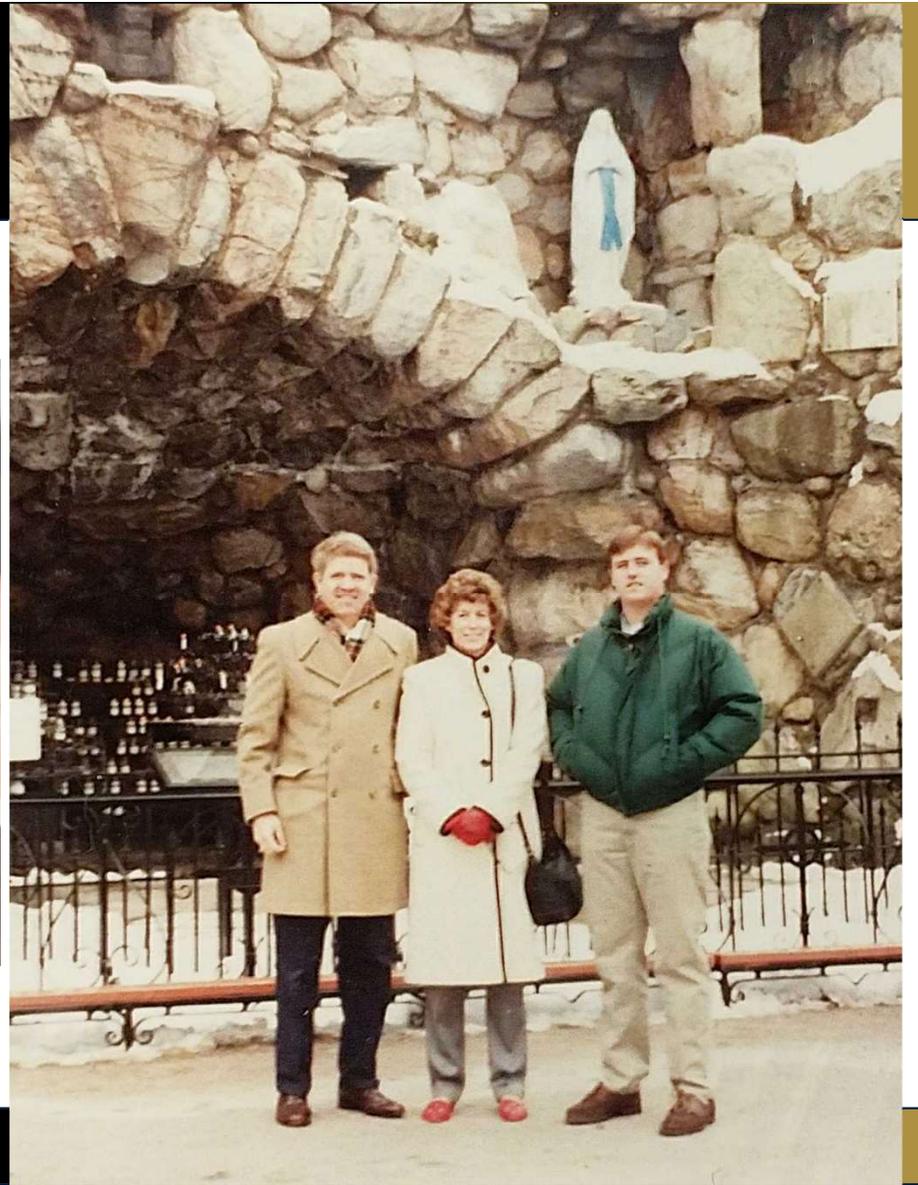
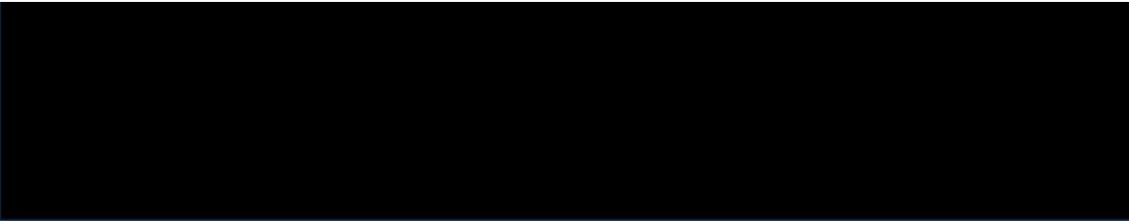
And hopefully pass on some wisdom.

And, if not, at least make you laugh.

Which stories to tell???

In considering what to speak about I did what any person should do:

- I hired a consultant
- No, seriously, I asked someone with wisdom for his advice: My Dad
- We reminisced about our Junior Parents Weekend and how special it was
- So, I thought I would focus, not on engineering stories, but on stories about relationships between children and parents



Story 1: Professor Kleenex

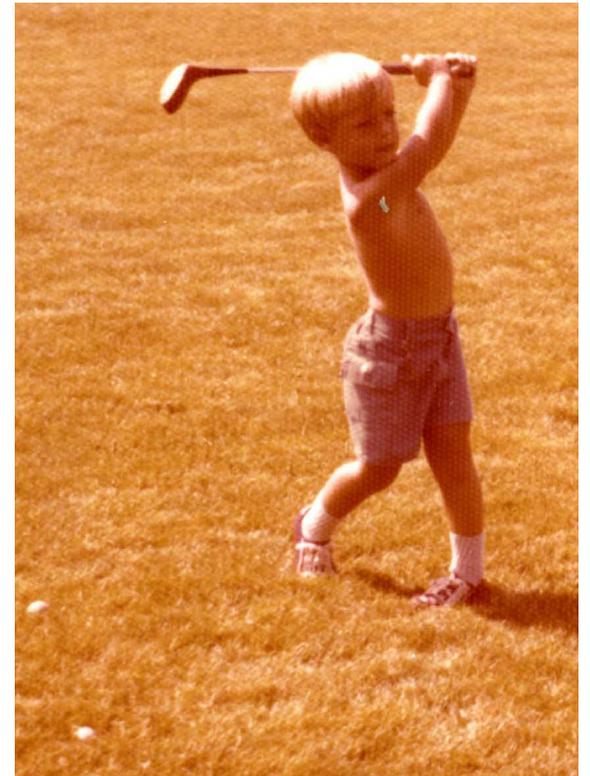


Story 2:

What is the Meaning of Golf?

What is the Meaning of Golf?

- I started playing golf when I was 3.



What is the Meaning of Golf?

- My Dad carried in his wallet this newspaper clipping detailing my 2nd place finish in the International Pee Wee tournament when I was 5.



Championship Form

Mike Seelinger of Elizabethtown displays championship form on the way to a second-place finish in the 3-5 year old boys division of the Pee Wee Golf Championships at Walt Disney World, Florida. Mike, the son of Mr. and Mrs. James L. Seelinger of 40 Sunrise Boulevard, shot a two-day, eight-hole total 34 over a shortened course. The oldest tournament in the country, the year's Pee Wee competition attracted 245 entrants from 14 states.

What is the Meaning of Golf?

- I won the International Pee Wee tournament when I was 8.



What is the Meaning of Golf?

- At times I had a love-hate relationship with golf.
- At times I felt pushed to play golf with my Dad.
- At times I did not enjoy golf because I was not friends with the people I played with and competed against.

What is the Meaning of Golf?

- I discovered the meaning of golf* when I was in my early 20s.

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- It involves beer.

What is the Meaning of Golf?



What is the Meaning of Golf?

- Golf is a means of communicating with my Dad.
 - He found it hard to ask the difficult questions in life.
 - After a round of golf we would talk over a beer. In these moments he was relaxed enough to open up.
 - Upon this realization it became essential to play golf with my Dad every time we visited because golf was more than golf.

What is the Meaning of Golf?

- Through these conversations our friendship deepened.
- I also realized that all those times I felt “pushed” to play golf with my Dad was not about becoming a better golfer. My Dad just wanted to spend time with his son.
- Now my Dad and I have a great friendship.

What is the Meaning of Golf?

What is the Wisdom I want to pass on to you?

What is the Meaning of Golf?

Drink beer after playing golf?

For deep friendships to grow
you must find a way to
communicate on a deep level.

Find ways to communicate with
your parents and children on
this deep level.

Story 3:

Making Your Bed

Making Your Bed

- When I was in college a group of friends visited my home (in Florida).
- My parents always enjoy company and were fantastic hosts.

Making Your Bed

- After the visit my mother raved about my friends.

Making Your Bed

- After the visit my mother raved about my friends.
- She raved a little too much.

Making Your Bed

- After the visit my mother raved about my friends.
- She raved a little too much.
- I got suspicious.

Making Your Bed

- After the visit my mother raved about my friends.
- She raved a little too much.
- I got suspicious.
- Then my mother hit me with a real jaw-dropper.

Making Your Bed

Mike: “What was so special about my friends?”

Making Your Bed

Mike: “What was so special about my friends?”

Long pause

Making Your Bed

Mike: “What was so special about my friends?”

Long pause

Mom: “They made their beds.”

Making Your Bed

Mike: “What was so special about my friends?”

Long pause

Mom: “They made their beds.”

Mike (trying to stifle a laugh): “So what, a lot of people make their beds every day.”

Making Your Bed

Mike: “What was so special about my friends?”

Long pause

Mom: “They made their beds.”

Mike (trying to stifle a laugh): “So what, a lot of people make their beds every day (including me).”

Making Your Bed

Mike: “What was so special about my friends?”

Long pause

Mom: “They made their beds.”

Mike (trying to stifle a laugh): “So what, a lot of people make their beds every day (including me).”

Mom: “Yes, but it made me feel loved.”

Making Your Bed

Mike: “What was so special about my friends?”

Long pause

Mom: “They made their beds.”

Mike (trying to stifle a laugh): “So what, a lot of people make their beds every day (including me).”

Mom: “Yes, but it made me feel loved.”

Mike: Jaw-drops, stunned silence.

We communicate love to
people in many different ways.

Making Your Bed

- Understanding that people communicate in different ways is also extremely important as an educator.
- It is our challenge to explain things in ways that each student will understand.
- This is the same talent that parents have had to develop in educating their children.

Making Your Bed

- This is a skill that will help you in whatever career path you follow.
- Work at understanding how to communicate best with each individual you work with.

Story 4:

My Usual JPW Gig

My usual JPW Gig

- For many AME classes, I have taught the students Mechanics I and Mechanics II during their entire sophomore year.
- I only had your children for the spring of 2020 in Mechanics II
- Usually before Christmas I assign them homework for the break:

Guys, invite your Moms on a date

Girls, invite your Dad on a date

My usual JPW Gig

- For many AME classes, I have taught the students Mechanics I and Mechanics II during their entire sophomore year.
- I only had your children for the spring of 2020 in Mechanics II
- Usually before Christmas I assign them homework for the break:

The real message is to make time to spend with each other one-on-one.

My usual JPW Gig

- It is wonderful to spend time in family as a group.
- Likewise, it is wonderful to spend time with a group of friends.
- However, I find that the most meaningful conversations take place in one-on-one settings.
- So, make time to spend one-on-one with the people you care about.
- Juniors, if you have younger siblings at home, make sure to do things one-on-one with each of them. They will find it very special!

My usual JPW Gig

- Juniors: Now that you are adults, you will find you can befriend your parents in ways you could not do when you were in high school.
- In one-on-one situations you can really get to know your parents and learn from their wisdom.
- Parents: Now is the time to befriend your children as adults.
- JPW was really the beginning of this for my parents and me.

My usual JPW Gig

- Oh, my usual JPW Gig Almost forgot

At JPW, when I meet parents, I ask them if their daughter or son did their assigned homework over break: to take their parents out, one-on-one on dates.

It is a wonderful reaction when moms get angry at their sons and ask why they were not invited out on dates.

In Conclusion

Concluding Remarks

- I am greatly honored and feel extraordinarily lucky to get to play a role in the lives of your daughters and sons during their time at Notre Dame.
- They are amazing people, clearly the fruit of amazing parents.
- The best part of my job is the building and maintaining relationships with all of my students.
- With Notre Dame alumni being so loyal, it is a real blessing to get to see them so often.

Concluding Remarks

- During Winter Term I taught a Career Development Course with my colleague Dr. Kerry Meyers
- We had many young alumni help out with the course by discussing their career paths, how they got there, and what advice they have for current students
- During each session I was so proud to see all the great things our students end up doing
- And it makes me even more proud to see their leadership qualities and spirit of service in wanting to help out the next generation of Notre Dame engineers

Concluding Remarks

FIRST & LAST NAME	COMPANY	Grad Year	FIRST & LAST NAME	COMPANY	Grad Year
Brenden Forte	Amazon (Dashcart)	2016	Matthew Romano	Kaufman Hall	2014
Bianca Jurewicz	Eli Lilly and Company	2019	Seamus Quilty	AbbVie	2016
Michael Thompson	Toyota Research Institute	2017	Danny Masse	Corning, Inc	2013
Joe Fulnecky	Allison Transmission Inc.	2018	Joe Driano	Boeing Company (Prev. Ford Motors)	2016
Rebecca Huber	Ford Motor Company	2018	Dave Rohrs	Apple	2014
Lauren McCulley	Lockheed Martin Space	2019	Kyra Twohy	University of Dayton (Biomedical)	2018
Dan McGlinn	TAIT	2018	Zack Woodruff	PhD Student, Northwestern U	2013
Rachel Wright	United Airlines	2014	Derek Wolf	Vanderbelt	2013
Bill Kennedy	NASA	2017	Matthew Chignoli	Massachusetts Institute of Technology	2019
Mike Ruof	Fiat Chrysler		Ryan McKeown	SAIC	2018
Noelle Gooding	Ford	2017	Samantha Wright	In-Q-Tel	2015
Laura Dillon	Bain & Company	2018	Eric Palutsis	ARCO/Murray National Construction Company	2015
Sydnee Mayers	Microsoft	2018	Collin Corcoran	LM Wind Power	2014
Jake Pellegrini	Boston Consulting Group	2014	Kevin Connor	Schneider Electric - Automated Logic - MBA	2015
Vince Sellner	Accenture	2018			