~600 students from 70 majors on campus

September 8, 2015
GOALS of the course...

- Introduce various aspects of **space**
- **Create connections** with major and interests
- **Inform career**
- Illuminate your **pathway to space**
Think Large Lecture Classroom...

How many of you have taught a large lecture course?
How many of you have taken a large lecture course?
What comes to mind?
- Big room
- No connection to the students?
- Mainly one way communication
- Boring!
Break the Mold...
I wanted...

• Students to **WANT** to come to class
• Content to be **RELATEABLE, CONNECTABLE, and REAL**
• Create multiple opportunities to **PARTICIPATE**
• Everyone to be a **PART** of the lecture/experience
• The lecture to be **LIVE and FUN**
• To have specific **Learning Objectives** for each lecture
I wanted...

- To use the **SENSES** (ears, eyes, feel – emotion evoked)
  - Music starts and ends every class (visuals too)
- **STORIES** – Essential to connecting to content
- **COSTUMES** – Coming out of the wall
- **DIFFERENT** lecturers for each topic
- **LECTURERS to WANT** to be a part of the class
So What is it? A course disguised as a show.

Students tend to forget they are in a class + friends...
Let’s go explore! Chris and our special guest will take us on a journey in time, space, or scale to a destination related to the day’s topic. Outstanding Transporter to go on a trip with us.!

Prior to the start of class, we’ll play a selection of space-related movies, music, etc. to get you in the right mindset for the day. We’ll hear from our special guest about something they find particularly compelling. Maybe you’ll be inspired to take on a new mission!

What questions do you have for our special guest? In your Pathway teams, you’ll prepare a series of questions before class. What creative twist can you apply to today’s topic? What is today’s surprise? Is it a hands-on demo, space-related snack, pop quiz, video capsule? In your Pathway teams, you’ll prepare a skit, a musical piece, an interpretive dance, etc. and bring the topic to life!

Materials and Application Performances: How have you conceptualized today’s topic? What connection can you make to your path? What is the future you envision? Just learn a lesson along the way! It’s okay to meander! It’s okay to fail! It’s okay to be inspired by what you see and hear.

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Class Structure

3:20 PM Welcome

Prior to the start of class, we’ll play a selection of space-related movies, music, etc. to get you in the right mindset for the day.

3:30 PM
A short introduction to class:
- Trail Mix - Chris reads "trail mix" comments and questions received from students. Your input and ideas matter! We want to hear from you!
- Day in Space - We hear about current events and happenings in space so we can make connections between class and real-world work and endeavors. Student led.

3:40 PM Your Path

It’s okay to mean-end! It’s okay to fail! Just learn a lesson along the way! Our special guests take the stage and we hear about their life, career, struggles, triumphs, and hopefully an embarrassing story or two.

3:50 PM MAPs

Student Teams Ask Renowned Specialists: What questions do you have for our special guest? In your Pathway teams, you’ll prepare a series of questions before class and then join our guests on the stage for a short interview. Student led.

4:00 PM STARS

Prepare a skit, a musical piece, an interpretive dance, etc. and bring the topic to life! Student led.

4:10 PM Connections

What creative twist can you apply to today’s topic? In your Pathway teams, you’ll prepare a video capsule, a musical piece, an interpretive dance, etc. and bring the topic to life! Student led.

4:20 PM Pathway Outstanding Transporter

What is today’s surprise? Is it a hands-on demo, space-related snack, pop quiz, game, visit from a guest? Stay engaged so you’re ready for anything that might come your way!

4:30 PM Future

What does the future hold? What are the next big challenges to tackle? We’ll hear from our special guest about something they find particularly compelling. Maybe you’ll be inspired to take on a new mission!

4:35 PM Surprise

Future

4:40 PM STARS

Dance, etc. and bring the topic to life! Student led.

Let’s go explore! Chris and our special guest will climb into the Pathway Outstanding Transporter to go on a journey in space, over a destination related to the day’s topic and/or the special guest’s research.

4:50 PM Connections

How is today’s topic connected to CU Boulder, you, and your major? Chris and our special guest will show us these connections and share how you can be a part of this exciting work.

4:55 PM Conclusion

We’ll get back to CU Boulder, you, and your major! How does today’s topic connect to your major? Chris and our special guest will show us these connections and share how you can be a part of this exciting work.

5:00 PM Wrap Up

End of class.

10
New and Unique Methods

- Video Capsules
- Show Format
- MAPs
- Countdown Clock
- STARS
- Aha Rockets
- Events
- Teams
- Pathway Outstanding Transporter
Aha Rockets:

- Making connections…
- Launch at any time (safely) at targets only
- Comment may be read during class
- All will be read after
- We will now practice
Secret to success…

Take the lecture out of the classroom
Video Capsules:

- **Pre-recorded**, ~20 minutes lecture content
- Watch **before class**
- **28 total**
- **Heart** of the content is captured here
- Allows for more engagement with material during class
- Does require students to **actually watch**
How are “2001: A Space Odyssey” and “Star Trek: Voyager” related to Homer’s story of Odysseus?

- Mankind has filled space with stories, and these stories build on each other.
- They are metaphorical odysseys of mankind.
- They become journeys of discovery and self-discovery.
- All of the above.
2018 Course Videos

Below is the course video content for Pathway to Space, filmed at CU Boulder with our contributing faculty and industry experts. Click on each video thumbnail to access the video and see attribution information for any images used. We hope that other educators use these videos for space-related teaching and learning experiences at CU Boulder and beyond!

*Pathway to Space* students:
Please refer to [D2L](https://d2l.colorado.edu) for the Video Capsule for each unit, which also includes the quiz you are required to complete for course credit.

1. Space and Wonder - Valerio Ferme
2. A Tour of the Cosmos - Erica Ellingson
3. Astrophysics - Kevin France
4. Space Exploration: Going There - Fran Bagenal
The room itself...
So Let’s Walk Through the Class…

LET’S TRY IT OUT!
Welcome to
CU Space Show…

Today’s Guest is

Neil deGrasse Tyson

And Now…
PATHWAY TO SPACE
Trail Mail:

Chris
why is it
ASEN 1969?

Thanks
Molly ❤️
Dude,
Did you
drew now
hair in high
school?
- [Signature]

Christopher Koehler
Your Path

Dr. Neil deGrasse Tyson
STARS
Student Teams Asking Renowned Specialists
Pathway Outstanding Transporter:
THE FUTURE
POP QUIZ
TIME MACHINE
FOOD
PATHWAY GUEST
Thank you for being here today
Thank you to Neil deGrasse Tyson
Julia Kincaid
Vice Chancellor of Research
Lara Buri
Terri Fiez
Matthew Finney
A special thanks to
Courtney Fell
Brad Grabham
Tim Riggs
Ashleigh Bailey
Thanks to the students
Tessa Rundle
Marisa Exnicious
Corey Huffman
Julia Kincaid
Lara Buri
Matthew Finney
Courtney Fell
Brad Grabham
Tim Riggs
Ashleigh Bailey
And
everyone else I left out
Thank you Chancellor
Phil DiStefano
Vice Chancellor of Research
Terri Fiez
Strategic Projects Director
Emily CoBabe-Ammann
Dean
Bobby Braun
And
for supporting the Space Minor and
the Pathway to Space creation

Clicker Question #6
Rate the show...

a) ★★★★★
b) ★★★★★
c) ★★★★★
d) ★★★★★
e) ★★★★★
One more tool...

Connections  Fully Present
Pathway Prime Directives:

Think of this as our classroom Declaration of Independence

To DECLARE is to CREATE something that didn’t exist before

Please sign
Does it work…:

- **97% of students would recommend course to another student**
- **96% rated the whole course as Positive**
- **95% of students Agreed the course helped them develop a broad background in all aspects of space**
- **95% of students Agreed the course helped them develop a better understanding of the various paths to space**
- **Over 40% of students said they had brought a friend to class**
Join us for the Pathway to Space

First annual MOONWALK DANCE
Open to all Space Minor students!

Idea Forge
Saturday, April 22
7 - 9 P.M.

Wear your space-related costumes or gear!

Best costume prize
Games
Food
Door prizes

Space Minor
UNIVERSITY OF COLORADO BOULDER

THE PARTY STARTS HERE
Questions?
colorado.edu/pathwaytospace