

**ACADEMY FOR
INNOVATION &
ENTREPRENEURSHIP**

**LIFTING
OFF**

**INTO
SPACE**

**WORKS IN
PROGRESS
2017-2018**

HELLO

from the Academy for Innovation & Entrepreneurship! We've been experimenting in two distinct areas over the past five years: how to foster an innovator's mindset in students and faculty across campus, and how to use physical space to enhance learning experiences.

Many of our early experiments took place in traditional classroom spaces with suffocating constraints—seats bolted to the floor, students having to crane their necks to talk to teammates, no wall space for writing or displaying work—making collaborative work seemingly impossible. But as innovators know, constraints can inspire creativity. Tackling these challenges with students and faculty yielded many wonderful and surprising solutions, like the “table flip,” audio-guided learning experiences, and pop-up design studios.

We've only begun to scratch the surface with these (and many other) delightful insights. As we continue settling in to our new home in the Edward St. John Learning & Teaching Center, we invite you to experiment with us in the teaching studio affectionately known as the Loft (a learning space designed and informed by our early experiments in traditional classrooms), and in the many traditional learning spaces across campus that are ripe for innovation. Stop by our office, ring our gong, and join us in lifting off into space!

Sincerely,

The Academy Team

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TEAM

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Turn the pages for innovation activities to try with students or colleagues

2017-2018 HIGHLIGHTS

Our Mission

To engage all 35,000+ University of Maryland students in innovation & entrepreneurship (I&E) experiences in order to prepare them to tackle the world's toughest problems.

Where we are now ...

After five years of help from our campus partners, UMD is 45 percent of the way towards our goal of impacting all University of Maryland students in I&E.

238

I&E course offerings
campus-wide

17,000+

students engaged in innovation
& entrepreneurship curricular and
extracurricular activities

I&E Partners

All 12 colleges & schools
Dingman Center for Entrepreneurship
Do Good Institute
Mtech
Startup Shell
Office of Technology Commercialization
Office of Undergraduate Studies

THE UNIVERSITY OF MARYLAND IS:

8th

in undergraduate
entrepreneurship
education in *Princeton
Review & Entrepreneur
Magazine* rankings

TOP 10

for three
straight years in
*Princeton Review
& Entrepreneur
Magazine* rankings

TOP 25

Most Innovative
School as ranked by
*U.S. News and World
Report* for the third
year in a row

TEACHING EXPERIMENTS

The Academy embraces Design Thinking not only as a teaching method, but also as a way to work. In the spirit of prototyping—quickly trying and testing ideas—we test our hunches and assumptions around course offerings by experimenting with how we interact with students, faculty, and partners, to name a few.



How might we better coach students through activities and projects in larger class-settings?

Students across the university expressed an interest in having more opportunities to dive deeply into innovation and entrepreneurship experiences. In response, we launched the Peer Innovation Coach (PIC) program with two students in Fall 2015. On-the-ground training prepares PICs to help fellow students connect more closely with the material we teach in courses. Nineteen students have progressed through the program as of Spring 2018.



Get to know our PICs at innovation.umd.edu/team

How might we reach students outside of traditional course settings?

Through not-for-credit “Pop-up Workshops,” we’ve been exploring new ways to introduce students to various topics, formats, content, tools, and methods. In doing so, we learn directly from students what “sticks,” and can avoid relying on possible assumptions. It also allows students to engage with us who might otherwise not have the ability to enroll in a semester-long course outside of their major.



Design your Purpose provided tools to make answering the dreaded question: “So, what are you going to do after you graduate?” feel less daunting and more exciting to explore.

Design In(clusion) was hosted by IDEA468: Adventures in Design Thinking students as a way to engage people across campus in meaningful conversations around diversity & inclusion. Participants designed the agenda together and explored topics ranging from language to recognition.



Diving into innovation through course partnerships

In “Innovation+[X]”, students immerse themselves in interesting topics with diverse partners on- and off-campus while learning Design Thinking and Lean Startup methods. Last summer, the Academy conducted multiple experiments in the Innovation+[X] framework, including:



How do you bring the symphony to a nightclub?

In partnership with the National Orchestral Institute+Festival, students in the inaugural year of Innovation+Music reimagined the symphony experience using Design Thinking and Lean Startup. In a three-week time span, students created a live prototype called NOI[SE], a festival-style experience for classical music held at the new College Park venue MilkBoy Arthouse. More than 100 classically trained musicians, classical music lovers, and classical music novices attended, helping further the intended goal of facilitating better connections between musicians and listeners.



What happens when non-speaking autistic young adults explore radical empathy?

Innovation+Inclusion, a three-day workshop with autistic young adults, was developed as a key component of Growing Kids Therapy Center’s Summer Institute. The self-advocates, who call themselves the “Tribe,” explored how Design Thinking might foster inclusion and understanding between autistic and neurotypical communities. During the workshop, they tried on the “designer’s mindset” and generated ideas ranging from a hat that mimics the mind-body disconnect experienced by non-speaking autistics to glasses that indicate others’ emotions during personal interactions.



What are unexpected ways to help our planet?

Students traveled from as far as Costa Rica and Thailand to participate in Innovation+Sustainability, a hands-on summer class with projects covering the topics of food waste, pedestrian environments, a campus thrift shop, and facilitating peer engagement in sustainability. Benefiting from the expert guidance of UMD’s Office of Sustainability, IDEA210 was offered in the summer to high school students as part of the Terp Young Scholars program, and was our first time teaching in the Loft, our new classroom space. Students experimented and tested many concepts based on feedback from users, and designed a sustainability journey to help them discover and build out their future career paths.

Left: Matthew Wildman plays a Mozart bassoon concerto at NOI[SE]. Center, left to right: Roxy Cuadra and Ian (Tribe) build a low resolution prototype. Right: Summer 2017 IDEA210 students and PIC Hannah Correlli (bottom right).

THE FEARLESS MISSION STATEMENT PROJECT

USING LEAN STARTUP TO “EXPLORE YOUR PURPOSE”

Using Lean Startup methodology, students conduct “customer discovery-style” interviews with friends, family, and experts in fields they’d like to explore as part of their Fearless Mission Statement project. The project gives students the tools to synthesize key learnings, navigate pivots, and engage in further discovery and iteration. They leave with a process and skills to explore how they might spend their time at UMD to shape their career and beyond.

I can provide my ability to _____
The What (value I provide)

to _____
The Who (who needs this value)

in order to help _____.
The Why (who benefits and/or what problem gets solved)



BIG QUESTIONS TO CONSIDER:

What are you good at
and what do you enjoy?

What value do you intend
to provide in the future?

What organizations/departments/people
would pay for that value?

Which of those would you
like to work with/for?

WHERE WE USE THE FMS PROJECT:

Pop-up workshops (i.e. Design Your Purpose)
Carillon Design Studio (UNIV100)
Bioengineering (BIOE121 & BIOE221)
Mechanical Engineering (ENME201)
Peer Innovation Coaching (IDEA369)
Sustainability & Design (IDEA210)

How might we engage a wide range of learners?

Featured here are some novel ways that courses supported learners in reaching new heights in innovation skills, both in and out of the classroom.



Weeks 1-15

In Becoming a Design Thinker: Mindsets and Tools for Innovation (IDEA258A), design thinking was broken down into core design abilities. Each class session actively explored mindsets and behaviors associated with those abilities and contributed to building creative confidence throughout the semester.



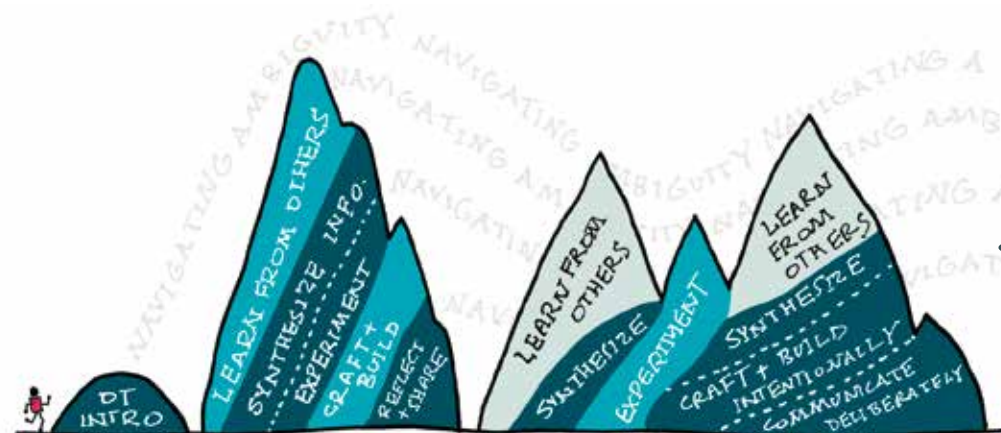
Weeks 1-4

Weeks 5-7

Weeks 8-12

Weeks 13-15

Students in **Sustainability & Design (CPSP249E)** tackled the challenge of food waste in multi-week projects that wove Design Thinking and Lean Startup methods together in dynamic combinations. They explored human behaviors, technical systems, and business models by constantly engaging with stakeholders on campus and in the community, using reflection as a tool for rapid learning and improvement.



Week 1

Weeks 2-5

Weeks 6-15

Redesigning Health Care: Developing a Clinic to Meet Community Needs (HLSA484) exposed students to the design thinking process "start to finish" through multiple projects, each increasing in difficulty. Reinforcing key concepts while continuously framing and reframing problems for on-campus and community stakeholders ensured that students could build skills in a variety of contexts.

KEY

LONGITUDE



ALTITUDE

- || "Yikes, what did I get myself into?"
- || "Uh ... what's happening?"
- || "Feels weird, but I think I can do this!"

TERRAIN

- In the classroom
- Out and about on campus
- In the community

Opposite page: top two photos courtesy of the Stanford University d.school Teaching & Learning Studio, featuring Eric Johnson, Doug Roberts, and Melissa Del Rios; bottom photo of Nicole Mogul courtesy of Thomas Savransky.

FACULTY EXPERIMENTS

All around campus, there are faculty in schools and departments attempting bold experiments in teaching. The Academy supports these instructors by providing shared experiences, access to an experimental design studio, and fellowships to an immersive teaching workshop.



TLS PARTICIPANTS

Pam Armstrong / Robert H. Smith School of Business

Ben Bederson / Teaching and Learning Transformation Center

Gül Branco / Hillman Entrepreneurs Program

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Ann Smith / Office of Undergraduate Studies

Brooke Smith / The Academy for Innovation & Entrepreneurship

Gerald Suarez / Robert H. Smith School of Business

Scott Wible / Department of English

Beatriz Winn / Robert H. Smith School of Business



How might we introduce faculty to new ways of teaching innovation tools and methods?

The Academy partners with the d.school at Stanford University to jointly teach a multi-day “re-imagine higher ed” workshop called the Teaching and Learning Studio (TLS). Faculty, staff, and administrators from universities around the world apply to attend workshops held in January, June, and July. The Academy awards several \$4,000 Fellowships each year to UMD faculty, staff, and administrators to attend. As of May 2018, there have been 18 UMD participants. Read more about TLS in a September 2017 article in *The Chronicle of Higher Education* at ter.ps/tlschronicle.



Learn more about TLS at ter.ps/TLS and apply to be an Academy Fellow

How might we inspire faculty to engage with space differently?

Faculty and instructors who teach a design-related, project-based course are invited to teach in the Loft: the Academy’s flexible design studio (subject to availability). Faculty intentionally experiment with space as an element of their class, and students learn to think of space as a partner in their learning adventures.

How might we share lessons learned?

Fearless Faculty Learning Community sessions are a place to share successes and lessons learned from experiments community members have tried in courses with regard to innovation and entrepreneurship. Sessions typically involve a faculty share-out and discussion and occur at various points throughout the Fall and Spring semesters.



Watch past learning community sessions at ter.ps/FFLC



SPACE EXPERIMENTS

The Academy's staff offices are located in the Edward St. John Learning & Teaching Center, along with a collaborative, reconfigurable studio classroom called the Loft. Our central location on campus provides us with new opportunities to experiment with how we engage students—one of those ways is through space!



SPACE HACKS 101



THE TABLE FLIP

Who needs walls? When you're lacking vertical space, grab a table and flip it sideways to create your own vertical space. Make sure it's stable!



AUDIO-GUIDED LEARNING EXPERIENCES

Self-guided audio experiences can expand the borders of the classroom by literally taking students outside. Experience one at ter.ps/notice.



LIFE-SIZE BUSINESS MODEL CANVAS

CPSP249E brought the Business Model Canvas to life on 6-feet-tall rolling whiteboards. Teams collaborated in filling out sections of the canvas and collectively synthesizing information.



How might we engage passersby in innovation & entrepreneurship?

The Academy is located in the center of campus with a brightly lit “garage door” to guide students to our office. We created a self-directed experience where students can actively learn about the Academy, explore and try out I&E concepts, and discover UMD I&E resources.

How might we use space to support the learning goals and objectives of a course?

Our Symons Hall classroom, named “the Garage,” was a narrow, oblong computer lab that we converted into a 20-person classroom. We wanted it to be an inviting and inspiring space to work in, so we experimented with writing surfaces (whiteboard paint, plexiglass, handheld whiteboards), types of seating, and getting rid of desks. We learned that energy levels increase and are easier to maintain in a colorful space. Faculty remarked that the flexibility of the space fostered more student engagement and collaboration. Students enjoyed the space so much that many would regularly work there after-hours with their class project teams and extra-curricular groups.

Our experience in the Garage had an enormous influence on the design of the Loft, a studio classroom that accommodates 40–50 students. Now, we are experimenting with how space and furniture can encourage different behaviors.

For example, when instructors walk in, the first thing they notice is that the furniture isn’t set up for classroom instruction. This is intentional and requires instructors to reconfigure the furniture and space to best support their learning and teaching goals for each session. Space naturally becomes another member of the teaching team.



Above: Fall 2017 BMGT489Z students simulating the in-flight experience by recreating an airplane in the Loft (courtesy of Gerald Suarez). Top of page: Fall 2017 HLSA484 students using improvisation to prototype ideas (courtesy of Stephen Thomas).

In the spirit of “show, don’t tell,” here are some activities adapted from Academy courses and workshops that you can do to practice your I&E skills.

READY, SET, INTERVIEW!

Interviewing is a way to gain empathy for others—to learn from and better understand their thoughts, perspectives, and experiences. Is there an issue you’re interested in exploring? Learn more by asking someone who has first-hand experience with it to share their perspective. **TRY IT ...**

STEP 1: Crack the code to the right to get started.

STEP 2: Conduct the interview using your plan as your guide. Be brave (and sensitive) in approaching the interview and remember: this is an opportunity to learn more about a person’s experience related to the issue you’re interested in—and potentially other aspects of their life.

STEP 3: Thank your interviewee for sharing their experiences!



Create a structure for your interview. Start with simple, introductory questions, then look for stories related to the project topic.



First, be human: _____.

Introduce yourselves and ask your interviewee a bit about themselves.



Next, _____.

Ask about specific types of experiences, i.e.:

“Can you tell me a story about a time you:

... struggled with ... ?”

... had a problem with ... ?”

“Tell me about a time that something unexpected happened ...”



Now let’s _____.

Dig deeper by following up.

“Why do you say that? ...”

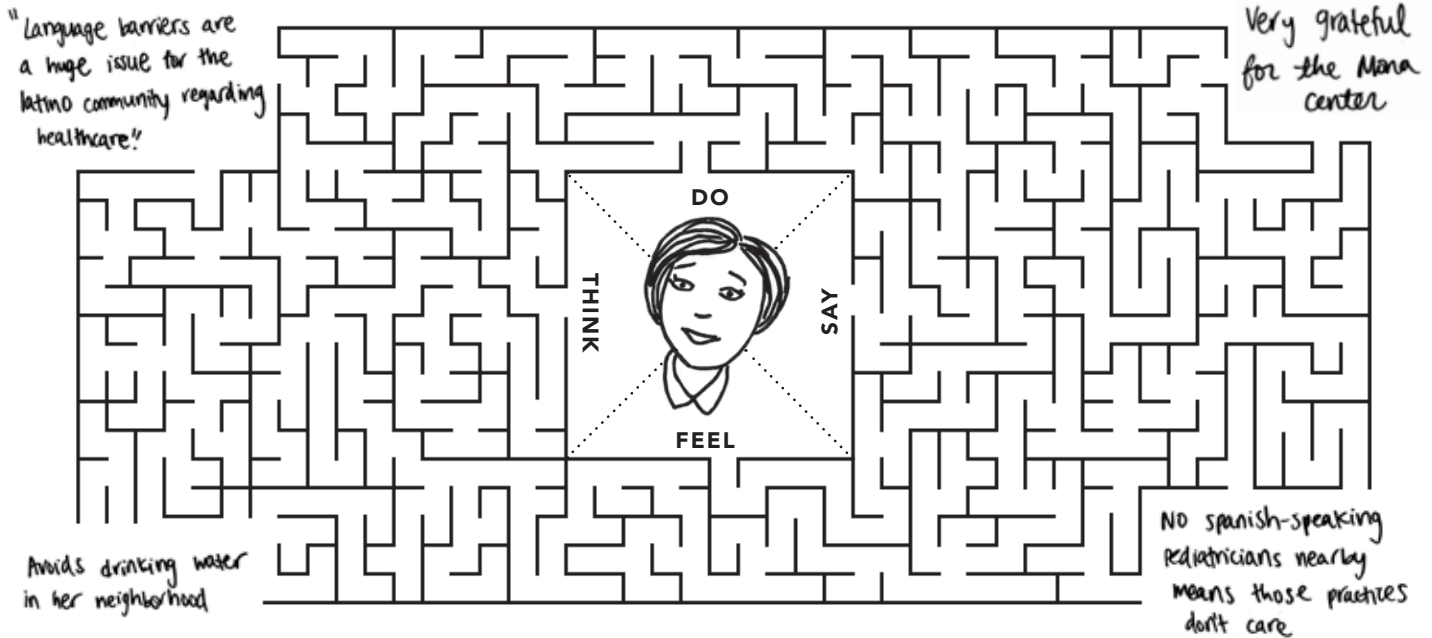
“Tell me more about ...”

“How did you feel at that moment, when ... happened?”

A-MAZING DATA

An Empathy Map is a tool that can be used to distill and process data from interviews. Interviewee data can be organized into the categories of: SAY, THINK, DO, and FEEL. Students in HLSA484: Redesigning Health Care conducted interviews in the community surrounding the Susan Denison Mona Center for Health and Wellness in Prince George’s County.

TRY IT: Connect the HLSA484 interview data to the empathy map for “Erma,” a longtime resident of Temple Hills, Md., and mother of an elementary school-aged child.



SYNTHESIZE THIS

Synthesizing interview data helps identify patterns and themes that can lead to uncovering non-obvious insights about the interview topic. Students learn to navigate this involved artform by distilling complex data into key insights that are then used to inform the next steps of the Design Thinking process.

TRY IT: Match the quotes about synthesis with the person who said them.

“This step is all about taking a reality, pulling it apart, and making a new reality”

HASSO PLATTNER INSTITUTE OF DESIGN (d.school) at Stanford University

“Synthesizing information is the ability to make sense of information and find insight and opportunity within.”

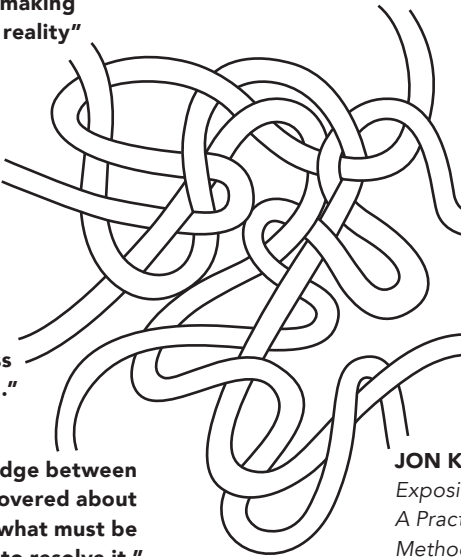
DON KOBERG AND JIM BAGNALL, authors of *The Universal Traveler: a Soft-Systems guide to creativity, problem solving and the process of reaching goals*

“Synthesis is a process of making meaning.”

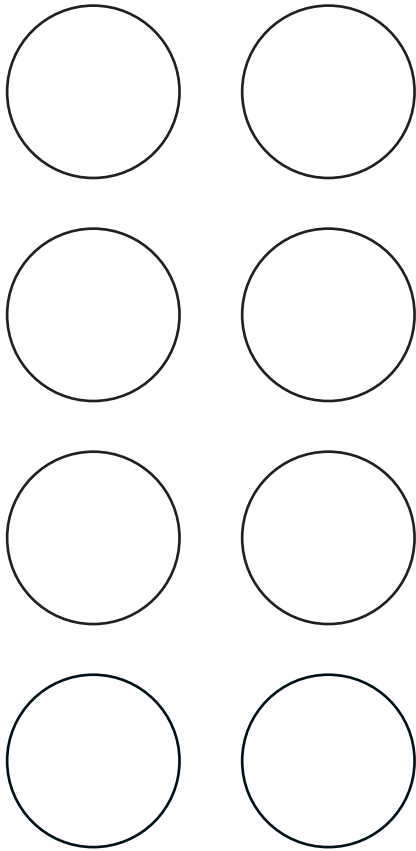
SUSAN PASSMORE, Fall 2017 HLSA484 professor

“You are building a bridge between what you have discovered about a situation and what must be accomplished to resolve it.”

JON KOLKO, author of *Exposing the Magic of Design: A Practitioner’s Guide to the Methods & Theory of Synthesis*



TRY IT

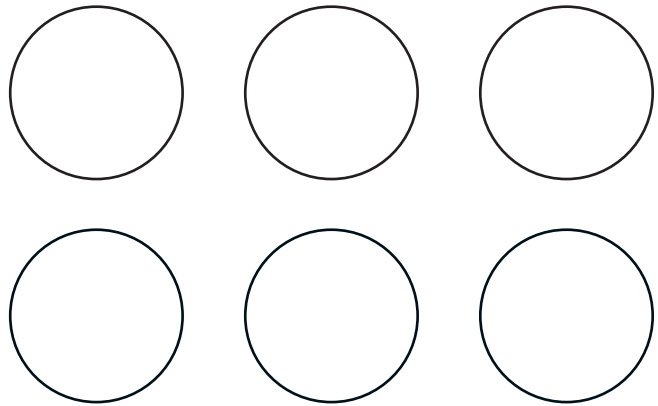


GOING IN CIRCLES

Visualization, a.k.a. sketching, is a way to generate ideas rapidly as a form of brainstorming. It also allows you to quickly and cheaply prototype ideas. **TRY IT ...**

STEP 1: Draw as many recognizable objects as you can in the circles in two minutes or less. And ... go!

STEP 2: Give your sketches to someone and ask them to guess what each one is. Have fun comparing interpretations of your masterpieces!



IMPROV(E) YOUR SKILLS

Improvisation, otherwise known as improv, relates to many aspects within Design Thinking, such as empathy and prototyping.

TRY IT: Find the improv-related words in the puzzle.

action
brainstorming
empathy
flexibility
inspiration
iterating
openness
participation
people
perspective

prototyping
questioning
reframe
roleplay
scene
stories
unexpected
vulnerability
yes and

G	U	F	X	S	G	E	D	E	E	I	I	W	N
P	N	Y	L	A	S	N	M	M	N	N	R	Y	O
E	E	I	D	E	A	E	A	P	S	E	T	P	I
R	X	B	M	S	X	R	N	P	A	I	C	T	T
S	P	P	E	R	F	I	I	N	L	T	E	S	A
P	E	Y	E	E	O	R	B	I	E	R	H	C	P
E	C	I	R	O	A	T	B	I	A	P	T	Y	I
C	T	Q	R	T	P	A	S	T	L	I	O	Y	C
T	E	F	I	O	R	L	I	N	O	I	G	K	I
I	D	O	C	E	T	N	E	N	I	O	T	A	T
V	N	Z	N	Z	G	S	Q	E	O	A	B	Y	R
E	T	L	Y	A	L	P	E	L	O	R	R	N	A
Q	U	E	S	T	I	O	N	I	N	G	L	B	P
V	D	P	R	O	T	O	T	Y	P	I	N	G	Z

YES, AND ...

The Academy uses stokes to boost energy, help participants get to know each other better, or create focus. We typically coordinate stokes to the concepts covered during a session. One of our favorites is “Yes, and ...,” which relates to collaboration—building off of each others’ ideas, and improvisation—being willing to take unexpected paths.

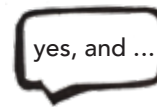
TRY IT ...



STEP 1: Circle up with your group and start by introducing a theme (i.e. planning a party, camping trip, winter break).



STEP 2: Suggest an idea within the theme. You might say, “Let’s plan a party! We should have a bounce house.”



STEP 3: The person next to you builds on that idea, starting with the phrase, “Yes, and...”



STEP 4: Continue around the circle with each person building off the previous idea.

WORKING IN PLAY

How can you adapt your work to make it feel more fun? The Academy does this by adding seemingly unrelated recreational activities into our work day. For instance, you may find us working outside in our hammocks or ice skating over lunch. Where can you pull inspiration from to make your work playfully productive? **TRY IT ...**

STEP 1: Pick one “work task” and one “recreational activity.” Close your eyes and use your finger to randomly choose one from each list (at right).

STEP 2: Use the recreational activity as inspiration for ways to make the work task more fun and playful. Ideas could include actually doing the recreational task as part of the task, using aspects of the recreational task as playful inspiration, and so much more. Write down as many ideas as you can on post-its, in your notebook, or on your phone/computer. Go for quantity of ideas—not quality—and the wilder the idea, the better! Once you lose momentum with one work-recreation pair, pick another.

WORK TASK	+	RECREATIONAL ACTIVITY
Organizing files		Camping
Responding to emails		Hammocking
Teaching a class		Doing yoga
Writing a paper		Drawing/painting
Giving a presentation		Ice skating
Grading/evaluating		Attending a concert
Sitting in a meeting/class		Mushroom foraging
Catching up with others		Gardening
Managing a budget		Hiking or running
Having a difficult conversation		Playing an instrument
Working at your desk		Sailing
Doing school work		Picnicking
Conducting research		Insta/Snapchatting
Attending a training session		Vacationing



**AIE often seems
to be detached
from reality
and awful because of
their unprecedented
and unparalleled
innovativeness that
is manifested through
their fearless designs.**

**It is boundless,
invasive,
turbulent,
free, and
thus beautiful.**

**It's like ghost pepper,
relentlessly spicy, but
maximized aromatic.**



—AODU GUO, IDEA258A STUDENT IN FALL 2017



ACADEMY FOR
INNOVATION &
ENTREPRENEURSHIP

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UPCOMING EXPERIMENTS IN ...

Innovation Studio @ NOI+F,
Learning Experience Design
Studio, Partnering with Carillon
Communities, Ta-Da Let's Share,
and much more! Keep up with us
by signing up for news and other
information at ter.ps/AIEnews.



For answers to the exercises on
pages 10–13, visit ter.ps/AIEkey



Sign up to meet with Dean Chang
<https://calendly.com/deanchang>