Nomination for:
2020 USASBE Excellence in Pedagogical Innovation Award

# Creativity
# & the Doer/Maker Mindset
## (ENT 250)

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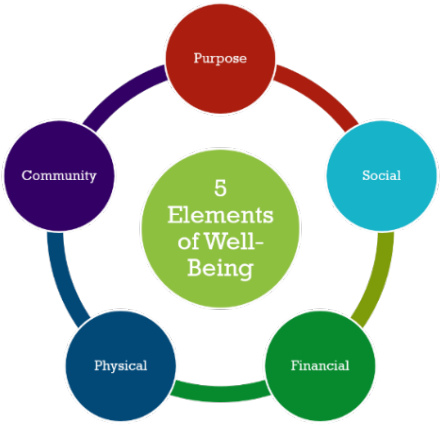
# Executive Summary

## The Purpose of the Nominated Program

- Startups are *not* common. The Kauffman Foundation reports that just 0.3% of college graduates found a company each year, and the average founder's age is about 40. Yet, **there are mindsets and skillsets that beget flourishing generally and innovation specifically**; competencies that also happen to be critical to founding a successful startup should the right circumstances occur.
- ENT 250 is *not* a continuing education class, or an upper-level course for students near graduation, or a required 'core' course. Most of our students are *sophomores and freshman*, half are *not* majors or minors in entrepreneurship and, for many, ENT 250 will be their *only* business class in college. So, rather than galvanizing students who already know they want to be creators, **we inspire disciplined, collaborative, creative purpose in the minds of curious students from all over campus.**
- Specifically, ENT 250 trains students that their life is the innovation; that entrepreneurial competencies they employ across time, jobs, teams, and experiences will help them prosper, period. **ENT 250 changes the way students approach, examine, and engage everything, making Creativity & the Doer/Maker Mindset <u>the ultimate Introduction to Entrepreneurship course</u>.**

## The Primary Objectives of the Program




How do you ask students to enhance the way they approach, examine, and engage *everything*? We start from the ground up and the inside out with **well-being**. Nineteen year-olds are awash in notions of what they should do and who they should be, be it parental pressure for a particular profession, peer pressure to slack off and party, or intense, ambiguous internal pressure to "be happy". ENT 250 counters these pressures. Students are required to gain disciplined self-management to excel at near-weekly quizzes and written memos and presentations. Students evaluate and develop their own purpose by synthesizing and reacting to the ideas and contributions of leading thinkers and innovators. Finally, students are compelled to regularly act and react to the world through (i) challenges requiring the smart phone generation to reconnect with the built environment, (ii) ever-changing teams faced with mental modeling exercises that prompt social connection and knowledge transfer, and (iii) innovation projects requiring conversations and live testing with various community stakeholders.

The multi-directional 'stretching' required in ENT 250 is the *mindset* that lays the groundwork for the *skillset* we provide next. This 'toolbox' includes practical tools such as time management and public speaking, as well as sophisticated mental modeling tools like Higher Order Thinking and Fermi Analysis described below. As the weeks progress, students no longer just endure our demanding cadence, but use the toolbox to attack assignments and optimize possibilities in our class and beyond.

ENT 250 is a powerful catalyst for students already interested in startups, venture capital, and other aspects of the new venture ecosystem (See Evidence of Impact in Exhibits). For other students, those who continue on to degrees in engineering, media analytics, finance, law school and medical school, they recognize the endless opportunity to bring applied creativity to their domain of interest. In both cases, Creativity & the Doer/Maker Mindset enables student dynamism by modeling a broader vision. This is a business class, yet, never before has there been such clear definition of the wicked problems that need

solving (e.g., the United Nations Global Goals shown to the right). Moreover, as a successful, diverse faculty who have taken a home-based startup to the heart of Wall Street, excelled at the largest of corporate consulting companies, and volunteered to teach poverty-stricken students in rural Mississippi, we believe *aim is everything*. Personal well-being and a sophisticated toolbox are critical, but we must produce professionals aimed at something reflecting their greatest self.


## Program Description

On the first day of class, students are asked to put away computers and phones and estimate "how many piano tuners work in New York City". This exercise is representative of the entire course and immediately challenge students' presumptions about 'school' itself. Most are blown away to participate in a process (articulated further in Exhibit C) that produces a reasonable estimate of an opaque value without any formal expertise or a laptop. Indeed, in ENT 250 the answer, "I don't know" gets replaced by "A good way to estimate this might be to start with…" The piano tuners exercise is a classic example of Fermi analysis used in physics and engineering and is just one of at least eight tools taught in the class.

Yet, ENT 250 is not merely an abstract thinking class. Our faculty's experience with startups, scholarship, corporations and culture has only reinforced the fact that proficiency and discipline must be present before abstractions can add value. To this end, ENT 250 is a flipped classroom, with students reading an entrepreneurship textbook on their own time and taking near-weekly quizzes on business terms, general financial considerations, project management, and operational challenges. After initial panic, students begin to recognize that no great innovator runs on a 'one midterm and one final exam' cadence. Successful people are always deepening their knowledge base such that they are able to recognize and engage opportunities when they appear. To complement the textbook, students also read *36 innovation-related Wall Street Journal articles* and watch, write about, present, or observe presentations on *60 Ted Talks.* Founders cannot just ponder the possibilities of their innovation, but must constantly prototype, test, market, sell, pivot, book their own flights, and take out the trash. Thus, class projects and tools like Fermi analysis are not just taught, but acted out through writing (sometimes pictures!), presenting (sometimes improv!), and evaluating.

The last layer to ENT 250 involves original action and experimentation. Students work in Elon's Maker Hub on their own time to 3-D print their own keychain, solder a small light, create a laptop sticker, and sew a scarf. This produces amazing changes in students. First, it helps students overcome the fact that many of them have never actually *made* anything. Second, they experience first-hand the great disparity between the widget they envisioned and the unsightly blob they produce with their first prototype. Next, every student must also propose an innovation. After initial vetting, students form teams of three, where they learn one of the most important aspects of the class; the varying nature of ideas in terms of revenue models, stakeholders, capital requirements, seasonality, and so on. Through a comparative process (which foreshadows how investors choose among ideas to fund), teams winnow down to the one idea with the greatest opportunity for success and/or real exploration in the present semester. ENT 250 requires no outside funding, but regularly engages with Elon's Doherty Center for Creativity, Innovation, and Entrepreneurship, Elon's Maker Hub, and founders, businesses and municipalities.

# Exhibits

## A. Unique Aspects and Features of the Course

- The Ted Talk assignments are sophisticated and layered for optimal student exposure to ideas:
  - The three faculty members who teach this class have reviewed 1,000+ Ted Talks for diverse topics, resulting in a list of Talks reflecting themes such as the U.N.'s list of Global Goals, the Grand Challenges of Engineering, and the mission of Benefit Corporations (B-Corp).
  - Everything in ENT 250 is intentional. Because people tend to watch what is familiar, comfortable, and confirming, Ted Talks are *assigned*, not chosen by students. Students bristle, but then have their biases and blind spots upended by Talks *they had no idea* were relevant to them.
  - No two students will orally present the same Talk, but at least two students will have watched each presented Talk to foster engaged discussion. To pull this off, we created an Excel matrix and mail merge that results in some, but not too much, overlap in Ted Talks explored each week.
  - Students do not know when they will present orally, which means they must develop the 'cognitive fitness' to regularly articulate big ideas. Preparation across various topics enables you to do a single pitch, but one pitch (common in many ENT classes) does not make you articulate.
  - Students must complete written memos for each Talk reflecting Higher Order Thinking, including evidence of *understanding*, expanded *analysis*, and individual *evaluation* or *creation*.
  - The Excel matrix serves as a randomizer so that students prepare work on most weeks, but faculty grade only a random subset of student work rather than grading every Talk every single week.
  - Students present their second Ted Talk in an *accent (e.g., Scottish, Irish).* Adding the accent routinely, and amazingly, results in <u>better</u> presentations because word choice, body language, and concentration is heightened. Students see yet another way *they can do much more than expected.*
- Quizzes contains ten questions from the text, two from the Wall Street Journal's *The Future of Everything* readings, one question requiring students to calculate break-even or ROI for a hypothetical idea, and one new Fermi question; a layering of foundational knowledge, current events, and financial and critical thinking skills. Clicker technology is utilized, making seamless what would otherwise be an untenable amount of grading each week.
- Fermi is just one tool used in the class. Others include system dynamics (from environmental science and geography), creative fluency, flexibility and originality (from psychology), design thinking (from product development), end of life calculation (a philosophy exercise), coding (a computer science process about sequence and parsimony), and more. Faculty utilize a developed list of these heuristic-based tools, choosing a subset and order that best fits their personal teaching style, while ensuring that the "cognitive stretching" required of students is consistent across classes.
- The projects students propose escalate from soft pitch, to initial feasibility report, through 20 customer conversations and live prototyping/testing, to final feasibility. See Exhibit D for examples.

## B. Evidence of Impact

- Since Creativity & the Doer/Maker Mindset was first taught, Elon has grown about 14%, while enrolled Elon ENT majors have grown 45% and minors have grown 120%.
- Alum of this course *are* startup founders. For example, Courtney Chambers runs 'Makers Gonna Learn' and has achieved financial success at the age 21. John Inzerillo runs Cars and Cameras, with more than 700,000 YouTube subscribers, as well as corporate sponsorships and product sales.
- Alum of this course get hired by startups. For example, Annie Schaffer was an early employee at Deliv in Silicon Valley and Kyle McKinley now works at Maestro as a Venture for America Fellow.
- Alum of the course get great jobs, from Deloitte, to IBM, the Seattle Mariners, and Greenspring (VC).

- Seniors regularly take this course, with job offers in hand, because their friends told them, "You must take this course before you leave college". Further, students often follow up about the class, saying…

*"I just want to say how awesome this class has been. I've never known everyone in a class so well, and I think that's due to the discussions you've fostered and the comfort zones you've broken. -Brett".*

*"...thank you for all you have taught me. Your classes pushed me to have discipline and grit above all else…pushed me way harder than expected but left me quicker with mental math, Fermi-based market size estimation, & innumerable other abilities, all of which were crucial in helping me finally landing a job [as a venture capital analyst]… -Matthew".*

*"I am reaching out to you to express my thanks for your inspiration and example to my daughter. In the last few weeks Madeline has experienced a number of tremendous successes [she won a competition], each of which seemingly was built on the other and all are timed to your entrepreneur class. -Barry"*

*"…I'm working on a side project, and getting close to launching a company...Turns out you were right – a formal college education is invaluable…I reached this epiphany when my business plan came together, and all the numbers finally made sense…Thank you for not giving up on me…-Peter"*

## C. Fermi - Continued

After anxious silence in response to my 'piano tuners' question, a student will shyly say something like "I am not sure how many people live in New York City". From here, I nudge them toward rough estimates of population and other variables, such as estimating tunings a person can complete in a day by thinking of how long it took the cable guy to set up TV service in their apartment (something they might be familiar with, but did not realize would be useful intel). Fermi questions vary, but the purpose is always, "How do you access and orient what you know to estimate what you don't know?" Here is another Fermi:

Which country sent the most athletes to the 2014 Sochi Winter Olympics?

A) Netherlands, B) France, C) Austria, or D) China

*The 'obvious' choice is China based on population, but an entrepreneurial mind also considers factors such as topography, economy, and culture. Netherlands has cold weather, but no mountains. France has mountains, but also beaches and many other sporting options. Austria, the correct answer, is steeped in alpine culture, with weather, topography, and an economy to support winter sports infrastructure.*

## D. Sample Student Projects

- **Safe-Tie**: Wearable bracelet/hair-tie that changes color when exposed to date-rape chemicals.
- **FoodDrive:** Non-profit app combining student driving-school hours with food bank deliveries.
- **Elon Flags**: Pop-up reseller of Elon and other flags not available at campus bookstore.
- **Click here to see of projects students explore on the Elon Entrepreneurship website…**

## E. Nominee Biography

Sean McMahon is the Doherty Emerging Professor of Entrepreneurship at Elon University. His work is published in Entrepreneurship Theory and Practice, Applied Psychology, and Organizational Behavior and Human Decision Processes, among others. McMahon also founded, raised millions in funding for, and ran two high-growth startups. Knowtro was a web app making complex empirical research easy for anyone to find, cite, and use. Jaywalk was a technology platform enabling global dissemination and vetting of unbiased investment recommendations. Knowtro failed to reach viability. Jaywalk was a success; earning acquisition by The Bank of New York and, later, McMahon's promotion to Managing Director by age 30. Along the way, Sean has written a novel, recorded songs for an original album, studied martial arts and Portuguese, paddled the Amazon River, hang-glided the Swiss Alps, and built Habitat for Humanity homes in four states.