IMSA School of STEAM Innovation Proposal

Program Objectives

- Students transfer content and approaches between disciplines
- Students become motivated to study topics outside their preferences
- Students collaborate effectively with others

Status of this Proposal

Prototype Phase

April '15 to May '15

- General idea of program timeline created.

- Listening and Learning with teachers, alumni, students, and professionals for interdisciplinary inspiration.

- Students develop example training challenge ideas.

- Choose best challenge ideas and prototype.

Refinement Phase

May '15 to October '15

- Adjust based on feedback from faculty and Principal's Office.

- Find times for program to meet.

- Find faculty sponsors to run training challenges.

- Design program metrics.

- Seek support of new Principal for pilot.

- Plan and propose Intersession.

Pilot Phase

October '15 to May '16

- Pilot program with students who helped develop proposal.

- Find opportunity for teams to present final projects.

- Reflect and retool program with metrics.

- Determine future of program and create selection practices for future participants if necessary.

You Are Here.

Program Timeline

START: OCTOBER

TRAIN

During Quarter Two: At least once every month, students participate in interdisciplinary challenges that train them for final project. Teams will change each month.

ACCELERATE

Intersession: Students choose teams and topics for final project and join a half-time Intersession in which alumni, professionals will help them develop their concept.

DEVELOP

During Semester Two: Continuing with their final project teams, students will bring their concept into fruition. Additional Training challenges can be added as needed.

SHARE

After IMSALoqium: Project teams make final presentations/demonstrations to the IMSA community and reflect on how the program can be strengthened.

END: MAY

TRAIN: Program Challenges

Challenge Qualities

- **Team-Based** - Cohesion between students leads to success.
- **Interdisciplinary** - Blend ideas from at least three disciplines.
- **Rigorous** - Final product always leaves room for improvement.
  - Challenge design should value process and growth over outcome.

Types of Challenges

- **Speed** - Challenge completed in a limited time environment (suggested: 3 hours).
- **Endurance** - Teams receive challenge and have a week/weekend to work.
- **Flexibility** - Challenges takes place asynchronously.
- **Composition** - Disciplines not given explicitly, teams decide which to use.
  - Challenge design should value disciplines that students have little prior exposure to.

Use this information to design your training challenge ideas!

Challenge Ideas

These activities have been designed by IMSA students interested in the program to give an idea of what kinds of challenges they had in mind. We request the support of our faculty in designing high-level challenges that can engage students in this program.

Tsunami Response (Example)

SPEED

Teams will have three hours to submit a written plan of action that advises a country hit by a tsunami on its priorities for recovery. Successful teams will plan a holistic recovery and blend disciplines to offer high-efficiency, innovative solutions.

- The crisis report will include:
  - The country affected by the disaster.
  - Damage assessment and statistics.
  - Available funding to carry out proposed action plan.
- Crisis reports based on past natural disasters to provide a degree of realism. Teams will research more information from the country's current state.

Extensions

- Teams host a 10 minute presentation/forum instead of a report.
- Each team receives a different country and must later tailor their approach to fit the crisis report of another team.

Arabian Sites

CHALLENGE OBJECTIVE

An American startup has approached each team with the Western version of their website. They would like to market their product to more Middle Eastern countries and need their site to be redesigned to be sensitive to the regional culture,

CHALLENGE OVERVIEW

- Teams will receive:
    - The full website from the startup.
    - Some background papers and readings about Middle Eastern business, populations, and cultural sensitivity in general.
- This **article** may provide inspiration in fleshing out this challenge.
- This challenge will be introduced on a Friday evening and students will have until the next Sunday to work on their solution.

Extensions

- This challenge could take place after giving students basic HTML/CSS training so that they can actually mock up a website.

Special Effects

CHALLENGE OBJECTIVE

A movie production crew sends each team their plot and the fantastical scenes that they want to produce. Teams will determine what approaches can yield the desired special effects and submit a storyboard and instructions for the crew.

CHALLENGE OVERVIEW

- This challenge is a reverse engineering problem that hits on the classic question that many have asked at least once: "How did they do that???"
- Judging and feedback on this design should value special effects approaches that take place on set over effects added in editing.

Extension

- Connect teams with IMS, professionals, or IMSA alumni that work in the industry and challenge them to actually produce one of the scenes.

Mars Rover... can IMSA come over?

CHALLENGE OBJECTIVE

Teams will be challenged to design the first human colony on Mars. Blueprints, sketches, proposals, and budgets should be created for presentation to various stakeholder groups.

CHALLENGE OVERVIEW

◦ Inspired by Dr. Marshall's anecdote: "If the IMSA student body were all sitting in a room together, tasked with leading human colonization of Mars, I would be able to measure the success of IMSA by listening to the questions they all ask each other."

Extensions

◦ Teams will prepare to present to three groups. In their preparations, they must be cognizant of the nuances that communication with each one brings.
   ▫ Government Agencies
   ▫ Corporate Donors
   ▫ Civilian Colonists

Product Design

SPEED

CHALLENGE OBJECTIVE

Product Design

CHALLENGE OVERVIEW

- ○ Remember to write this.