

UC DAVIS
C-STEM Center



RoboPlay Challenge



MATH Programming Challenge



C-STEM DAY
Saturday May 4th, 2013

UC Davis Center for
Integrated Computing
and **STEM** Education



The UC Davis C-STEM Day is organized to build public awareness and advocate for Computing and STEM education. The C-STEM Center has been actively engaged in technology and curriculum development with the support from the National Science Foundation. The Center's overarching goals are to close the achievement gap by broadening participation of students traditionally underrepresented in computing and STEM and to develop students' computer-aided problem-solving skills through engagement in real-world STEM problems.

RoboPlay Competitions bring together secondary student teams from across the region to participate in a series of challenges that require the integration of creativity, programming and robotics knowledge, collaboration and critical thinking.

The UC Davis Secondary School **Math Programming Competition** provides students in secondary schools with the opportunity to take the lead in the new common core practices by demonstrating their understanding of mathematics through real-world computer programming.

Schedule Saturday May 4th, 2013

| Time | Event | Location |
|---------------|---|--------------------------------------|
| 7:30-8:30 | Registration and Setup for RoboPlay Challenge Competition | UC Davis Conference Center Lobby |
| 7:30-8:30 | Registration and Setup for Math Programming Competition | UC Davis Conference Center Lobby |
| 8:30 – 8:40 | Welcome and Introduction | UC Davis Conference Center Ballrooms |
| 8:40 – 9:00 | RoboPlay Challenge Competition Introduction | Conference Center and Alumni Center |
| 9:00 – 12:00 | RoboPlay Challenge Competition Problem Solving | Conference Center and Alumni Center |
| 8:50 – 11:40 | Math Programming Competition | Bainer Hall 2121A |
| 9:30 - 11:30 | Robot Demos | Conference Center Lobby |
| 12:00 – 12:45 | Lunch Break | UC Davis Conference Center Foyer |
| 12:45 – 3:45 | RoboPlay Challenge Competition | UC Davis Conference Center Ballrooms |
| 3:45 –4:00 | Break | |
| 4:00 – 5:00 | Awards Ceremony <ol style="list-style-type: none"> 1. C-STEM Awards of Achievement 2. C-STEM Awards of Excellence 3. C-STEM Scholarship 4. UC Davis Math Programming Competition winners 5. UC Davis RoboPlay Video Competition winners 6. UC Davis RoboPlay Challenge Competition winners | UC Davis Conference Center Ballrooms |

Organizers: UC Davis Center for Integrated Computing and STEM Education, College of Engineering, and UC Davis Computing and Robotics Outreach Club.

Sponsors:



Schedule for RoboPlay Challenge Competition

| High Schools | | | | | | | | |
|----------------------------|-------------|------------------------|---------|-------|--------------------------------|-------------------|--|----------------------|
| School | Last Name | Team Name | Team #* | Board | Practice Times | Practice Location | Competition Times | Competition Location |
| Luther Burbank High School | Jennings | Jennings 1 | 18 | E | 10:45 – 11:00 11:45 – 12:00 | Alumni Center | 1:30 – 1:45 2:30 – 2:45 3:30 – 3:45 | Conference Center |
| River City High School | Fagout | River City High School | 19 | F | 10:00 – 10:15 11:00 – 11:15 | Conference Center | 12:45 – 1:00 1:45 – 2:00 2:45 – 3:00 | Conference Center |
| St. Francis High School | Espindola | Fembots 1.0 | 20 | F | 10:15 – 10:30 11:15 – 11:30 | Conference Center | 1:00 – 1:15 2:00 – 2:15 3:00 – 3:15 | Conference Center |
| Hiram Johnson High School | Schlesleman | TED Team 2 | 21 | F | 10:30 – 10:45 11:30-11:45 | Conference Center | 1:15 – 1:30 2:15 – 2:30 3:15 – 3:30 | Conference Center |
| Hiram Johnson High School | Schlesleman | TED Team 1 | 22 | F | 10:45 – 11:00 11:45 – 12:00 | Conference Center | 1:30 – 1:45 2:30 – 2:45 3:30 – 3:45 | Conference Center |
| Luther Burbank High School | Schnack | Schnack 2 | 23 | G | 10:00 – 10:15 11:00 – 11:15 | Conference Center | 12:45 – 1:00 1:45 – 2:00 2:45 – 3:00 | Conference Center |
| Luther Burbank High School | Schnack | Schnack 1 | 24 | G | 10:15 – 10:30 11:15 – 11:30 | Conference Center | 1:00 – 1:15 2:00 – 2:15 3:00 – 3:15 | Conference Center |
| Luther Burbank High School | Dagler | Dagler 2 | 25 | G | 10:30 – 10:45 11:30-11:45 | Conference Center | 1:15 – 1:30 2:15 – 2:30 3:15 – 3:30 | Conference Center |
| St. Francis High School | Espindola | Fembots 2.0 | 27 | H | 10:00 – 10:15 11:00 – 11:15 | Conference Center | 12:45 – 1:00 1:45 – 2:00 2:45 – 3:00 | Conference Center |
| Luther Burbank High School | Dagler | Dagler 1 | 28 | H | 10:15 – 10:30 11:15 – 11:30 | Conference Center | 1:00 – 1:15 2:00 – 2:15 3:00 – 3:15 | Conference Center |
| Highlands High School | Sisneros | Highlands Scots | 29 | H | 10:30 – 10:45 11:30-11:45 | Conference Center | 1:15 – 1:30 2:15 – 2:30 3:15 – 3:30 | Conference Center |
| Luther Burbank High School | Jennings | Jennings 2 | 30 | H | 10:45 – 11:00 11:45 – 12:00 | Conference Center | 1:30 – 1:45 2:30 – 2:45 3:30 – 3:45 | Conference Center |

* See maps for practice locations

Schedule for RoboPlay Challenge Competition

| Middle Schools | | | | | | | | |
|------------------------------------|--------------|------------------|---------|-------|--------------------------------|-------------------|--|----------------------|
| School | Teacher | Team Name | Team #* | Board | Practice Times | Practice Location | Competition Times | Competition Location |
| Elkhorn Village Elementary School | Wright | Team Elkhorn B | 1 | A | 10:00 – 10:15 11:00 – 11:15 | Alumni Center | 12:45 – 1:00 1:45 – 2:00 2:45 – 3:00 | Conference Center |
| American Canyon Middle School | Lee | SSIK | 2 | A | 10:15 – 10:30 11:15 – 11:30 | Alumni Center | 1:00 – 1:15 2:00 – 2:15 3:00 – 3:15 | Conference Center |
| School of Engineering and Sciences | Besk | SES Rockets 2018 | 3 | A | 10:30 – 10:45 11:30-11:45 | Alumni Center | 1:15 – 1:30 2:15 – 2:30 3:15 – 3:30 | Conference Center |
| California Middle School | Aguilar | CalBears A | 4 | A | 10:45 – 11:00 11:45 – 12:00 | Alumni Center | 1:30 – 1:45 2:30 – 2:45 3:30 – 3:45 | Conference Center |
| Westmore Oaks Elementary School | Reinhard | Team Reinhard! | 5 | B | 10:00 – 10:15 11:00 – 11:15 | Alumni Center | 12:45 – 1:00 1:45 – 2:00 2:45 – 3:00 | Conference Center |
| Esparto K-8 | Krautkraemer | Spencer Team | 6 | B | 10:15 – 10:30 11:15 – 11:30 | Alumni Center | 1:00 – 1:15 2:00 – 2:15 3:00 – 3:15 | Conference Center |
| Riverbank Elementary School | Saul | Team B Day | 7 | B | 10:30 – 10:45 11:30-11:45 | Alumni Center | 1:15 – 1:30 2:15 – 2:30 3:15 – 3:30 | Conference Center |
| Elkhorn Village Elementary School | Wright | Team Elkhorn A | 8 | B | 10:45 – 11:00 11:45 – 12:00 | Alumni Center | 1:30 – 1:45 2:30 – 2:45 3:30 – 3:45 | Conference Center |
| American Canyon Middle School | Lee | Randomizers | 9 | C | 10:00 – 10:15 11:00 – 11:15 | Alumni Center | 12:45 – 1:00 1:45 – 2:00 2:45 – 3:00 | Conference Center |
| Bridgeway Island Elementary School | Schoellhamer | Robot Team 1 | 10 | C | 10:15 – 10:30 11:15 – 11:30 | Alumni Center | 1:00 – 1:15 2:00 – 2:15 3:00 – 3:15 | Conference Center |
| Riverbank Elementary School | Saul | Team A Day | 11 | C | 10:30 – 10:45 11:30-11:45 | Alumni Center | 1:15 – 1:30 2:15 – 2:30 3:15 – 3:30 | Conference Center |
| Westmore Oaks Elementary School | Reinhard | Team Reinhard | 12 | C | 10:45 – 11:00 11:45 – 12:00 | Alumni Center | 1:30 – 1:45 2:30 – 2:45 3:30 – 3:45 | Conference Center |
| California Middle School | Aguilar | CalBears B | 13 | D | 10:00 – 10:15 11:00 – 11:15 | Alumni Center | 12:45 – 1:00 1:45 – 2:00 2:45 – 3:00 | Conference Center |
| School of Engineering and Sciences | Mangan | Ryan Team | 14 | D | 10:15 – 10:30 11:15 – 11:30 | Alumni Center | 1:00 – 1:15 2:00 – 2:15 3:00 – 3:15 | Conference Center |
| O. W. Holmes Jr. High School | Sommer | Holmes Patriots | 15 | D | 10:30 – 10:45 11:30-11:45 | Alumni Center | 1:15 – 1:30 2:15 – 2:30 3:15 – 3:30 | Conference Center |
| Bridgeway Island Elementary School | Schoellhamer | Robot Team 2 | 16 | D | 10:45 – 11:00 11:45 – 12:00 | Alumni Center | 1:30 – 1:45 2:30 – 2:45 3:30 – 3:45 | Conference Center |
| School of Engineering and Sciences | Besk | SES Rockets 2018 | 17 | E | 10:15 – 10:30 11:15 – 11:30 | Alumni Center | 1:00 – 1:15 2:00 – 2:15 3:00 – 3:15 | Conference Center |

* See maps for practice locations

Introduction:

Welcome to the Roboplay Challenge competition! You don't have much time so let's get started right now!

General Rules:

- 1 You have **10 tasks** to do in **any order you like**.
 - a Each task is described below.
- 2 Each task gives you points. The goal is to get as many points as possible.
- 3 The tasks must begin at one or more of the starting zones unless stated otherwise. (Zones A, B, and C are marked with hashes).
 - a **Some tasks must begin at a specific starting zone.**

Practice Information:

- 1 All teams will be provided a designated practice area to place their practice board.
- 2 You may practice on the practice board you brought at any point except for lunch, from noon to 12:45pm.
- 3 You are given time, **two** 15-minute practice periods, to practice on the official board between 10 am and noon.
 - a Your 15 minute periods can be found in the Roboplay Competition schedule page.
 - b Each 15 minute period starts and ends when specified in the schedule. You will not be given 15 minutes from when you arrive. Please be prompt.

Competition Information:

- 1 You are given **three** 15-minute competition periods to compete on the official board between 12:45pm and 3:45pm.
 - a Your 15 minute periods can be found in the Roboplay Competition schedule page.
- 2 Any task that is on-going when your 15 minute period ends will be immediately stopped and points will be calculated.
- 4 You are allowed to attempt each task as many times as you like within the allotted competition time. If you attempt a task multiple times the points from the highest scoring run will be kept.
- 5 You are also allowed to attempt several tasks at the same time (again in the allotted competition time).
- 6 Tasks may not be "chained together" meaning you cannot do two tasks simultaneously with the same progra

Reminders for students:

General:

- Measure everything with the provided measuring tape. Don't trust the given dimensions to be completely accurate.
- Read how assignments are scored to figure out the best strategy to get points.
- Ask questions if you are unclear about something.

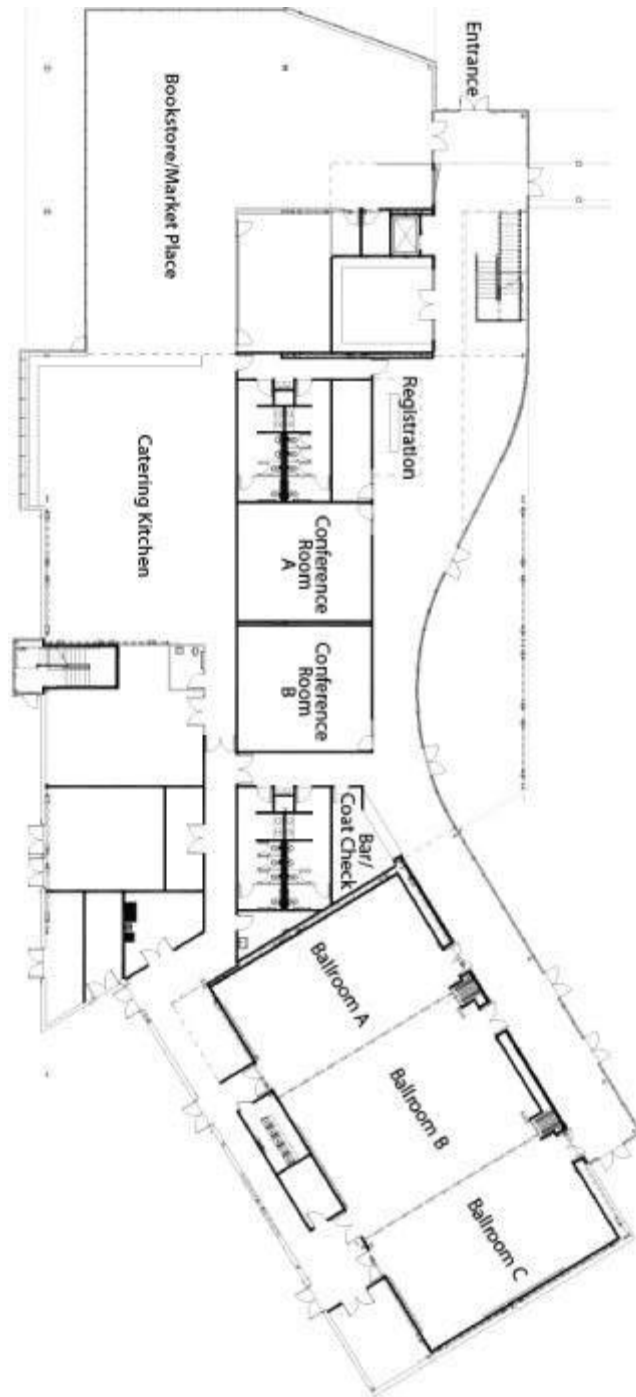
Assigned Boards:

- These will be the boards you will practice on and compete on.
- Make sure you know where your assigned board is at all times.
- Refer to diagram given or ask someone.

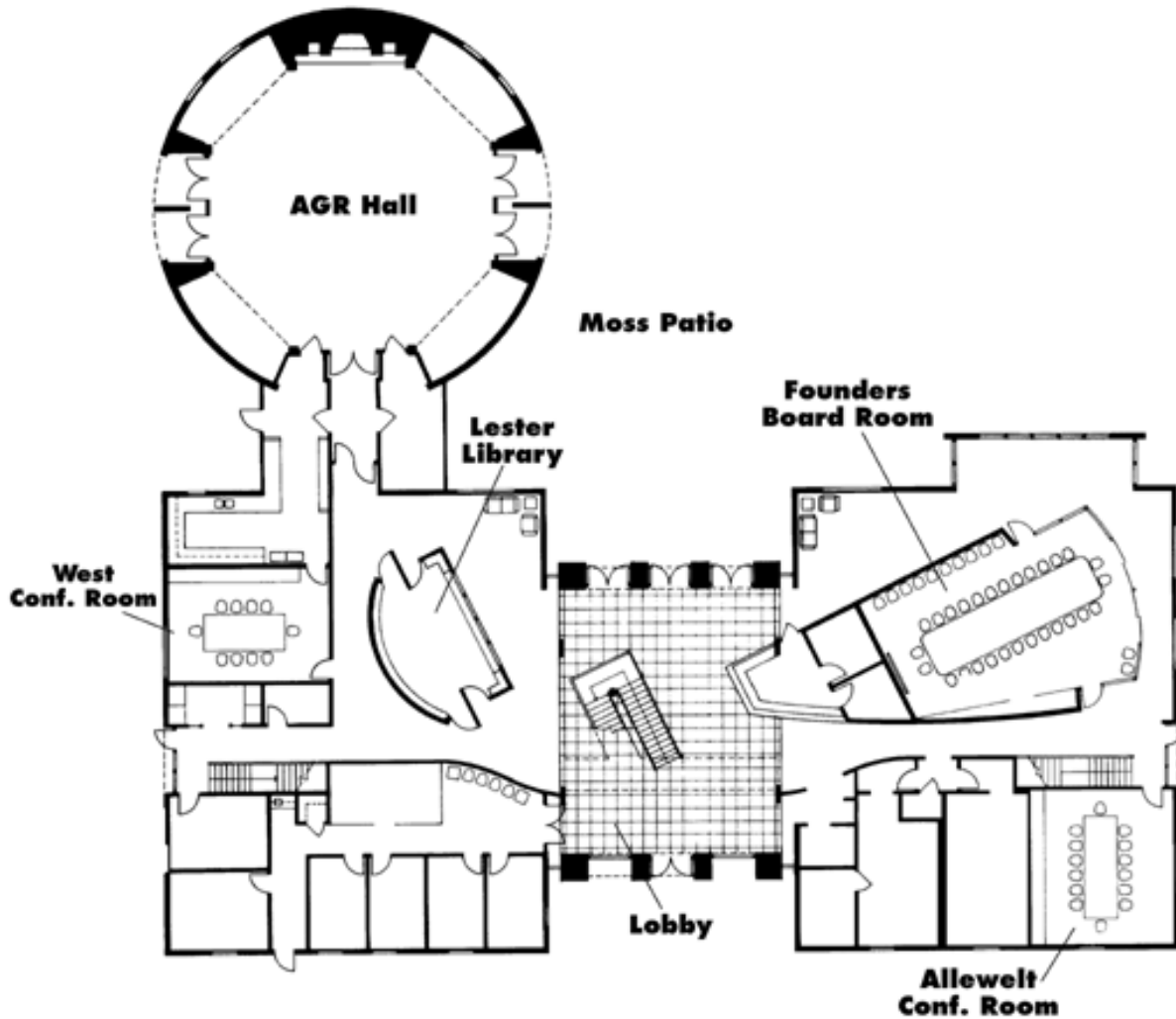
Practice/competition times:

- 15 minute practice/competition times will be marked by a whistle being blown.
- Arrive 5 minutes early to your allotted practice/competition time.
 - Refer to packet if you don't know when your practice/competition times are.
- Keep your name tag on at all times. You will need it to gain access to the board during your 15 minute period.

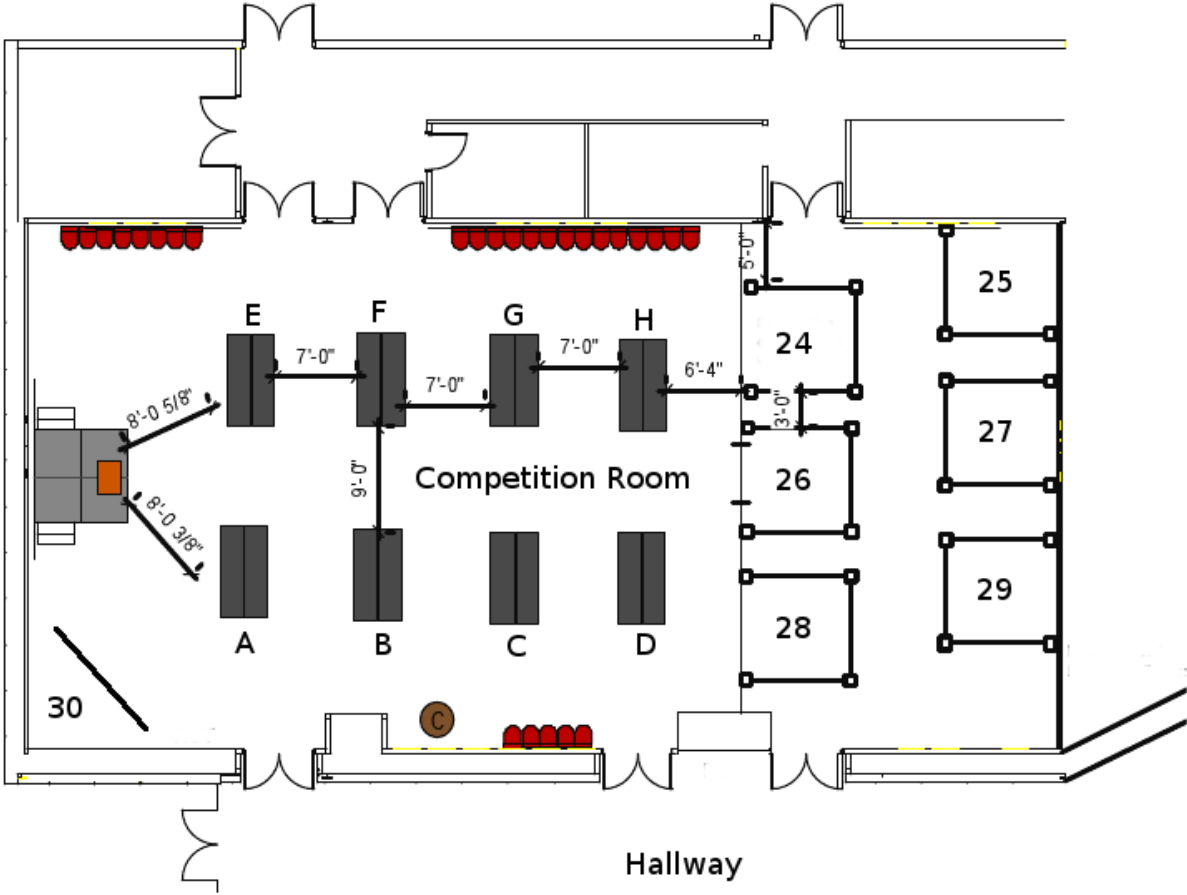
Conference Center Layout



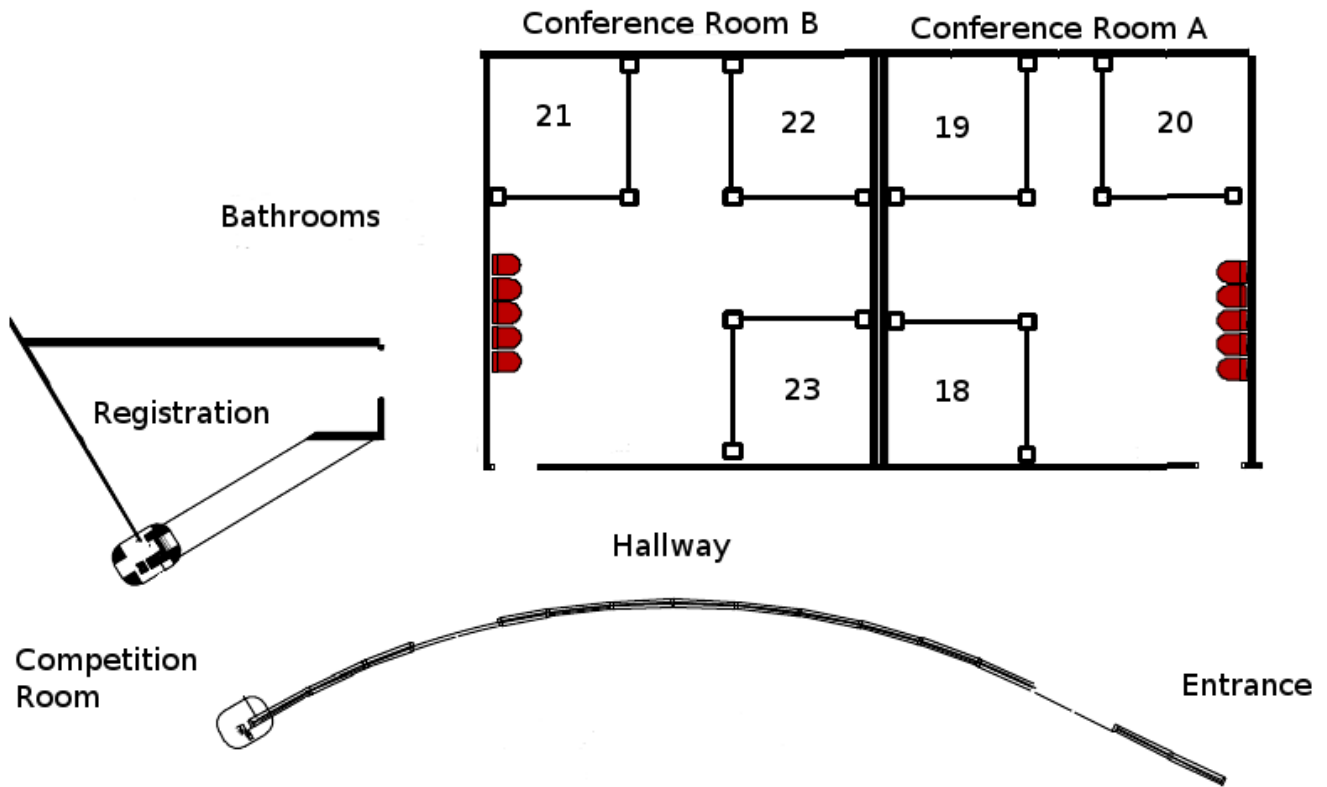
Alumni Center Layout



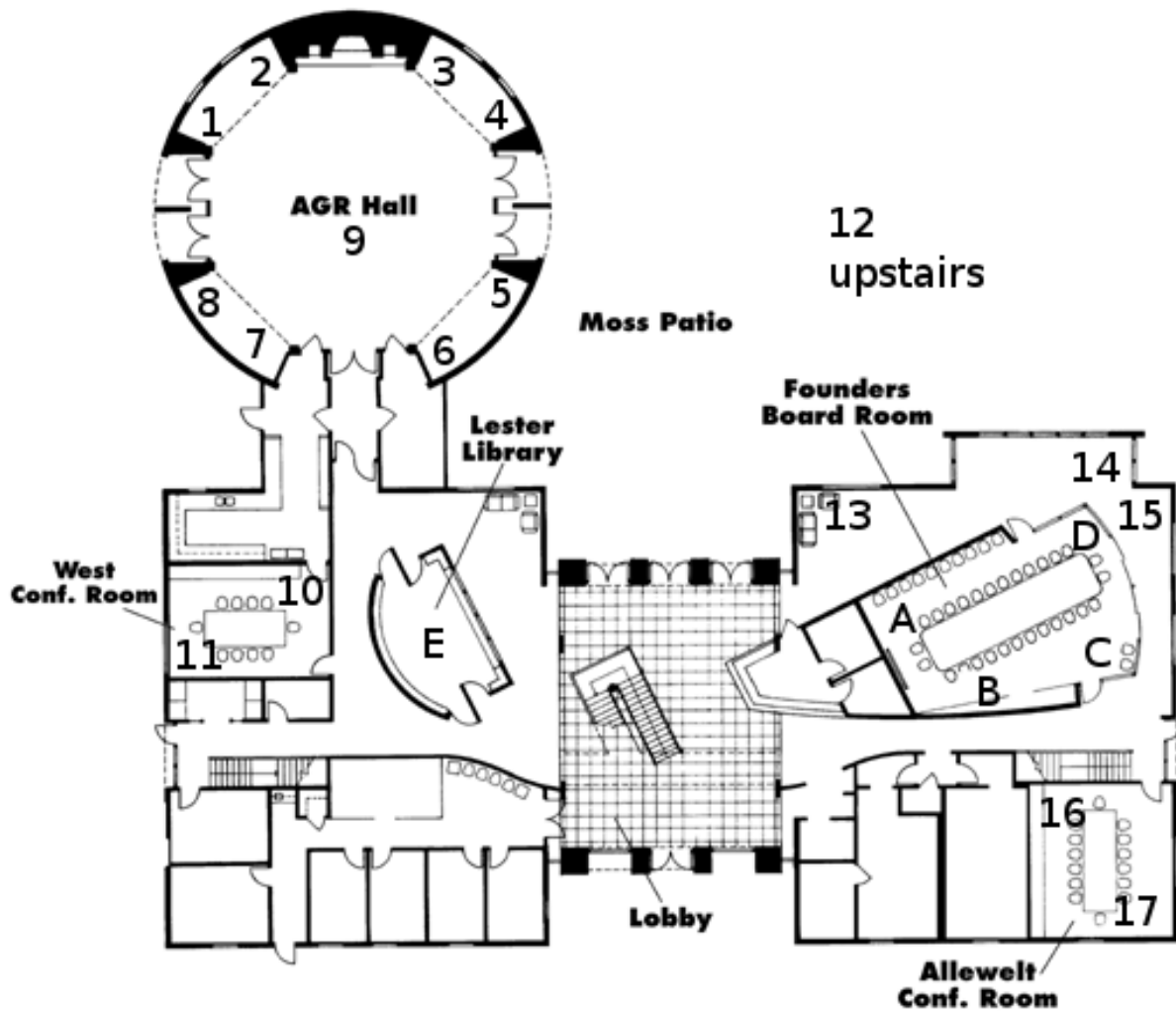
Conference Center Competition Locations



Conference Center Practice Locations



Alumni Center Team Practice Locations

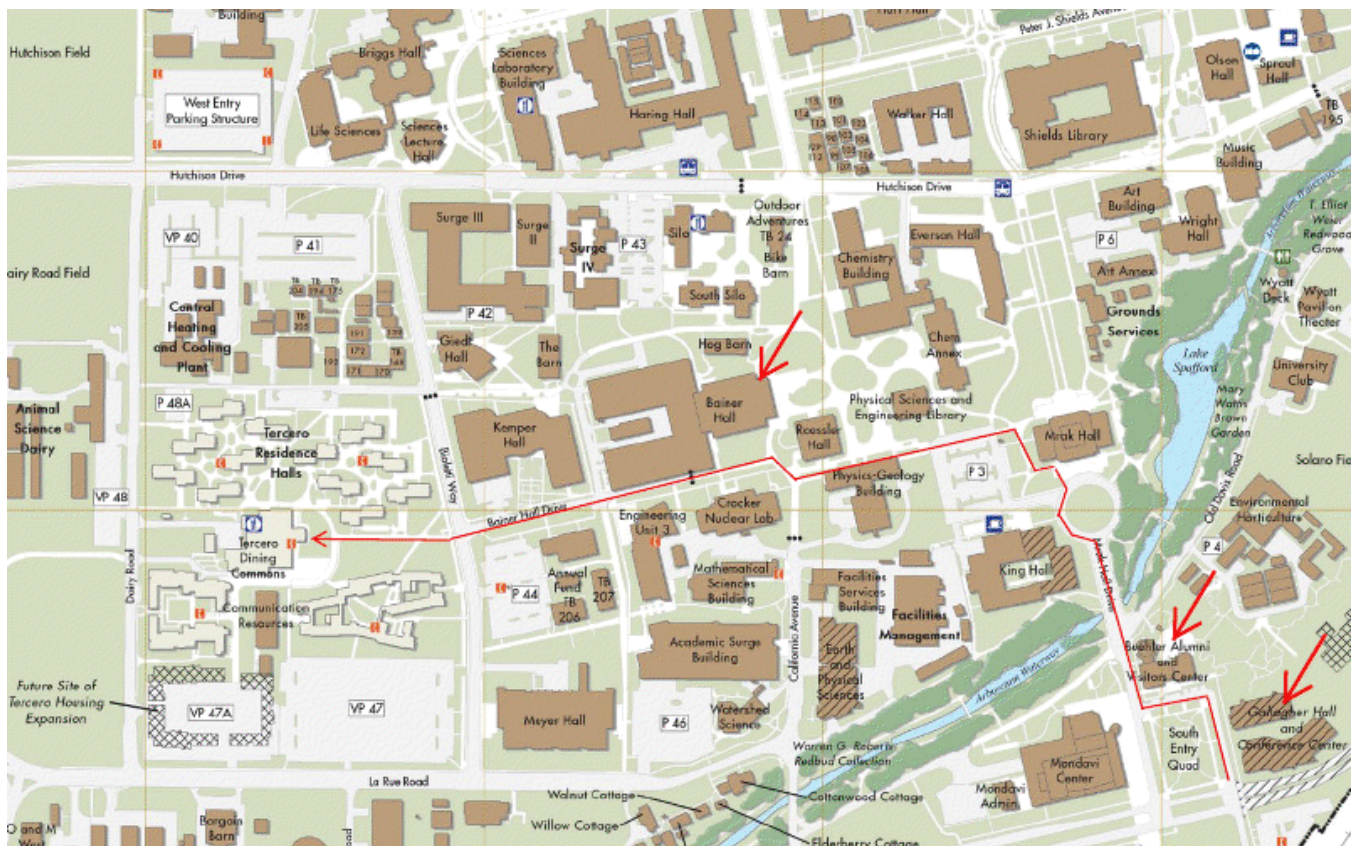


Overview of Event Locations

Bainer Hall – Math Programming Competition

Alumni Center – RoboPlay Challenge Practice Locations

Conference Center – RoboPlay Challenge Main Location



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COLLEGE OF ENGINEERING



Robo**P**lay Challenge



MAT**H** Programming Challenge

