



Starting a University CubeSat Program: A Top Ten List of Lessons Learned



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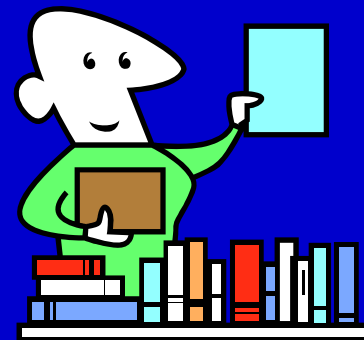
CubeSat Developers' Workshop, April 2009



Lesson #10

There's No Substitute for Good Documentation

- It's good engineering practice
- Student turnover is inevitable





Lesson #9

Well...Maybe There Are Good Substitutes

- Wiki
- YouTube

The screenshot shows a YouTube video player interface. At the top, the YouTube logo is followed by 'Broadcast Yourself™ Worldwide | English'. Navigation tabs for 'Home', 'Videos', 'Channels', and 'Community' are visible. The video title is 'Kumu A'o CubeSat: Antenna Deployment Concept'. The video content features a green banner with the same yellow cube icon, the title 'Kumu A'o CubeSat Antenna Deployment Concept', and the University of Hawaii logo. Below the logo, the presenter's name 'Reid Yamura' and affiliation 'Electrical Engineer, Kumu A'o CubeSat Team, University of Hawaii at Manoa' are listed. The recording date is 'Recorded: June 19th, 2008'. The video player controls at the bottom show a progress bar at 3:11 / 4:33, a volume icon, and a '300 views' count.

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Kumu A'o CubeSat: Antenna Deployment Concept

Kumu A'o CubeSat
Antenna Deployment Concept

Reid Yamura
Electrical Engineer
Kumu A'o CubeSat Team
University of Hawaii at Manoa

Recorded: June 19th, 2008

3:11 / 4:33

0 ratings

300 views



Lesson #8

My Best-Kept Secret



- The faculty advisor only kick-starts the process
- The real success: students mentoring students



Lesson #7

CubeSat is Great for Turning Good Students Into Excellent Students

- 150 students trained since 2001
- 9 in PhD, > 20 in MS
- National awards
- Publications, Patents, Start-up Company
- > \$0.5 million in student-written proposals



Lesson #6

But it's Even Better at Motivating
Students for Whom the Traditional
Educational Paradigm Doesn't Work



Lesson #5

CubeSat is Re-Engineering Methods of Teaching Engineering

- Open-ended, project-based learning
- The abundance of professional “soft” skills



Lesson #4

Institutional and Industrial Backing is Key

- Design reviews
- Funding
- Mentoring, and then hiring, of our students





Lesson #3

The Two-Pizza Team Concept

- Keep the team size to a manageable limit
- Let everyone have a contributing role



Lesson #2

Guinness...the only way to survive a crash

Let Them Have Fun...





Lesson #1



The Future is in Good Hands

- Bryan Fewell - 8th Grader at Hanalani Schools
- Seven awards at the Hawaii State Science Fair





Bryan Fewell - 8th Grader





Mahalo!