

An aerial photograph of a university campus. The central focus is a large, multi-story building with a prominent tower on the left side. The building features a red-tiled roof and light-colored walls with arched windows. A tall palm tree stands to the left of the tower. In the background, other university buildings and a hazy mountain range are visible under a clear blue sky.

Good for the Goose, Good for the Gander: Enhancing learning opportunities for all students through video captioning

**Amy Strage and Elizabeth Tu
San José State University
November 20th, 2015**

***18th Annual Accessing Higher
Ground: Accessible Media, Web and
Technology Conference***

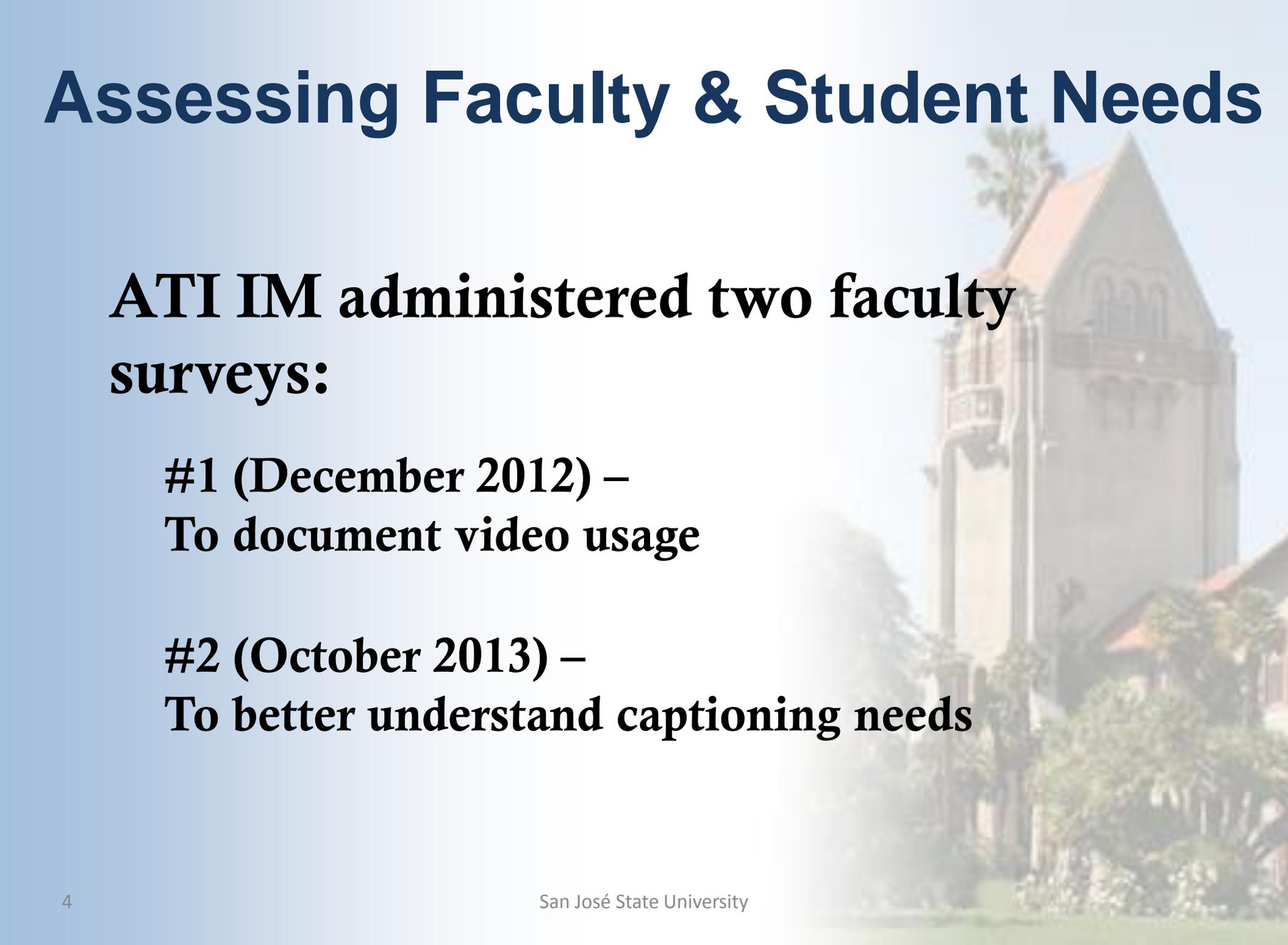
Agenda

- **Our Campus & Our Collaborators**
- **Assessing the Needs**
 - Questions about video usage
 - Questions about captioning needs
- **Introducing Captioning Services**
- **Case Studies**
 - Usage of captioned videos
 - Impact of captioned videos on student learning
- **Wrap-Up: Take Away Messages**

SJSU Campus & Collaborators

- **Students:**
 - **Total enrollment: ~ 32,000**
 - **Registered w/ Accessible Education Center: ~ 1100 (4%)**
- **Faculty:**
 - **Full-time & part-time: ~ 1600-1700**
- **Accessible Technology Initiative Instructional Materials (ATI IM) committee membership:**
 - **Academic Senate**
 - **Academic Technology**
 - **Accessible Education Center**
 - **Center for Faculty Development**
 - **Library**
 - **Information Technology Services**
 - **Bookstore**
 - **Representatives from faculty & administration**

Assessing Faculty & Student Needs



ATI IM administered two faculty surveys:

**#1 (December 2012) –
To document video usage**

**#2 (October 2013) –
To better understand captioning needs**

Status of Captioned Video

- **55% of respondents said that NONE of the videos viewed In-Class are captioned**
- **62% of respondents said that NONE of the videos they assign for Outside of Class viewing are captioned**

| | Not Captioned | < 25% | ~ 50% | > 75% | All | Don't Know | Other |
|-------------------------|----------------------|-----------------|---------------|-----------------|---------------|-------------------|-----------------|
| In-Class | 72 (55%) | 29 (22%) | 2 (2%) | 7 (5%) | 7(5%) | 7 (5%) | 8(6%) |
| Outside of Class | 82 (62%) | 10 (8%) | 2 (2%) | 2 (2%) | 4 (3%) | 12 (9%) | 20 (15%) |

Source Video Format

This question is important to learn what kind of video files we will be captioning/transcribing.

- Note the **INCREASE** in proportion of **ELECTRONIC** files received (45% to 89%)
- Note the **DECREASE** in proportion of **DVDs** received (30% to 11%)

| Source Video Format | Spring 2014 | Fall 2014 | Fall 2015 |
|--|-------------|-----------|-----------|
| Electronic file (e.g., m4v, Flash, QuickTime, Window Media, Real Player) | 45% | 74.7% | 89% |
| DVD | 30% | 22.8% | 11% |
| Other | 14% | 1.3% | 0 |
| VHS tape | 11% | 0 | 0 |
| Blu-Ray | 1% | 0 | 0 |

Copyright Ownership of Videos

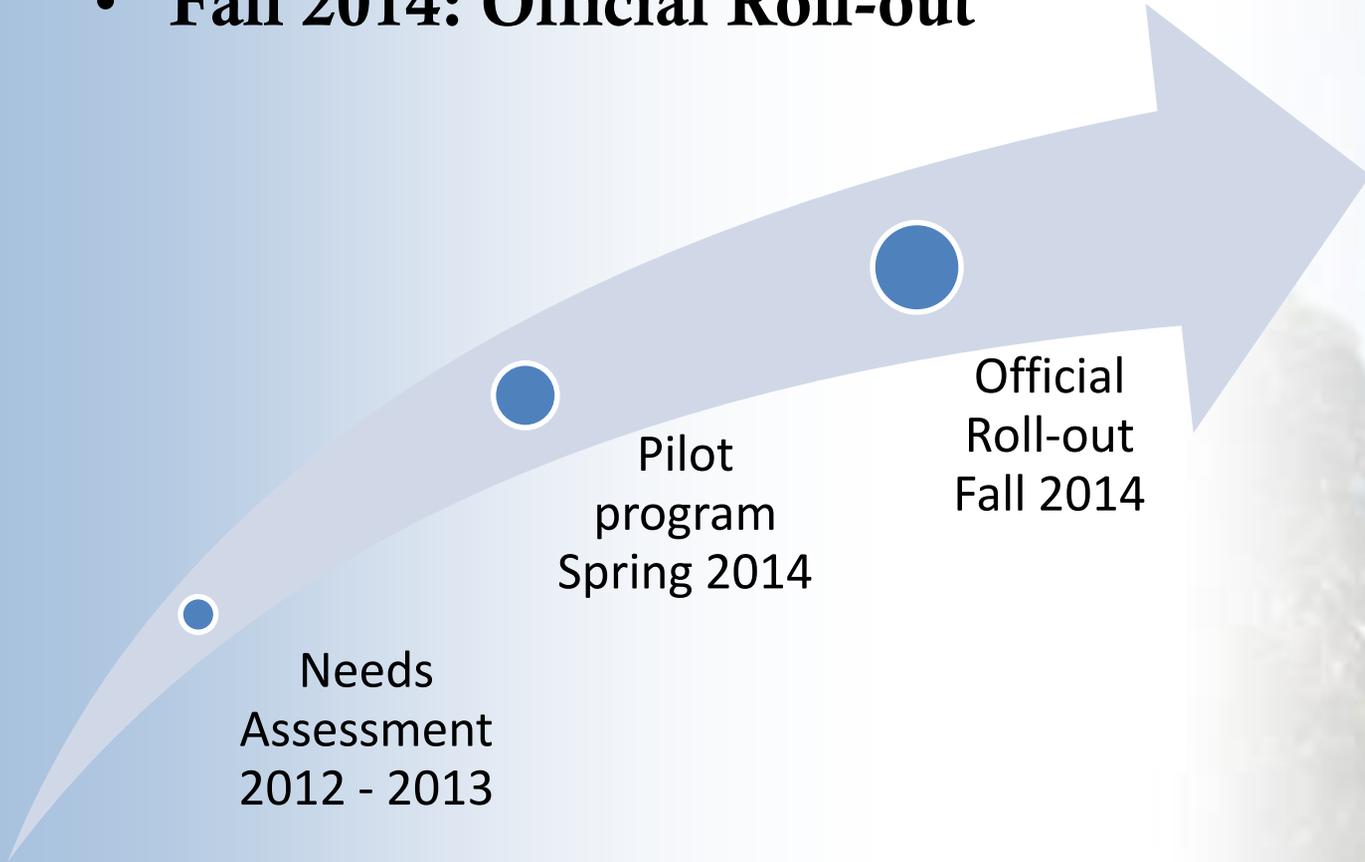
This question is important to determine whether we can add captions or only provide transcripts.

- Note the the proportion of faculty asserting they have copyright ownership/permission has DOUBLED.**

| Copyright Ownership | Spring 2014 | Spring 2014 – present |
|---------------------------------------|--------------------|------------------------------|
| No – for any of it | 44% | 44% |
| Yes – for everything I need captioned | 23% | 56% |
| Yes for some, no for others | 13% | NA |
| Not sure | 12% | NA |
| Other | 9% | NA |

Introduction of Captioning Services

- **2012 ~ 2013: Needs Assessment**
- **Spring 2014: Pilot Testing**
- **Fall 2014: Official Roll-out**



Needs
Assessment
2012 - 2013

Pilot
program
Spring 2014

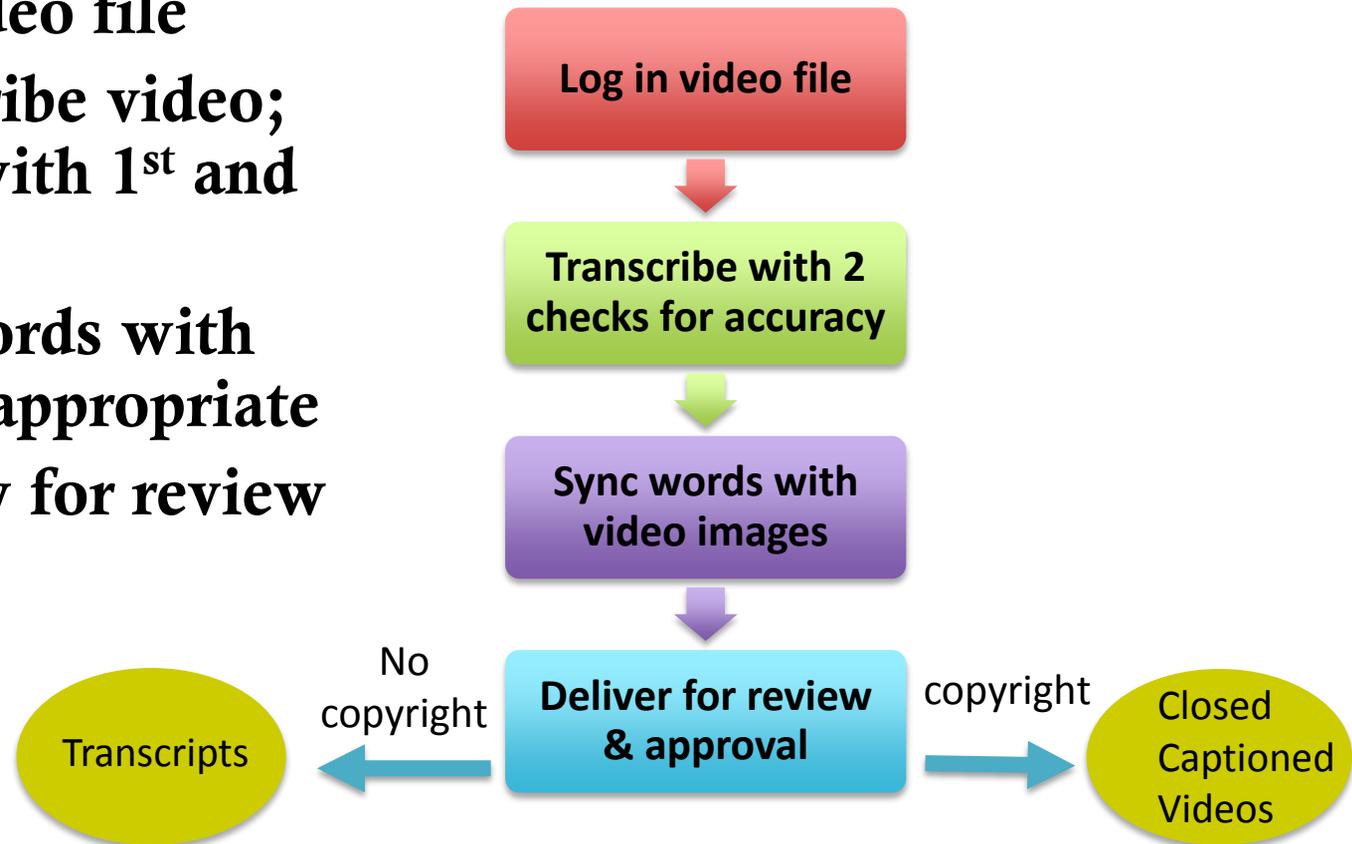
Official
Roll-out
Fall 2014

Captioning Services Infrastructure

- **Hardware and Software:**
 - Windows and Macs, Dragon Naturally Speaking, MovieCaptioner, AutoSync, YouTube, DVD Studio Pro, etc.
- **Online Info Hub:**
 - FAQs, request form via Google form, media drop box, media library repository, etc.
- **Resources:**
 - 2 staffs as additional duties; 6 part-time student assistants (50 hours/week)
 - [Automatic Sync Technologies](#) (AST) vendor
- **Documentation:**
 - Job/workflow & software used, master database log sheet, etc.

Transcription Workflow

1. Log in digital video file
2. Manually transcribe video; check accuracy with 1st and 2nd corrections
3. Sync/time set words with video images, if appropriate
4. Deliver to faculty for review and approval



Assessing the Usage and Impact of Video Captioning

- **Collect information from faculty for whom we provided captioning/transcribing support**
 - **Case #1 – Computer Science 223 Python Language (Fall 2015)**
 - **Case #2 – Student feedback from 10 different courses (Fall 2015)**
 - **Case #3 – Performance differences in viewing videos with vs. without captions (Fall 2015)**

Case #1:

CS 223 Python Language

- **20 upper division students (8 female, 12 male) enrolled; 3-credit computer science course**
- **Students are required to view course videos (30 to 60+ min) prior to face-to-face class**
- **Instructor distributes in-class programming exercises and lectures/discusses key concepts**
- **Students are randomly assigned to groups for peer discussion or debugging**
- **Students are graded based on weekly quizzes, programming exercises, exams, & individual and group projects**

Case #1: Usage and Impact of Captioning

The following survey questions were distributed during class:

- Are you aware that captioned videos are available?
- Did you look at any captioned video?
- If answer to [the above] is no, why not?
- If answer to [the above] is yes, will you keep look at the captioned videos?

Case #1: Usage of Captioned Videos

- **Are you aware that captioned videos are available?**
 - **7 out of 20 (35%) students are aware the availability of captioned video**
- **Did you look at any captioned video?**
 - **2 out of 20 (10%) students viewed captioned video**

| Questions | Yes | No |
|--|------------|------------|
| Are you aware that captioned videos are available? | 7 (35%) | 3 (15%) |
| Did you look at any captioned video? | 2 (10%) | 8 (40%) |

Case #1: Reasons for Not Watching Captioned Video

- **I wasn't aware that they were available. The lectures were easy to hear though**
- **The other videos work just fine**
- **Because they aren't readily available on canvas... I'm too lazy to seek them out**
- **Not applicable**
- **Was not aware of the captioned videos. But I don't have trouble understanding your lecture. Plus your videos are a combination of slides + interactive. I can pretty much read and see what you're saying anyway.**
- **I can clearly understand the words spoken in the video**

Case #1: Reasons to Continue Viewing Captioned Videos

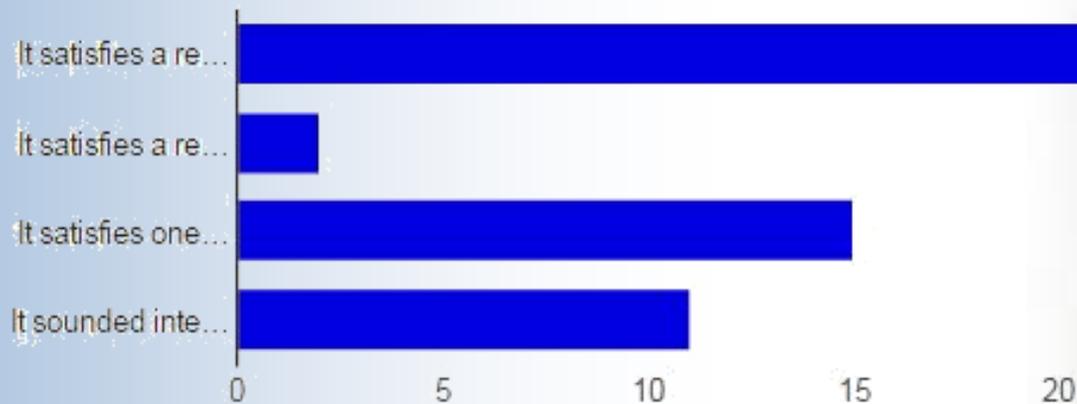
- **I found it helpful to watch the captioned videos to capture complex programming concepts and ideas as I am experiencing programming for the first time. It is really helpful to take important notes on the lecture videos.**
- **The other videos work just fine**
- **I am content with the audio quality of the videos and do not find the captioned videos necessary at this point in time.**
- **I am not sure. I may see those videos in future if I come across something which I am not able to understand.**

Case #2: Video Captioning Usage

- **We contacted 30 faculty members who have used our captioning service and asked them to forward an anonymous survey to their students.**
- **Courses included anthropology, biology, geology, physics, psychology, statistics and engineering technical writing**
- **Students had two weeks to respond. Participation was voluntary.**
- **54 out of a total of 401 students from 10 courses have responded. The return rate is 13.5%**

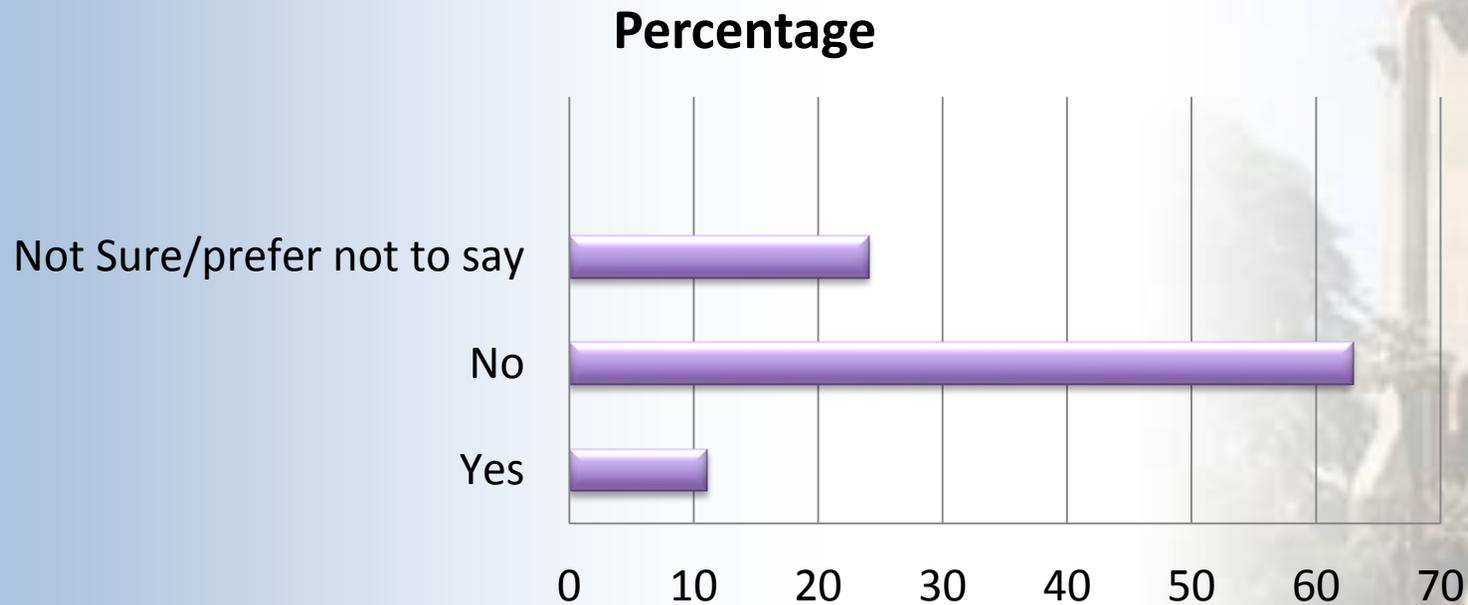
Case #2 - Why Did You Take This Course?

- **Required for my Major = 22 (60%)**
- **Required for my Minor = 2 (5%)**
- **GE requirement = 15 (41%)**
- **It sounded interesting = 10 (27%)**



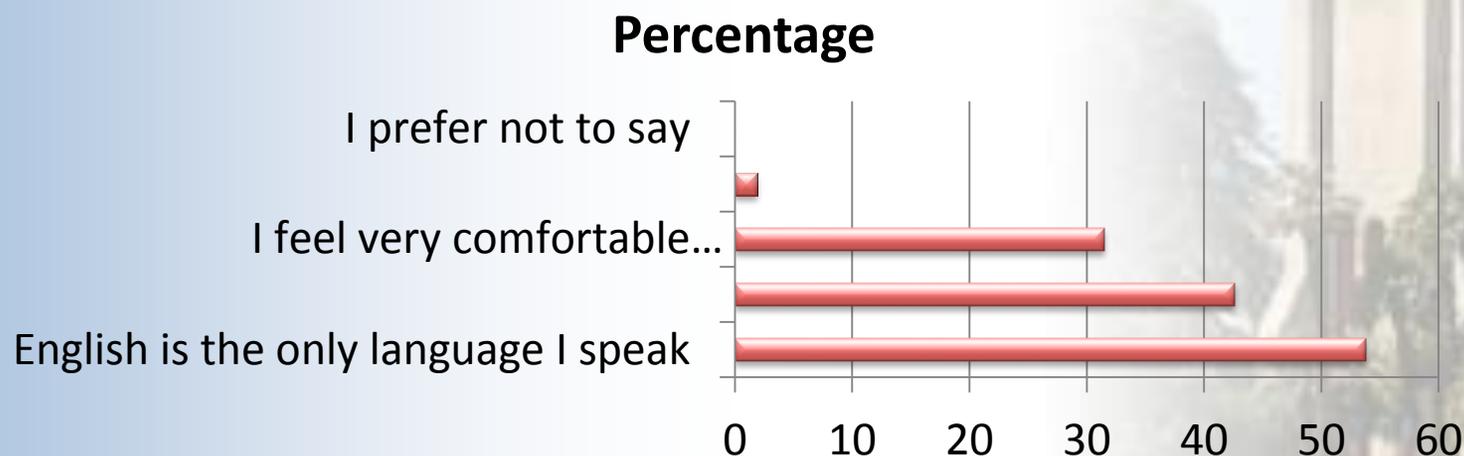
Case #2: Are you eligible for instructional accommodations?

- Yes = 6 (11.1%)
- No = 34 (63%)
- Not Sure/prefer not to say = 13 (24.1%)



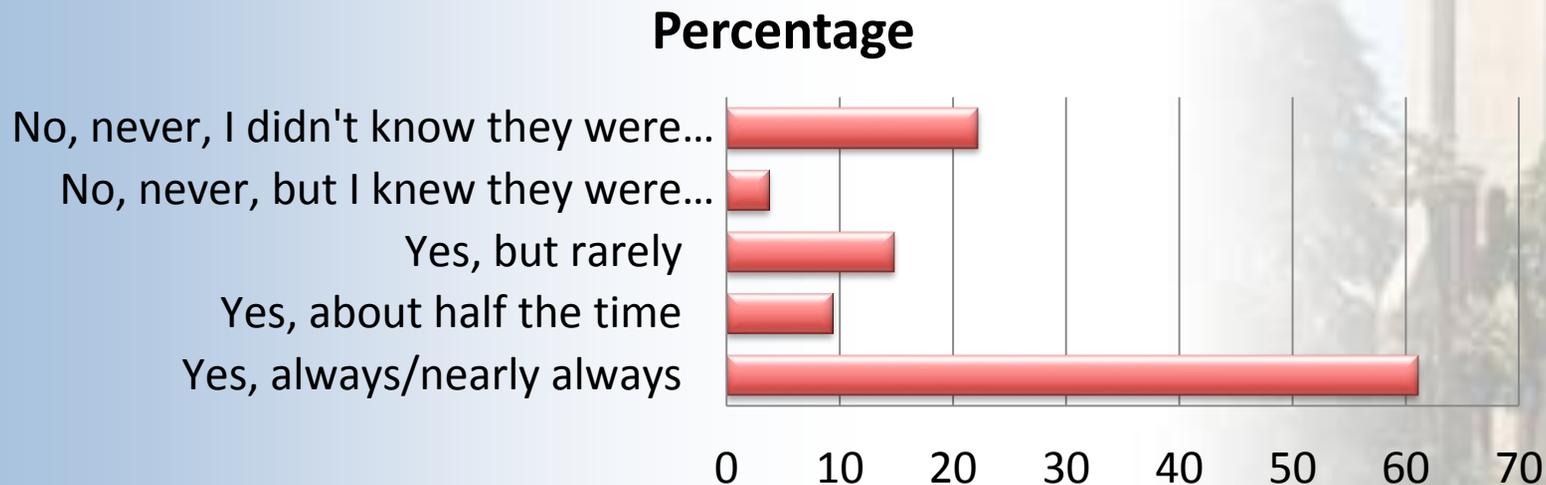
Case #2: Your Experience/Comfort Level with English

- English is the only language that I speak = **29 (53.8%)**
- I speak one or more languages other than English = 23 (42.6%)
- I feel very comfortable learning/studying in English = 17(31.5%)
- I would feel more comfortable learning/studying in English if my language skills were stronger = 1 (1.9%)
- I prefer not to say = 0



Case #2: Use of Captioning

- Total respondents = 54
- Yes, always/nearly always = **33 (61.1%)**
- Yes, about half the time = 5 (9.3%)
- Yes, but rarely = 8 (14.8%)
- No, never, but I knew they were available = 2 (3.7%)
- No, never - I didn't know they were there! = 12 (22.2%)



Case #2: Why/When Do you use the Captions?

Captions help me learn (23)

- with studying/learning, clarify, affirm understanding, note taking, spelling, pause and replay, etc.

Noisy environment (13)

- ...when I cannot hear, in a noisy classroom, in a large classroom, etc.

Speaker clarity (11)

- Has accent, is hard to understand, not clear, speaks too fast, etc.

Help with hearing impairment (2)

Others (4)

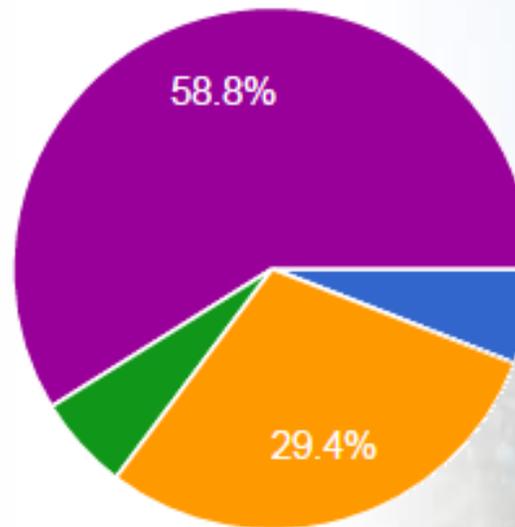
- Forget my headphones when listening in a lab or library
- Lecture slides help
- Captions availability

Case #2: When/Why you do not use captions

- **Audio is loud/clear enough (7)**
- **No need, irrelevant, freedom to use the sound and rewatch the video, speakers have no accent (7)**
- **Always use it (5)**
- **Distract from the video (3)**
- **Enjoy the facial expression (1)**
- **I listen instead of read (1)**
- **No closed captions (1)**

Case #2: Preference for Live Presentation vs. Archived Videos

- Strong preference for the live version = 1 (5.9%)
- Moderate preference for the live version = 0
- No preference = 5 (29.4%)
- Moderate preference for the video/archived version = 1 (5.9%)
- Strong preference for the video/archived version = **10 (58.8%)**
- Other = 0



Case #2: Reasons for Preferences

Live Presentation (3)

- Easier to hear and focus
- Ask questions
- Motivate speakers to talk

Archived Videos (9)

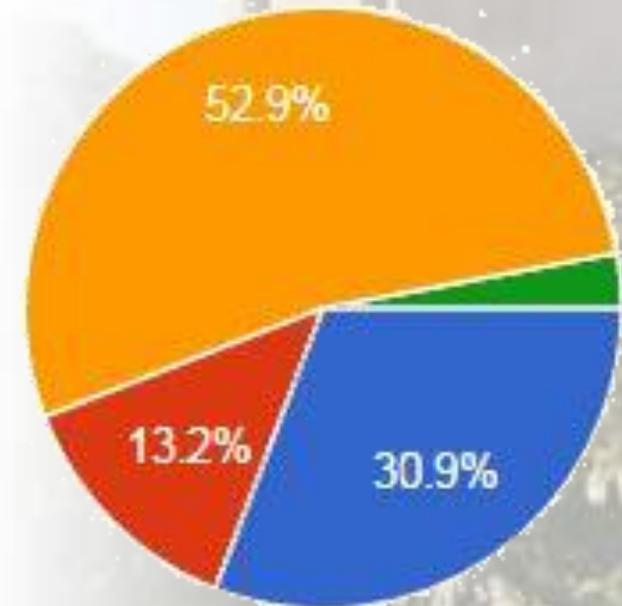
- Freedom to review, pause, and rewind to learn (5)
- Fit into my schedule better
- Flexibility for commuter students
- Great for note taking to get exact quotes
- Speakers are difficult to understand

Case #3: Does Closed Captioning Impact Student Learning?

- All Engineering majors are required to take ENGR 100W course and attend the Green Talk guest speaker series.
- *GreenTalk* lectures feature practicing engineers, scientists, and technical experts who deliver up-to-date briefings on how they deal with environmental issues
- The live lecture series is held in the Engineering Auditorium; students enrolled in evening sections have to view recorded versions of the talks
- Survey distributed to 3 sections of ENGR 100W to assess whether closed captioned videos make any difference in students' learning. We received 68 out of a total 68 responses. Participation points given to those who provided their names.

Case # 3: Attendance at Live vs. Video Presentation

- **Attended the live presentation = 21 (30.9%)**
- **Watched the YouTube video presentation without closed captions = 9 (13.2%)**
- **Watched the YouTube video presentation WITH closed captions = 36 (52.9%)**
- **Other = 2 (2.9%)**



Case # 3: Assessing student learning

- Survey included 7 multiple choice and 2 open ended questions about the content delivered by the speaker
- Students who viewed the videos with captioning answered significantly more questions correctly than those who viewed videos without captions or who attended the live presentation ($F = 29.33, p < .000$).

| | Attended LIVE presentation | Viewed Video WITHOUT captions | Viewed Video WITH captions |
|--|----------------------------|-------------------------------|----------------------------|
| Average number of multiple choice questions answered correctly | 2.77 | 4.22 | 4.89 |

Wrap-up: Take-Away #1

- **“Good for the goose, good for the gander” with your universally accessible teaching content**



Wrap-up: Take-Away #2

Plan for appropriate online distribution – make sure all of the geese and all of the gander can benefit from your teaching ...

Make sure students realize that closed captioning is available and how to use it. (Case #1)

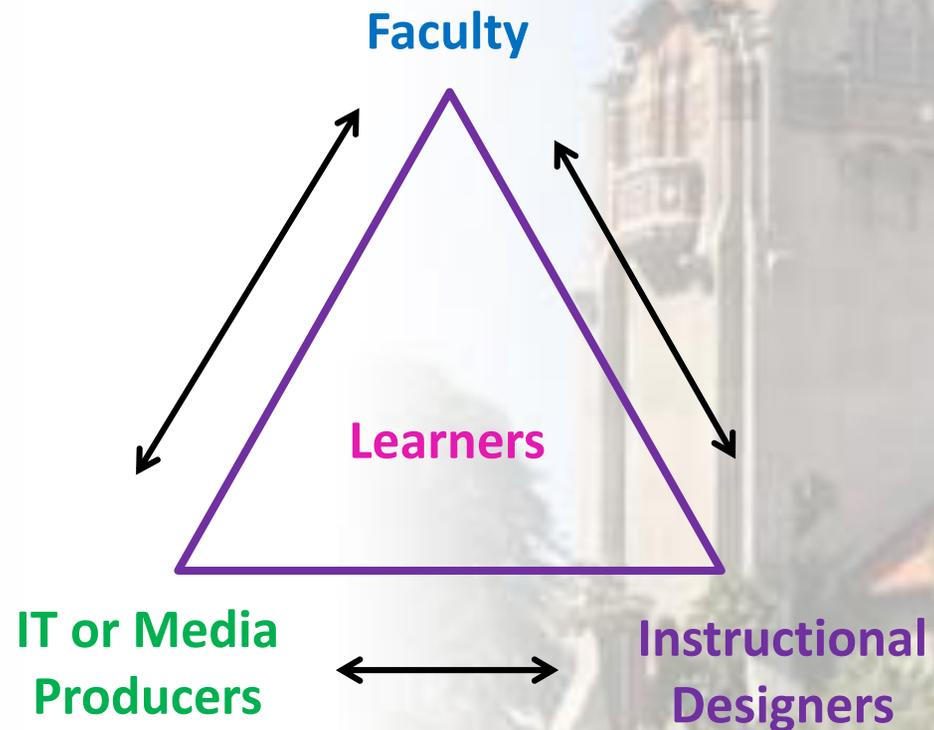
Closed captioned videos are most effective:

- **When students encounter new complex concepts or terminologies (Case #1)**
- **When students need to clarify, affirm understanding or spelling (for non-native English speaker), pause and replay, note taking, etc. (Case #2)**
- **When students view different speakers presenting different topics in a big lecture hall (Case #3)**
- **When students are tested of the video content in a shorter time frame (Case #3)**
- **When there is relevancy or connection between video content and student assignments or classroom activities (Case #3)**

Wrap-up: Take-Away # 3

Universal Design in Teaching:

- Provide multiple ways or strategies in presenting your teaching content or classroom activities
- When designing or presenting multimedia course materials, include instructional designers, media producers, IT specialists and librarians as early as possible



Thank you!!

Questions?



Points of Contact

Amy Strage, Assist. VP for Faculty Development & Director, Center for Faculty Development

San Jose State University

Amy.Strage@sjsu.edu

Phone: 408.924.3715

**Elizabeth Tu, Instructional Designer & Instructor
Center for Faculty Development**

San Jose State University

Elizabeth.Tu@sjsu.edu

Phone: 408.924.3093