Science Theater Education Programming System

PI Brad McLain

Evaluator Jes Koepfler

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Professional Identity

A person's self-perceptions as a contributing member of a larger group of colleagues and as part of an extended profession with goals, methods, ideals, behavioral ethics, and other values.

Informal Science Educator Identity

+ Work in alternative learning environments
+ Serve “recreation mode” audiences
– +Indirect and varied pathways into the profession
– +Cover a wide range of science topics
– Isolation from the larger community
– Lack growth opportunities as education professionals
– Limited pedagogical skills development opportunities

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2 Key Questions

Can enhancing professional identity among informal educators lead to increased job satisfaction, better job performance, and staff retention?

What are the best ways to enhance the professional identities of museum educators?

Challenge them: high stake on individual educators, demand for greater engagement and skill, involve an extended network of professionals

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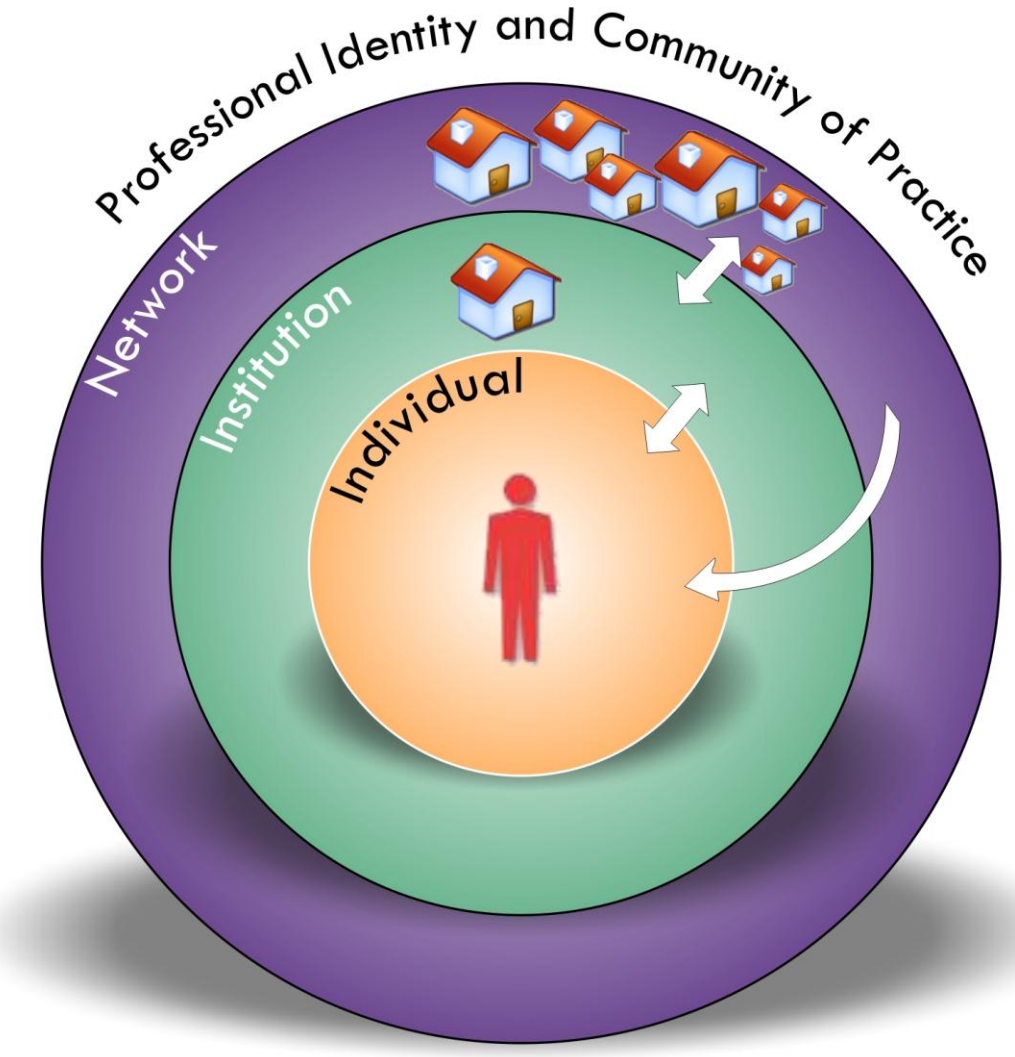
- Collaborative of museums and sci-tech companies
- Interactive media-enhanced museum theater system
- STEP-by-STEP tools to produce theatrical science programming
- Enhancing IS educator professional identity
- Building institutional capacity, and informing the field via eval & research

Components

- Museum partnership network: CoP
- STEPS Software System
- Suite of astrobiology shows
- Professional Development Products: workshops, online tutorials, inter-museum interactions, project wiki
- Research & Evaluation on professional identity, institutional capacity and multi-institution collaborative networks.

Research & Evaluation



1. What are the impacts of participation in an innovative, highly collaborative project which depends on high level involvement and expertise from informal educators?
2. Does it enhance their professional identities?
3. Does it build institutional and network capacity?
4. And, do benefits cycle back to the development of the individual educator?

- XSci: University of Colorado Denver
- Science Museum of Virginia
- The Chabot Space and Science Center
- The North Museum of Natural History and Science
- Space Center Houston
- Montshire Museum of Science
- Kansas Cosmosphere
- The Farmington Museum
- The Bishop Museum
- The Astronomical Society of the Pacific
- Del Padre Visual
- ASTC
- UXR Consulting
- Institute for learning innovation
- The NASA Astrobiology Institute
- Space Science Institute

ASSOCIATION OF
SCIENCE-TECHNOLOGY
CENTERS
INCORPORATED

Team Leadership Theory:
A Distributed Leadership Model for the CoP

- A clear & elevating goal
- Results-driven structure
- Competent team members
- Unified commitment
- Collaborative climate
- Standards of excellence
- Principled leadership
- External support

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TLT in Action: Sub-Teams

1. Story: Larry Gard, Marie Kubo
2. Software: Mark Archer
3. Audience Participation: Greg DeFrancis
4. Asset Production: Tom Holcomb
5. Online Professional Development: Wendy Hancock, Margaret Glass
6. Research & Evaluation: Jes Kopfler, Martin Storksdieck, Mike Marlow, Scott Sala

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TLT in Action: Master Timeline

ID	Task Name	Start	Finish	Predecessors	Resource Names
1	**Software**	Fri 5/1/09	Tue 10/5/10		Mark Archer
2	Develop general content / virtual backstage	Tue 2/2/10	Tue 6/15/10	21,24,25,34,35,36	
3	Construct Private Alpha Build (based on Script #1) and testing	Fri 5/1/09	Thu 8/27/09	21,24	
4	Receive feedback from each museum partner on the Alpha Build	Mon 6/1/09	Fri 6/5/09	65	
5	Identify contents and full functionality of Virtual Backstage	Mon 2/1/10	Fri 4/23/10	23,24,25,35,36,37	
6	Choose performer for demo of Script #1 at ASTC Conference	Tue 11/3/09	Wed 12/2/09	27,38,51	
7	Finalize demo of Script #1 for ASTC Conference	Tue 9/1/09	Thu 10/15/09	22	
8	Finalize demo of story building process for ASTC Conference	Tue 9/1/09	Thu 10/15/09		
9	Perform demo of STEPS at ASTC Conference	Fri 10/30/09	Tue 11/3/09		
10	Conduct internal testing of STEPS with one member of each group	Mon 11/16/09	Tue 12/1/09		
11	Integrate all functions and features	Mon 11/9/09	Mon 2/1/10		
12	Finalize Virtual Backstage contents	Mon 11/9/09	Mon 2/1/10	98,99	
13	Launch and test at partner museums	Fri 2/5/10	Thu 4/1/10		
14	Gather final feedback from all museum partners	Thu 4/1/10	Tue 6/1/10		
15	Conduct de-bugging and address technical issues	Thu 4/1/10	Tue 6/1/10		
16	Launch STEPS publicly at ASTC 2010 Conference	Sat 10/2/10	Tue 10/5/10		
17					
18					
19	**Story**	Fri 10/17/08	Mon 11/2/09		Larry Gard
20	Develop broad concepts of three stories	Fri 10/17/08	Wed 12/31/08		
21	Write rough draft of Script #1	Wed 12/31/08	Fri 1/30/09		
22	Create outline for scripting tool	Mon 3/30/09	Mon 3/30/09	21	
23	Provide ProDev team with stories in current form (outlines, scripts, etc.)	Thu 4/2/09	Thu 4/2/09		
24	Write rough draft of Script #2	Wed 4/1/09	Thu 4/30/09		
25	Write rough draft of Script #3	Mon 5/4/09	Fri 7/31/09		
26	Provide ProDev team with "almost final" versions of scripts	Mon 7/13/09	Mon 7/13/09		
27	Write final draft of Script #1	Mon 8/3/09	Tue 9/1/09		
28	Provide final scripts				
29	Write final draft of				
30	Write final draft of				
31					
32					
33	**Asset Produ**				
34	Compile rough dra				
35	Compile rough dra				
36	Compile rough dra				
37	Provide available a				
38	Finalize draft of as				

Project: STEPS Project_2009-01-29
Date: Thu 1/29/09

ID	Task Name	Start	Finish	Predecessors	Resource Names
39	Finalize draft of assets for Script #2	Thu 10/29/09	Tue 11/24/09	52	
40	Finalize draft of assets for Script #3	Wed 12/2/09	Wed 12/30/09	53	
41					
42					
43	**Audience Participation**	Fri 10/17/08	Tue 12/1/09		Greg DeFrancis
44	Conduct participation surveys	Fri 10/17/08	Wed 12/31/08		
45	Write rough draft of audience participation for Script #1	Mon 2/2/09	Wed 3/4/09	21	
46	Create concept draft of audience participation for Script #1	Thu 3/5/09	Fri 5/1/09	45	
47	Write rough draft of audience participation for Script #2	Mon 5/4/09	Tue 6/2/09	46,24	
48	Create concept draft of audience participation for Script #2	Thu 11/6/08	Thu 11/6/08		need dates
49	Write rough draft of audience participation for Script #3	Mon 8/3/09	Fri 10/30/09	25	
50	Create concept draft of audience participation for Script #3	Thu 11/6/08	Thu 11/6/08		need dates
51	Finalize draft of audience participation for Script #1	Wed 9/2/09	Thu 10/1/09	27	
52	Finalize draft of audience participation for Script #2	Fri 10/2/09	Wed 10/28/09	29	
53	Finalize draft of audience participation for Script #3	Tue 11/3/09	Tue 12/1/09	30	
54					
55					
56	**Professional Development**	Thu 11/6/08	Mon 2/1/10		Wendy Hancock
57	Receive first drafts of stories and available assets	Mon 2/1/10	Mon 2/1/10	21,24,25,34,35,36	
58	Write first draft of Astrobiology tutorial	Fri 4/3/09	Mon 5/18/09		
59	Conduct 1st round of testing by museum partners with AFGU members	Mon 5/18/09	Mon 6/1/09		
60	Incorporate feedback and updated scripts into tutorial	Mon 6/1/09	Tue 6/30/09		
61	Disseminate second draft of Astrobiology tutorial	Wed 7/1/09	Wed 7/1/09		
62	Conduct 2nd round of testing by museum partners with AFGU members	Wed 7/1/09	Mon 7/13/09		
63	Receive "almost final" story scripts and available assets	Tue 11/3/09	Tue 11/3/09	37,26,38	
64	Incorporate feedback and updates to story and script	Mon 7/13/09	Mon 8/3/09		
65	Receive final stories/scripts and final collection of assets	Tue 11/3/09	Tue 11/3/09	28,27,29,30	
66	Create final version of Astrobiology tutorial	Tue 8/18/09	Wed 9/30/09		
67	Need milestones for STEPS software tutorial	Thu 11/6/08	Thu 11/6/08		need dates
68					
69	**Evaluation/Research**	Tue 11/18/08	Wed 9/8/10		Martin Storksdieck
70	Finalize site visits	Tue 11/18/08	Fri 1/30/09		
71	Complete final draft of Pulse Check	Tue 11/18/08	Tue 2/3/09		
72	Receive IRB approval	Tue 11/18/08	Fri 2/13/09		
73	Deploy Pulse Check #1	Fri 2/13/09	Fri 2/13/09		
74	Determine Basecamp efficacy	Mon 1/12/09	Fri 2/13/09		
75	Create visitor research wiki site	Mon 2/9/09	Tue 3/3/09		
76	Finalize protocol for story testing	Mon 2/9/09	Tue 3/3/09		

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Task — Milestone — External Tasks
Split — Summary — External Milestone
Progress — Project Summary — Deadline

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ID 7/13/09 7/27/09 8/10/09 8/24/09 9/7/09 9/21/09 10/5/09 10/19/09 11/2/09 11/16/09 11/30/09 12/14/09 12/28/09 1/11/10 1/25/10 2/8/10 2/22/10 3/8/10

8/14

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TLT in Action: Network Whip

December 2008

STEPS NewsFlash
final NewsFlash of 2008...

Hi all, and welcome to another STEPS NewsFlash from the Chabot team.

Again, a little behind schedule, but perfectly timed to send the entire STEPS community warm wishes for the holidays and for a great start to 2009!

-Tamara

Brave new world of video conferencing

Congratulations to all who successfully set up their webcams and navigated WebEx's video conference system -- we survived our first full-group video conference! If you have questions or encountered problems, check with your local IT support resources, or contact Lisa and Brad.

Our first STEPS telecon of 2009 will be Wednesday, January 14th. Look forward to seeing more STEPS partners by webcam next month!

Story & Audience Participation Subteam Summit

Summit Summary

Members of the Story & Audience Participation subteams met by conference call on December 23 to share progress updates. The Story team has developed storyline concepts for the first set of three STEPS shows. Drumroll, please...

- Life Beyond our Solar System: This 10-minute demo-style show will feature a NASA administrator speaking before Congress to request funding to send a new probe to an extrasolar planet.
- Life On Earth: This 15-minute mid-level dramatic script will feature a professor unveiling the discovery of a previously unknown life form that exists only in cyberspace.
- Life in Our Solar System: This 20-minute, no-holds-barred theatrical style story will be a farcical takeoff on 2001: A Space Odyssey. Two astronauts on a mission to Mars will awaken from sleep to find that the computer (HAL-D) has taken over the ship and is heading to search for life on Europa instead.

Audience Participation and Software subteam members chimed in with thoughts about how these storylines will affect each subteam's work, and how they can help contribute to the script development.

You'll find more about the Story subteam's work on our Basecamp site (including a storyboard writeup for the 20-minute show posted in the file section).

Survey coming soon

A survey is in the works to gain more information about the

Mars Interceptor
Mars Interrupted
The Search...
for Life
EXTREME
What?
PLANET
HUNTER
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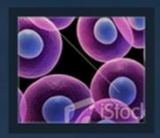
STEPS
Science Theater Education Programming System
Where the drama of science meets the science of drama

2. RESULTS



Cells

If it's alive, it is made of one or more cells. Single-celled life will be a real challenge to detect remotely, but some astrobiologists think it might be ubiquitous in the universe. When life forms become more complex with multiple cells, the cells begin to differentiate or specialize. Although all cells started out the same, some may specialize to become muscles or bones or eyes. The most ambiguous, and the jury is out on this one, is the virus. It doesn't seem to be made of a cell, but seems to otherwise be "living".

Cells

Organized/Complex Form

Uses/Exhanges Energy, Produces Heat/Waste

Homeostasis

Growth

Reproduction

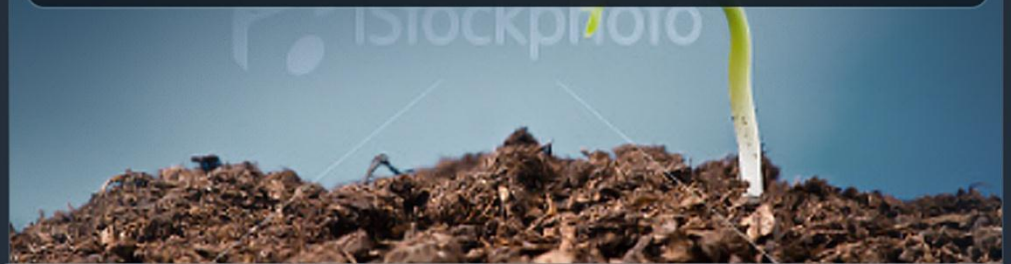
Sleeps

Dies

Moves

Carbon based DNA

PREVIOUS NEXT



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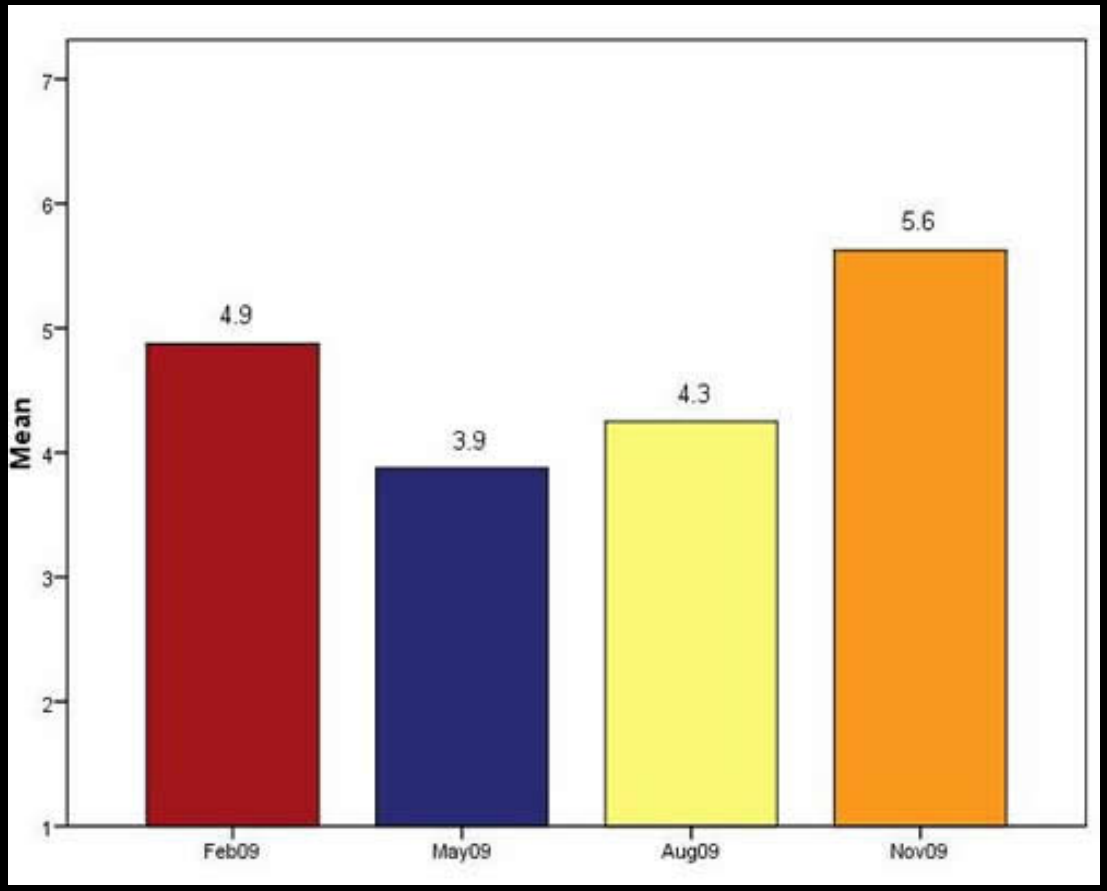
STEPS: Show Planner
File
Story
Backstage
Properties
Title:
parkscreen
Template:
Fullscreen Image
Template Options
Image:
parkscreen.jpg
Crossfade:
On
Off
Cue Options
Name:
Target:
Target
Trigger:
Click
Time
Effect:
Effect
Direction:
In
Out
Duration: (s : ms)
00 : 000
Delay: (m : s : ms)
00 : 00 : 000
Cue to Video?
Yes
No
Sound Effect:
PLANET
HUNTER
Preview
Timeline
parkscreen
jungle
Scene 3
Add Asset
Add Cue
Remove Cue
Name
Target
Effect
Direction
Sound
Timeline Collection
New Timeline
Research
Add Timeline
Advanced...

Professional Development Outcome Categories

1. Awareness, knowledge and understanding
2. Engagement and interest
3. Attitude
4. Skills development
5. Behavior & Transfer

Pulse Checks



"I have grown in my professional capacity through my collaboration on this project." (scale 1-7)

Institutional Impact

"STEPS gave us the opportunity to create a new experience in a planetarium that we couldn't before. We have equipment that we didn't have before. We have a reason now to collaborate with the [local] theater community. This is the first time we really have a reason to bring something to them – that's planted the seed for some opportunities to work together, even if it might just mean [my staff] and an intern from the theater company could come and sit down and write a script together."

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Professional Development

"In the actual project, I was put in such a leadership position, out of necessity really [for the project], I think what it did for me, I was given the opportunity to demonstrate my leadership – to manage stuff. That's something that I had [at my previous job] and you know I've never really been able to do [it at my current job]. This project gave me the opportunity to prove myself. I was really lucky. I was given a promotion when we were doing two layoffs."

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Professional Network

"It was really great for networking. I think the trips – the face-to-face – going to other museums was really important. I think that's really what I got the most out of it – the networks. Because of all the layoffs at work, I've really lost any type of mentor even to learn off of, but through the project I've actually been able to learn and expand my knowledge beyond what [my institution] has. I think that's really what I got out of it – there's much more out there than what we just do."

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Role of Storytelling

"It made me think a little bit more about what makes a good story. Some of the stuff we talked about early on is stuff that I still think about when we develop new programs and whatnot. It was useful for us to hear about the role of story, or storytelling, as one of our ways of looking at science education."

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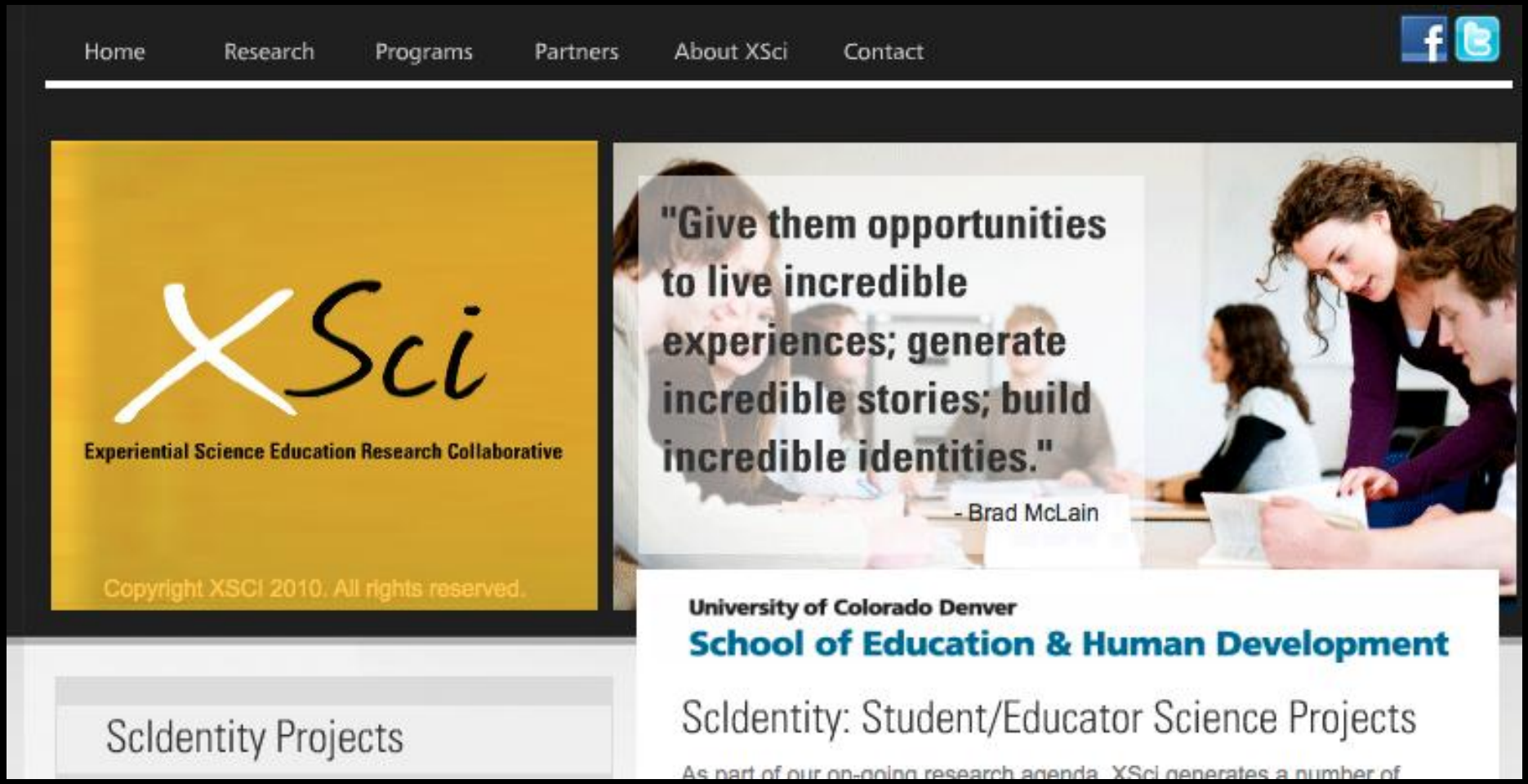

XSci-UCD.org
STEPSdownload.com
STEPSproject.org

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