

A PATHWAY to Help with Physics Teaching

Brian Adrian and Dean Zollman

Kansas State University
and

Scott Stevens
Carnegie Mellon University



Supported by the National Science Foundation under grant numbers DUE-0226157, DUE-0226219, ESI-0455772 & ESI-0455813

Thursday, Oct 19, 2006

NSTA Omaha



Physics Teaching Web Advisory PATHWAY

- A new type of digital library for physics teaching
- Combining
 - CMU digital video library technology
 - KSU Physics Education expertise
 - Materials contributed by teachers
- Offering continuously improving web-based assistance and expertise for teachers of all levels

www.physicspathway.org



PATHWAY Components

- Synthetic Interviews
- Digital Video Library
- Connections to
 - National Science Education Standards
 - Research in Physics Education
 - Helpful Web sites

www.physicspathway.org



<http://www.physicspathway.org>

Synthetic Interviews | Digital Library | Home | News | About | People | Publications | FAQs | Links | Contact Us



Physics Teaching Web Advisory

[>> Ask Questions about Physics Teaching](#)

* Partial support for this work is provided by the National Science Foundation's National Science, Technology, Engineering, and Mathematics Education Digital Library Program under grant EEC-0226219 and EEC-0226157.



Best View: 1024x768, IE 5.0 or better

Last Updated: 20070629

Created by: Chris van Cleave

Maintained by:



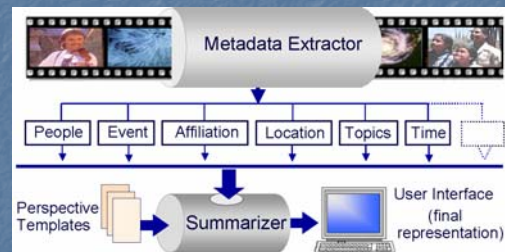
A New Look

- We are [giving](#) it a [new front end](#).
- And now the library.

www.physicspathway.org

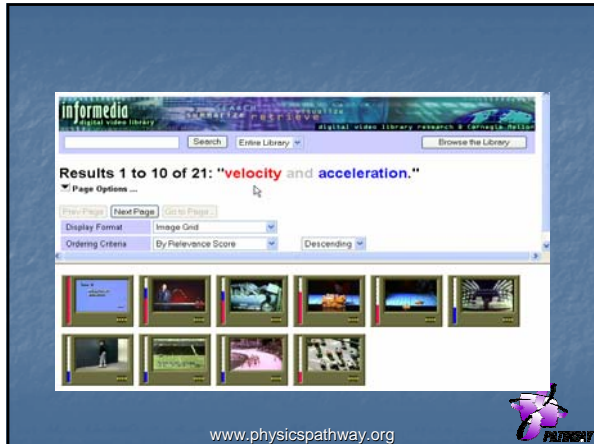


informedia digital library

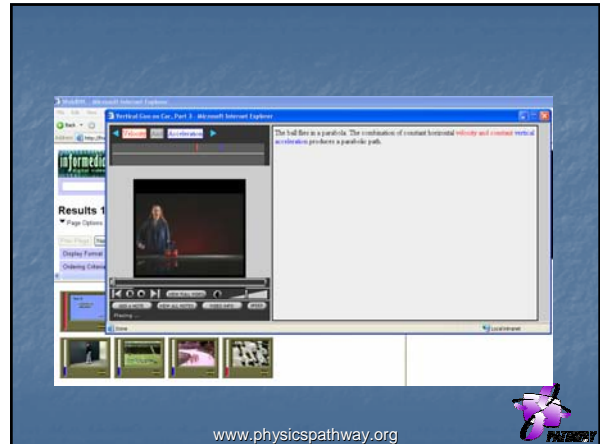


www.physicspathway.org





www.physicspathway.org



www.physicspathway.org

Right now

- Over 100 clips
- 20 from the Video Encyclopedia of Physics Demonstrations
- Not downloadable

www.physicspathway.org

Soon*

- Add Paul Hewitt Workshops
 - 8 lessons on teaching conceptually
 - 1 lesson on cartooning
- Add contributed videos
- Perhaps add some SI videos

www.physicspathway.org

Long-term

- Integrate the video library with the SI
- Many more videos on all topics
 - Contributed by users
 - Generated in-house?
 - Donated by companies?

www.physicspathway.org

A Synthetic Interview

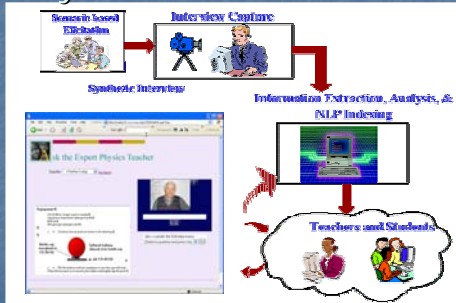


Question:

Ask

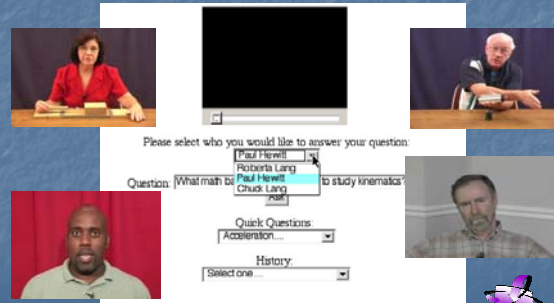
www.physicspathway.org

Synthetic Interview Creation



www.physicspathway.org

We Offer Multiple Personalities



www.physicspathway.org

Responses Available Now

- Global answers
- Answers to background questions
- Answers about tools
- Many kinematics answers

- We have answers to more than 1,000 questions!

www.physicspathway.org

How Do We Choose Questions?

- Began with "seed" questions and answers.
- Logged and analyzed 1400 user questions.
- Question categories emerged.
- Roughly 40 questions per topic.
- We selected more than 120 topics to start.
- This will cover the majority of a typical two-semester introductory physics course.

www.physicspathway.org

Who is asking questions?

- Pre- and In-service teachers
- Meeting attendees
- Workshop participants
- Others
 - Project staff
 - Testers
 - Random people?

www.physicspathway.org

What are they asking? n=2498 questions

- 70% pedagogical
- 12% content
- 8.0% single word or concept
- 6.3% miscellaneous
- 2.0% demonstrations
- 1.4% activities
- 0.2% assessment

www.physicspathway.org

Features to add

- Literature info
- Associated media
- Science Standards
- Feedback links
- FAQ list
- Topics list



www.physicspathway.org



Still to do

- Expand
 - More Content
 - More Features
 - More personalities
- Does it work?
- How's the coverage?
- Evaluation – is it useful and effective?
- Address size (speed) issue

www.physicspathway.org



We would like your help

- Suggest questions to ask the experienced teachers
- Try the system at www.physicspathway.org
- Give us feedback
 - Follow link on SI page
 - Fill out form now
 - Email badrian@phys.ksu.edu

www.physicspathway.org



Questions or Comments?

- Brian Adrian
badrian@phys.ksu.edu
- www.physicspathway.org

THANK YOU!

www.physicspathway.org



Session Evaluation

- Please complete the short evaluation.
- Return to drop-off boxes no later than 12:30 PM on Saturday, October 21.
- Use blue or black pen or pencil.
- Fill in completely.
- Erase or "X" any marks you wish to change.

www.physicspathway.org

