



## The NSTA Learning Center

2013 National Congress on Science Education

July 2013

San Juan, Puerto Rico

Flavio Mendez



Promoting Excellence and Innovation in Science Teaching and Learning for All

# Agenda

- Blended Learning
- NLC Overview
- NLC Cohort Models
- Teacher Learning
- NCSE2013 Cohort



# National Education Technology Plan

Through online learning systems, teachers may enhance their learning through **blending the best of onsite PD with online PD** that provides **immediacy, convenience, self-direction, and collaboration** with other colleagues and experts via professional learning communities.

For teachers to effectively facilitate using interactive resources, learning systems, and connectedness to online communities, **teachers need to experience it firsthand—as part of their own learning and professional development.**

US Department of Education (2010). *Transforming American education: Powered by Technology*. Washington, DC: Office of Educational Technology.



# A Critical Piece of the Blended Learning Solution

- Self-Directed Access
- 10,800+ resources
- Free tools to help teachers personalize, *and document* their learning
- Immediate access to online advisors and colleagues through chat and discussion
- Innovative teacher badge recognition system

The screenshot displays the NSTA Learning Center website. At the top, the logo for 'The NSTA Learning Center' is visible, along with a search bar and navigation links for Home, My PD Tools, Subjects, Learning Resources & Opportunities, Community Forums, Education Administrator, and Help. Below the header, a personalized welcome message for 'Albert' is shown, including a 'View Cart' and 'Admin' link. A navigation bar contains links for My Profile, My Library, My PD Indexer, My PD Plan and Portfolio, My PD Record and Certificates, My Calendar, My Notepad, My Community Forums, and My Help Desk. The main content area features a 'Teacher Learning Journeys' section with a search bar and a progress bar for 'Albert' showing 3540 Activity Points. It highlights recent achievements like 'Onyx Science Scope Article Author' and 'Diamond Commenter', and offers options to 'UPDATE YOUR PROFILE' and 'CHECK THE LEADER BOARDS'. A 'This Week's Highest Rated Collections' section features 'Evolution' shared by 'corey norton'. Below this is an 'Explore Learning Opportunities' section with filters for 'By Subject' (Earth & Space Science, Life Science, Physical Science), 'By Grade Level' (Elementary, Middle School, High School, College), and 'By State Standards' (with a 'Choose a state' dropdown). It also includes sections for 'Do-it-Yourself Learning', 'Live Online Seminars & Classes', 'Books, Articles & Websites', and 'In Person Experiences'. A 'Most Popular Resources' list includes 'Coral Reef Ecosystems', 'Cell Structure and Function: Cells – The Basis of Life', 'Plate Tectonics: Layered Earth', and 'The NSTA Reader's Guide to <i>i>A Framework for K–12 Sci...'. At the bottom, there is a 'Who is Online' section listing several users and a row of partner logos including NSTA, NASA, NOAA, FDA, and the National Institute of Health.



# The NSTA Learning Center

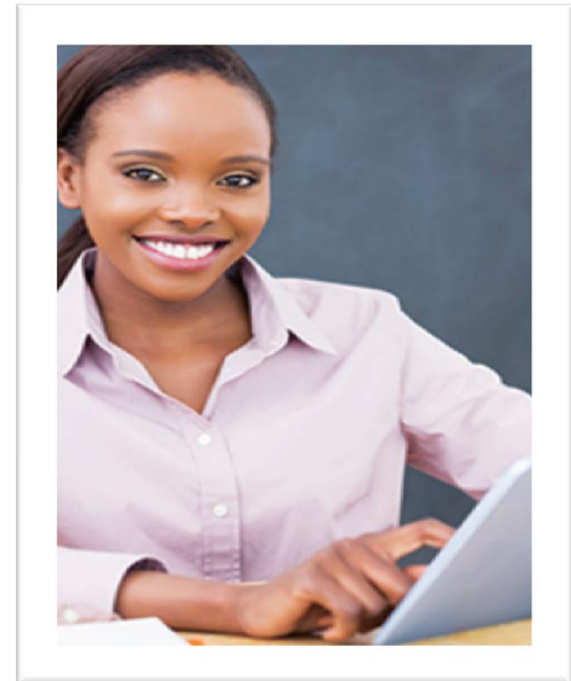
July 2013 Collection: **10,800+** PD Resources and Opportunities Available

 Do-It-Yourself Learning	 Live Online Seminars & Classes
<b>SciGuides [43]</b> <b>Science Objects [94]</b> <b>SciPacks [25]</b> <b>Archived Seminars/Podcast [1,850+]</b>	<b>Web Seminars [100/yr]</b> <b>Short Courses [20+/year]</b>
 Books & Articles	 In Person Experiences
<b>Journal Articles [5,700+]</b> <b>NSTA Press Books [300+]</b> <b>e-Books [200+]</b> <b>e-Chapters [2,000+]</b>	<b>Symposia [6-10/year]</b> <b>PD Institutes [6-10/year]</b>

# The NSTA Learning Center

Tools help teachers diagnose, manage, and document their growth over time.

- My PD Indexer
- My PD Plan and Portfolio
- My Library
- My Notepad
- My PD Record and Certificates
- My Calendar
- My Community Forums and Profile
- My Help Desk



Imagine...



You need to teach  
something for the first  
time or for the first time in  
a long time.

<http://learningcenter.nsta.org>



Search the Learning Center

Home My PD Tools Subjects Learning Resources & Opportunities Community Forums Education Administrator Help

### Teacher Learning Journeys: Learn Today...Your Way

Create your personalized learning journey based on your unique learning needs and preferences. Find more than 10,800 resources, of which over 3,700 are free. A suite of practical tools, such as [My PD Indexer](#), [My PD Plan and Portfolio](#), and [My Library](#) will help you diagnose, manage, and document your professional learning experiences. Collaborate with a community of like-minded individuals and learn together. Begin your learning journey by [creating your free account](#).



NEW: [Earn as you learn!](#) Collect points and badges as you aggregate, comment, and complete PD! Create collections with your own resources and share with others!



NEW: [Live Support!](#) Chat with Online Advisors while navigating your professional development. Simply log in or register to get started.

### Explore Learning Opportunities

- [Advanced Search](#)
- [See all FREE Lesson Plans](#)
- [See all FREE Resources](#)

By Subject	By Grade Level	By State Standards
<ul style="list-style-type: none"><li>Earth &amp; Space Science</li><li>Life Science</li><li>Physical Science</li></ul>	<ul style="list-style-type: none"><li>Elementary</li><li>Middle School</li><li>High School</li></ul>	Select your state to begin: <input type="text" value="Choose a state"/>

### LOGIN ::

E-mail:

Password:

- I'm an NSTA member and I don't have a password
- Lost password? [Recover it here.](#)
- Register now [\[Help PDF\]](#)



**NEXT GENERATION SCIENCE STANDARDS**  
For States, By States

**ONLINE SHORT COURSES**  
**Register Today!**

### Most Popular Resources

Emailed

- Coral Reef Ecosystems
- Cell Structure and Function: Cells –

# Content Review



- Two-hour **free** online learning experience in a particular topic
- Ninety-four **(94)** Science Objects currently available







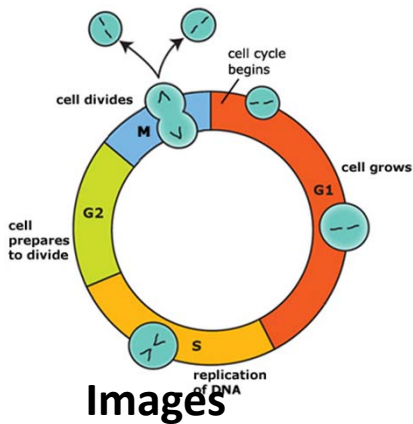
Videos



2 of 3  
The petri dish after overnight incubation shows colonies of bacterial growth.

Slide shows

# Elements of a Science Object



Images

**FACTORS LIMITING CELL POPULATION**

At 20°C with 100ml of growth medium our study generated 1,000 cells over five hours.

Time (hours)	Number of cells (per 100ml)
0	100
1	200
2	400
3	800
4	1600
5	3200

Use your measurements to plot the data. Click on the axes of the graph that correspond to the data in the table. Each time you click, a point will be placed on the graph. If you make a mistake, you will be prompted to try again. When you have all of the data plotted, click **Submit** to see the resulting graph.

Simulations



Hands-On Activity

[Click here](#) for a hands-on activity that allows you to track cells in a growing root to see where the largest region(s) of growth occur.

## Hands-on activities



Common Student Preconceptions

Middle and high school students often have difficulty recognizing the dynamic nature of mitosis and its specific order of events (Kindfield, 1994). They have limited, confused, and inconsistent understandings about cell division; make little distinction between mitosis and meiosis; and do not fully understand the processes, purposes, or products of cell division (Knippels et al., 2005).

A discussion of common student preconceptions by grade band is available in the Pedagogical Implications section of the [Cell Division and Differentiation SciPack](#).

## Preconceptions boxes

**Q** If every generation of cells results in a doubling of the cell numbers, which of the graphs shown matches this type of change?

Graph 1: Concave down curve

Graph 2: Linear increase

Graph 3: Concave up curve

Graph 4: Decreasing curve

Assessment

# Over 260 Simulations and Animations

NSTA SCIENCE SIMULATION: *Make a Reef*

CONTROL PANEL

SUBMIT  
 RESET

pH: 13, 8, 4  
Temperature: 23 - 29 °C, 17 - 23 °C, 10 - 17 °C  
Light: No Light, Murky, Clear  
Salinity: 41 - 55 ppt, 25 - 40 ppt, 10 - 24 ppt

NSTA SCIENCE SIMULATION: *Seismic Waves*

CONTROL PANEL

START  
 STOP  
 RESET

TEST FOR: RIGIDITY, DENSITY

Top Layer:  High,  Low  
Bottom Layer:  High,  Low

NSTA SCIENCE SIMULATION: *Air Track*

CONTROL PANEL

START  
 CONTINUE  
 RESET

Piston Force:  1 N,  2 N  
Cart A Mass:  1 kg,  2 kg  
Cart B Mass:  1 kg,  2 kg

NSTA SCIENCE ANIMATION: *Velocity & Speed*

CONTROL PANEL

START  
 STOP  
 RESET

Well, Derek, Tank the Tortoise had a considerable challenge with speed and the hare, Mel, had to overcome his challenge with overall average speed.

NSTA SCIENCE SIMULATION: *Vertical Balloon*

CONTROL PANEL

LAUNCH

PAYLOAD: BALLOONS: 4, WASHERS: 2

NSTA SCIENCE SIMULATION: *Potential Energy Simulation 1*

CONTROL PANEL

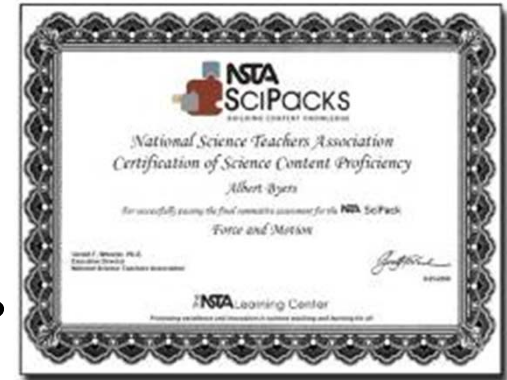
Set Position of Marble

TOP OF RAMP  
 3/4 UP RAMP  
 1/2 UP RAMP  
 1/4 UP RAMP

START  
 RESET

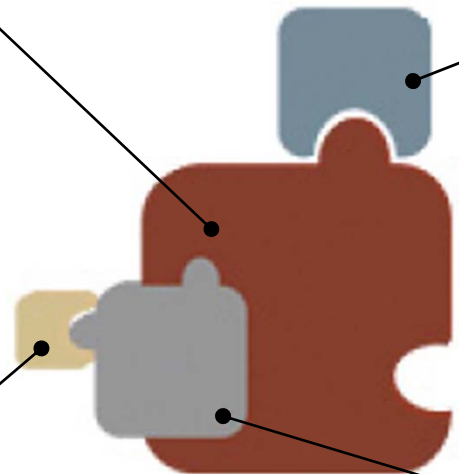


**10-Hour, self-directed, learning experience**



**Assessment and Certificate**

**3-5 Science Objects for content**



**SciPack**



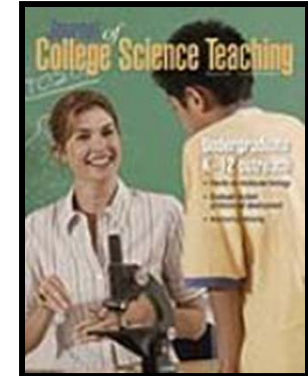
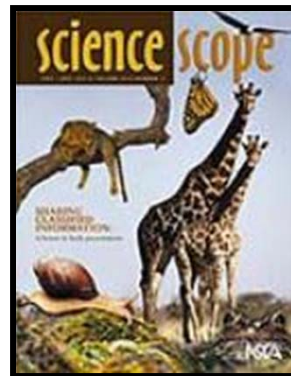
**Content Mentor  
Email Support**



**Pedagogical  
Implications**

## Lesson Plans/Activities:

- o Science & Children (*Elementary*)
- o Science Scope (*Middle*)
- o The Science Teacher (*High*)
- o Journal of College Science Teaching



Over 5,000 journal articles total, all free to NSTA members



Promoting Excellence and Innovation in Science Teaching and Learning for All

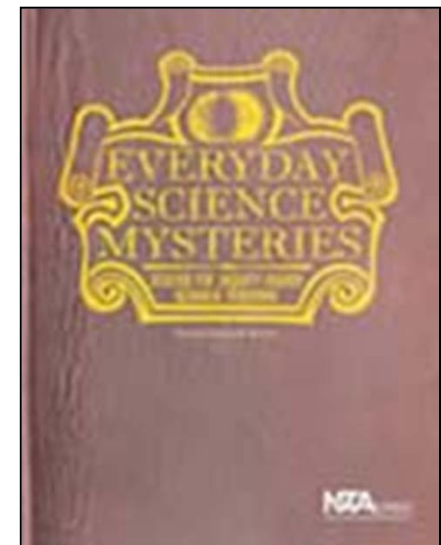
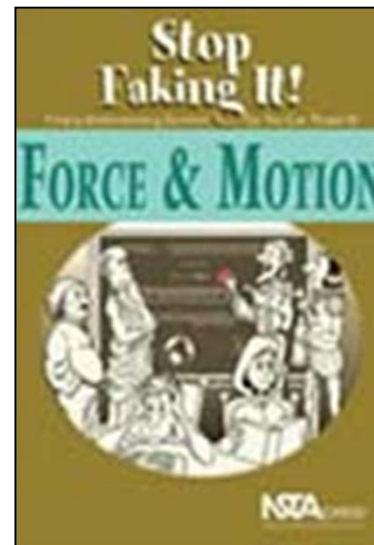
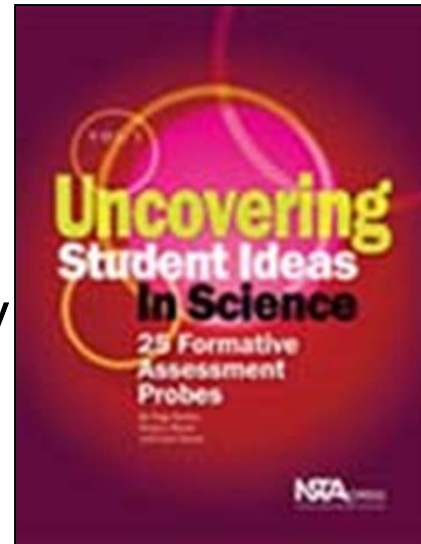


# e-Chapters:

## Content areas include:

- Physical, Earth, life science
- Integrating science & literacy
- Environmental science
- Curriculum tools
- Inquiry
- Professional development
- Teaching strategies

Over 2,000  
chapters available





# Access to Experts



- Interact with leading scientists, engineers, education specialists and colleagues from around the world (*Mon-Thu, evenings*)
- 450+ web seminar archives, 1,400+ podcasts



Promoting Excellence and Innovation in Science Teaching and Learning for All

How do you find the resources and opportunities?



The NSTA Learning Center  
Visit NSTA.org

Search the Learning Center

Home My PD Tools Subjects Learning Resources & Opportunities Community Forums Education Administrator Help

My Learning Center Welcome, Albert Log Out

Welcome My Profile My Library My PD Indexer My PD Plan and Portfolio My PD Record and Certificates My Calendar My Notepad My Community Forums My Help Desk

Welcome to Your Personalized Learning Web Space! SEARCH COMMUNITY

Albert, you've already earned 1780 Activity Points!

You've recently earned: Gold Indexer Complete Indexers You're close to earning: Sapphire Commenter Post 10 more comment/questions

UPDATE YOUR PROFILE CHECK THE LEADER BOARDS

Your Activity Matters! It donates Water!

Kathryn Kennedy Last Week's Top Aggregator

This Week's Highest Rated Collections Clouds Collection Shared by: LeRoy Atties

Explore Learning Opportunities See all FREE Lesson Plans See all FREE Resources

Advanced Search

By Subject By Grade Level By State Standards

Earth & Space Science Life Science Physical Science Elementary Middle School High School College

Select your state to begin: Choose a state

Do-It-Yourself Learning Live Online Seminars & Classes

Learn at your own pace online with these 1-2 or 6-10 hour interactive activities. SEE ALL DIY LEARNING RESOURCES

Learn online from certified instructors with your colleagues. 1-2 hour seminars, week and month long courses are available. Earn state and university credit. SEE ALL ONLINE EVENTS

Books, Articles & Websites In Person Experiences

Books Book Chapters eBooks Journals Attend an NSTA workshop in person to learn hands-on techniques with other teachers. Earn state and university credit. SEE ALL IN PERSON EVENTS

LIVE SUPPORT ONLINE Hours of Operation

NSTA Featured Resources Science OBJECTS Building Teacher Science Content Knowledge

RSS SHARE

Most Popular Resources Emailed Viewed

- Cell Structure and Function: Cells – The Basis of Life
- Plate Tectonics: Layered Earth
- Archive: NSTA Learning Center Update and Free PD Resources, ...
- Universe: The Sun as a Star

More Popular Resources...

Reminders & Opportunities

24 | REMINDER

LOGIN ::  
Welcome, Flavio  
[Admin](#) | [Log Out](#)  
[\[ Manage Subscriptions \]](#)



LIVE SUPPORT  
ONLINE  
Click here →  
[Hours of Operation](#)

ADVANCED SEARCH  
[Advanced Search](#)

## Advanced Search

Keyword:

Author/Conference Presenter:

Type of Learning Resource:

- Individual Resources
- Conference Materials
- External Collections
- NSTA Collections
- User Created Collections

- Grade Level:
- All Grade Levels
  - Elementary School
  - Middle School
  - High School
  - College
  - Informal Education

Science Discipline:

Price:



Use the  
**Advanced Search**  
or Ask an **Online  
Advisor** for  
assistance finding  
resources



## My Learning Center

Welcome, Flavio [Admin](#) | [Log Out](#)

Welcome

[My Profile](#)

[My Library](#)

[My PD Indexer](#)

[My PD Plan and Portfolio](#)

[My PD Record and Certificates](#)

[My Calendar](#)

[My Notepad](#)

[My Community Forums](#)

[My Help Desk](#)

### Welcome to Your Personalized Learning Web Space!

[SEARCH COMMUNITY](#)

Flavio, you've already earned **8205 Activity Points!**

Activity Progress Bar

You've recently earned:

**Sapphire Aggregator**  
[Add Personal Resources](#)

You're close to earning:

**Diamond Commenter**  
[Post 14 more comment/questions](#)

[UPDATE YOUR PROFILE](#)

[CHECK THE LEADER BOARDS](#)

Your Activity Matters!

It  
Donates  
Produce!



**Kathryn Kennedy**

Last Week's [Top Disseminator](#)

Featured PD Resource



**Science  
OBJECTS**



[Explaining Matter with Elements, Atoms, and Molecules: ...](#)

Explore Learning Opportunities

[Advanced Search](#)

[See all FREE Lesson Plans](#)

[See all FREE Resources](#)



**LIVE SUPPORT  
ONLINE**

[Click here](#)

# My PD Indexer

- Diagnose Content Knowledge Understanding
- View Resources and Opportunities for Consideration
- Add to your Plan

## PROFESSIONAL DEVELOPMENT INDEXER

The Professional Development Indexer helps you diagnose your needs in specific science content areas and provide suggestions of NSTA e-PD resources and opportunities you may want to consider as you plan your professional development (PD). The Indexer does not assign a grade or present a score to the questions you answer, but saves a list of recommended resources for later review.



You have two options for indexing your PD needs. First, you may review all of the content areas across any of the three science disciplines provided: physical, life, or earth and space science by clicking the "Diagnose All Subjects" button with a specific discipline. This will present you with five questions randomly selected from each content area for that discipline. Or, you may select one or more content areas within a discipline by checking the appropriate boxes and then selecting the "Diagnose Selected Subjects" button. This will present 10 questions from each science content area selected.

### Earth and Space Science Indexer

#### Content Areas Covered:

- Rock Cycle
- Earth, Sun, and Moon
- Gravity and Orbits
- Solar System
- Plate Tectonics
- Universe
- Oceans Effect on Weather and Climate
- Earth's Changing Surface

Diagnose Selected Subjects

Diagnose All Subjects

Completed Indexes

Indexes in Progress

#### Completed Indexer Results

Rock Cycle, Earth...	Results 3/23/2007	Delete
Solar System, Pla...	Results 11/5/2008	Delete
Gravity and Orbit...	Results 11/17/2009	Delete
Solar System	Results 10/5/2009	Delete
Oceans Effect on ...	Results 11/21/2009	Delete

Hide Results

### Life Science Indexer

#### Content Areas Covered:

- Cell Structure and Function
- Coral Reef Ecosystems
- Science of Food Safety

Completed Indexes

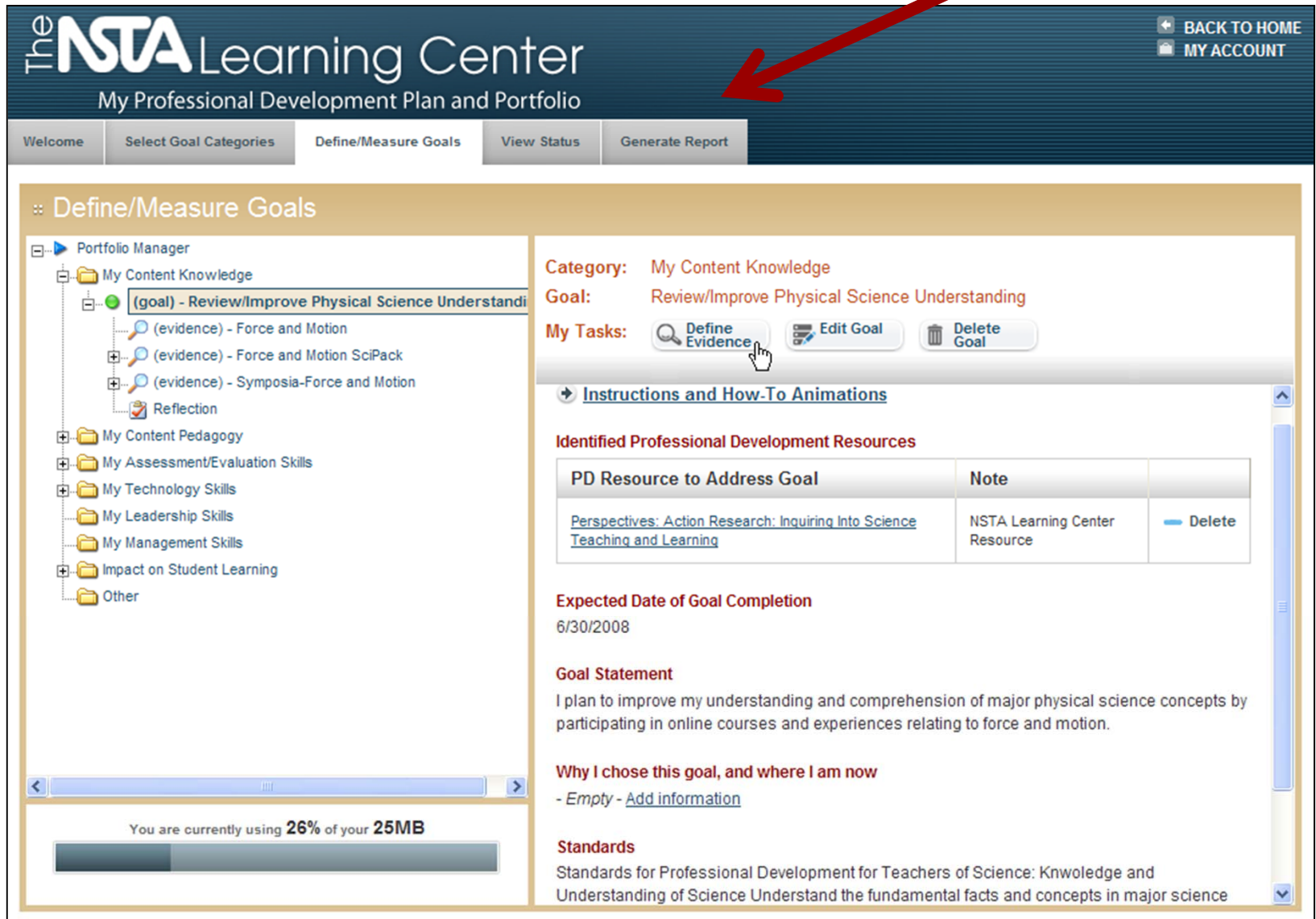
Indexes in Progress

#### Completed Indexer Results

Cell Structure an...	Results 9/11/2009	Delete
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# My PD Plan and Portfolio



The NSTA Learning Center  
My Professional Development Plan and Portfolio

BACK TO HOME  
MY ACCOUNT

Welcome Select Goal Categories Define/Measure Goals View Status Generate Report

### :: Define/Measure Goals

Portfolio Manager

- My Content Knowledge
  - (goal) - Review/Improve Physical Science Understanding
    - (evidence) - Force and Motion
    - (evidence) - Force and Motion SciPack
    - (evidence) - Symposia-Force and Motion
    - Reflection
  - My Content Pedagogy
  - My Assessment/Evaluation Skills
  - My Technology Skills
  - My Leadership Skills
  - My Management Skills
  - Impact on Student Learning
  - Other

Category: My Content Knowledge  
Goal: Review/Improve Physical Science Understanding

My Tasks: [Define Evidence](#) [Edit Goal](#) [Delete Goal](#)

[Instructions and How-To Animations](#)

#### Identified Professional Development Resources

PD Resource to Address Goal	Note	
<a href="#">Perspectives: Action Research: Inquiring Into Science Teaching and Learning</a>	NSTA Learning Center Resource	<a href="#">Delete</a>

**Expected Date of Goal Completion**  
6/30/2008

**Goal Statement**  
I plan to improve my understanding and comprehension of major physical science concepts by participating in online courses and experiences relating to force and motion.

**Why I chose this goal, and where I am now**  
- Empty - [Add information](#)

**Standards**  
Standards for Professional Development for Teachers of Science: Knowledge and Understanding of Science Understand the fundamental facts and concepts in major science

You are currently using 26% of your 25MB

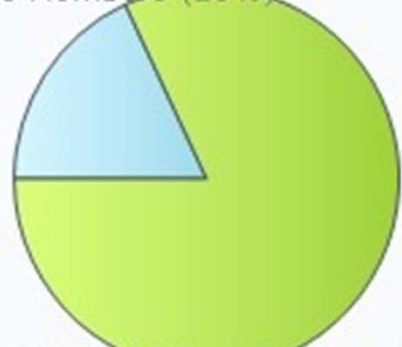
# My Library

- Store NSTA resources
- Upload personal resources
- Review, annotate, recommend resources
- Create, share, make collections public

The screenshot shows the NSTA My Library user interface. At the top, there is a navigation bar with links for Home, My PD Tools, Subjects, Learning Resources & Opportunities, Community Forums, Education Administrator, and Help. Below this is a breadcrumb trail: Learning Center Home > My Library. The main heading is "My Library" with a welcome message for "Flavio" and links for Admin and Log Out. A "LIVE SUPPORT ONLINE" banner is visible on the right. The interface is divided into two main sections: "My Resources" and "My Resource Collections". Under "My Resources", there are several categories: Do-it-Yourself Learning (with sub-items: SciGuides (41 items), SciPacks (22 items), Web Seminar Archives (46 items)), Books & Articles (with sub-items: Science Objects (77 items), Podcasts (61 items), Symposia Archives (8 items), Book Chapters (54 items), eBooks (1 item), Journal Articles (145 items)), Live Online Seminars & Classes (with sub-item: Web Seminars (4 items)), and In Person Experiences (with sub-item: No items). There is also a profile for "Craig Lynwood Top User". At the bottom, there are sections for "External Resources (2 items)" and "My Uploaded Resources (136 items)", with an "Upload a Resource" button.

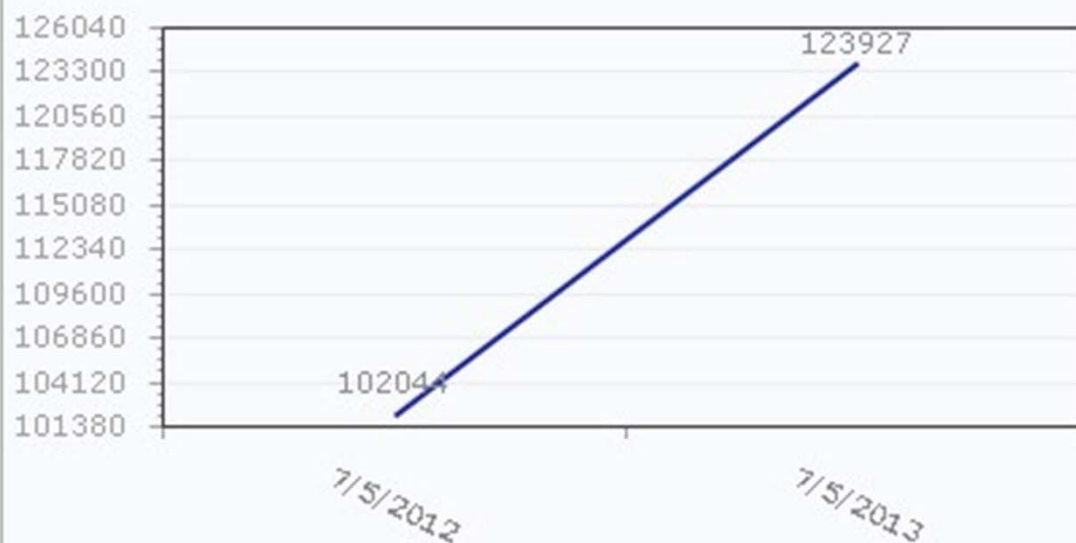
## 123,927 Active Users\*

22,356 Members (18%)

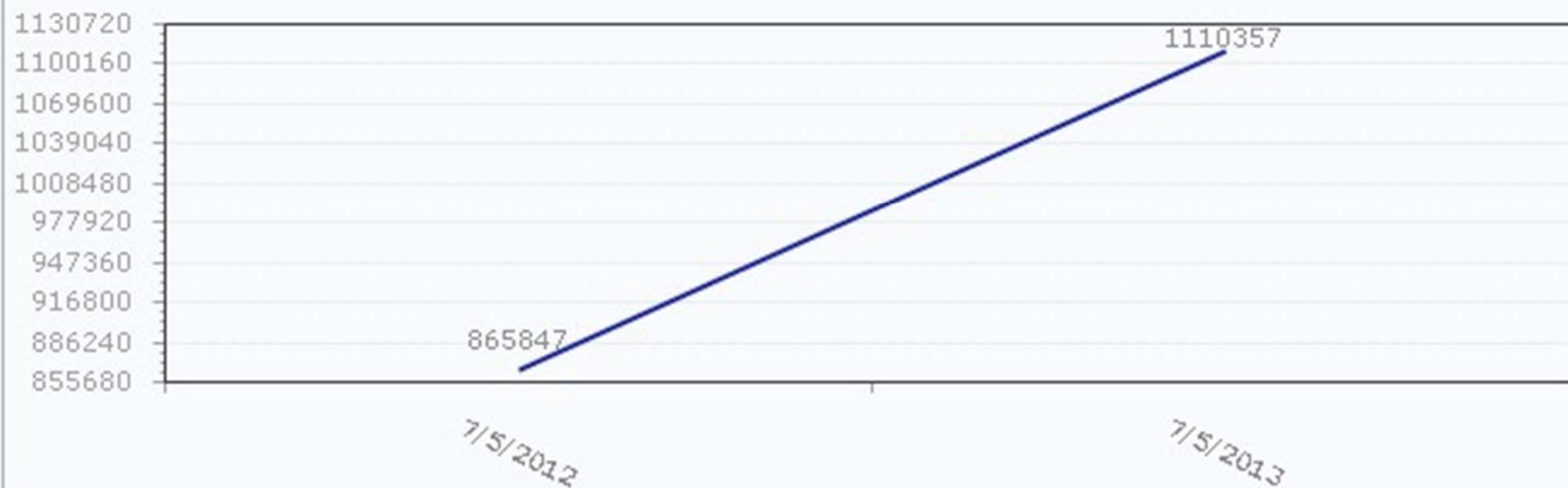


101,571 Non-Members (82%)

## Active User Growth



## 1,110,357 Resources in Libraries



## Learning Center Profile



**Kathy  
Renfrew**

21175 Activity Points

[Private Message Kathy](#)

[Recent Posts](#)

[Recent Public Collections](#)

[Recent Reviews](#)



Web Seminar  
Optimizer

**About Me:** As a teacher, I bring experience to my work at the Vermont Agency of Education. I am co-lead in Vermont's role in NGSS development. As the Elementary Science & Mathematics Specialist I assist with the implementation of the CCSS in both Mathematics and English Language Arts. Recently our team developed a Short Focused Research Project based on science content for K -2 students that is being shared regionally throughout the state. I am a member of a collaborative team of specialists from New Hampshire, Rhode Island and Measured Progress who develop, and construct the NECAP science assessment. I n 2000, I was honored as Vermont's elementary Presidential Awardee for Excellence in Science Teaching. I am an active NSTA member who is currently on the committee that chooses the Outstanding Science Trade Books.

[View Your  
Activity Log](#)

**Affiliation:** VT Agency of Education

**Location:** West Barnet, VT

### Badges Earned:





**Arlene Jurewicz-Leighton**

Arlene Jurewicz-Leighton M Ed is an instructor and instructor trainer for on-line science education courses, an e-mentor and facilitator for eMSS for new science teachers and an analyst and consultant for science digital resource projects. Arlene has facilitated over seventy-five sessions of science education graduate courses for Jason Project / National Geographic. During her tenure Jason won the prestigious EdNet Pioneer Award for excellence in technology innovation for science professional development.



**Patty McGinnis**

Patty McGinnis is a national board certified teacher with over 20 years teaching experience at the 7-12 level. She has master's degrees in biology and in educational technology and has been the recipient of several grants and awards, including the Toyota Tapestry Grant for Teachers, the Toshiba Foundation Grant, and the Paul DeHart Hurd Award for National Middle School Science Teacher. Patty serves as the NSTA Middle Level District Director and is president-elect to NMLSTA.



**Caryn Meirs**

Caryn Meirs, elementary teacher, works with gifted and talented 3rd to 5th graders in a magnet setting and is a resource for enrichment and science content (grades 2 through 5). She is a veteran of NSTA conferences, web seminars, JASON Project, GLOBE, and NASA training programs. Her current coursework includes studying the Earth's polar regions, LEGO competition robotics, field investigations using GLOBE protocols, science misconceptions, and designing and building an organic garden/outdoor classroom space.



## NSTA Online Advisors

- One-on-one live support via private chat
- Moderate forums
- Review resources
- Create collections



Mon - Thu	Fri	Sat	Sun
9:00 am - 11:00 pm	9:00 am - 5:00 pm	10:00 am - 2:00 pm	5:00 pm - 11:00 pm



# Growth across all discussions

- 12 Forums
- 1,858 Topics
- 19,990 Posts
- Physical Science
- Life Science
- Earth/Space Science
- NGSS
- Evaluation/Assessment
- Research in Science Ed
- Elementary Science
- New Teachers

The screenshot shows a forum page with the following details:

- Page Header:** Community Forums, Home > General Science and Teaching > The Flipped Classroom. Includes a search bar and a 'LIVE SUPPORT ONLINE' banner.
- Activity:** 20 people currently online. Buttons for 'POST REPLY', 'WATCH THIS TOPIC', and 'MOVE THIS TOPIC'.
- Post 1 (by Kayla Anselmi, Thu Dec 08, 2011 1:15 PM):**
  - Text:** Sandy, These are two great resources, thank you. The way I plan to deal with students who do not have access to the internet is either by allowing them to download the video files to a flash drive to play on their computer (without internet) or by giving them a DVD with the videos burned to it so they can play them on their TV. I am also fortunate enough to be at a school that has an open computer lab that students are able to use in the mornings.
  - Attachments:**
    - Flipped Classroom Parent Letter.pdf (0.06 MB)
    - Flipped Mastery Rubric Unit 7.doc (0.05 MB)
  - User Profile (Kayla Anselmi):** NSTA New Science Teacher Academy Explorations Accelerator, 20 Posts, 3380 Activity Points.
- Post 2 (by Sandy Gady, Thu Dec 15, 2011 10:40 PM):**
  - Text:** I too like your letter home to parents/guardians. You provide in a very clear and positive way the expectations you have that students will watch the videos at home. A couple of curiosities. One, how long are the videos the students watch? Did you create them yourself, or are they already on YouTube or some other source? From your rubric, it appears you have a list of expectations for the amount of work your students need to complete. I'm not sure how long the unit you have listed is to last, it appears to be about three weeks. I would love to know more how this works in a real classroom over a period of time and the changes and modifications you would make.
  - User Profile (Sandy Gady):** Platinum Advocate, 771 Posts, 27015 Activity Points.
- Post 3 (by Pamela Auburn, Sat Nov 03, 2012 1:00 PM):**
  - Text:** I began flipping some of the lessons in my chemistry class when I re-wrote the learning outcomes to emphasize what students should be able to "do" rather than what they should know. This rewrite called to my attention that if the LOs were performance based I would need to structure my lessons around those performance objectives. Yes I know students are supposed to practice with homework at home. Well just as some students do not watch the videos even fewer do homework. So here I chose to fight the battle in what I thought the most effective manner. Practice is critical and guided practice is better than unguided (individual at home practice - more on this later) practice. Here is a collection of resources on flipped classrooms
  - Attachments:**
    - Flipping Your Classroom Collection (10 items):**
      - The Flipped Classroom Infographic -User Uploaded Resource
      - Flipped Learning -User Uploaded Resource
      - Flip Teaching -User Uploaded Resource
  - User Profile (Pamela Auburn):** SciPack Accelerator, 1679 Posts, 54280 Activity Points.

## Testimonials:

I use [the Learning Center] to *share ideas* that I have and *learn more about the ideas of others*. What I've found in our practice is that, *if you isolate yourself, it basically stunts your growth...* there's no follow-up or conversation with other educators... So *the opportunity to talk "education" in these forums is very valuable*, [you] get insights from other people regarding these resources. In that way it has been *very crucial to my growth as an educator...*

<http://learningcenter.nsta.org/impact/testimonials.aspx>

# Recognizing Teacher Learning and Leadership

- *Provide opportunities to build reputation and contribute to the community as part of teachers' personal growth.*
- *Over 50,000 badges earned since 2011.*



**Administrator:** *One of our teachers sent the following information after receiving a note from NSTA that stated: Congratulations! You have been selected as the NSTA Learning Center Top Advocator for the week of May 28 – June 3, 2012. She was delighted and wrote, "Look at what I got in my email! ...NSTA picked me!! It's all because of you ladies that I started this science journey in the first place! Thank you!!"*



## NSTA Learning Center Leader Boards

### Follow your top colleagues' online activity and contributions

Building a worthwhile learning community provides opportunities for you to recognize those leaders that share their ideas, lessons and resources.

#### Learning Headlines and Opportunities

##### Upcoming live web seminars:



January 23, 2012 - [Weather and Climate: Satellite Meteorology](#)



January 30, 2012 - [Algebraic Equations: Calculator Controlled Robots](#)

### January 2012

View other months:  ▾

Overall

Commenters



Aggregators



Disseminators



Advocators



SciPack Power Users



Pos	Name	Total Activity Points Earned	Recent Donations/Badges
1	 <a href="#">Lorrie Armfield</a>	 14,400	
2	 <a href="#">Ronaldo Relador</a>	 14,175	
3	 <a href="#">Katherine Jezidija-Kendall</a>	 11,215	
4	 <a href="#">LeRoy Attles</a>	 5,970	
5	 <a href="#">Kelly Amendola</a>	 4,510	
6	 <a href="#">Duane Little</a>	 4,475	



## NLC Cohort Models for Blended Learning

- Over 130 unique private/public learning communities across University, State, District, and School Partnerships using the Learning Center in various blended teacher learning models as of July 2013
- See dozens of administrator, university, and teacher testimonials

<http://learningcenter.nsta.org/impact/testimonials.aspx>

# NLC for Science Pre-Service Teachers

## ❖ CURRENT USERS

- ❖ Dominican University, IL
- ❖ Florida International University
- ❖ Idaho State University
- ❖ Indiana University-Purdue University Columbus
- ❖ Mercer University, GA
- ❖ Montana State University Billings
- ❖ Nova Southeastern University, FL
- ❖ Plymouth State University, NH
- ❖ Southern Illinois University Carbondale
- ❖ The University of Texas at Tyler
- ❖ University of Maryland Baltimore County
- ❖ Western New Mexico University Gallup



## My Learning Center

Welcome, Susan :: [View Cart](#) | [Log Out](#)

Welcome

My  
Profile

My  
Library

My  
PD Indexer

My PD Plan  
and Portfolio

My PD Record  
and Certificates

My  
Calendar

My  
Notepad

My Community  
Forums

My Help  
Desk

### Teacher Learning Journeys: Learn Today...Your Way

Use these learning resources and community to design your own long-term growth plan, collaborate with others, and document your growth!



[Hours of Operation](#)

Susan, you've already earned **1175 Activity Points!**

Activity Progress Bar

You've recently earned:



**ES Indexer Ultimotor**

[Complete All Earth/Space Indexers](#)

You're close to earning:



**Onyx Commenter**

[Post 4 more comment/questions](#)

Your Activity Matters!

It  
donates  
Water!



[UPDATE YOUR PROFILE](#)

[CHECK THE LEADER BOARDS](#)



**Esther Alabi**

Last Week's **Top Advocate**

This Week's  
Highest Rated Collections



[Force](#)

Shared by:  
[Audrey Margrave](#)

### Welcome Spring 2013 Students!

Last class we enjoyed learning about the different objects in the solar system through the students' alien inventions - very informative. It was also fun to learn about the Sun through song from the [Astrocappella](#) group.

Register for this web seminar, April 18: [Properties of Living Things: Searching for Fingerprints of Life on Mars.](#)

#### Class stats to date:

Students' average score (77%) in solar system post-assessment vs. (66%) in pre-assessment. Good job!

- Activity points: 15,540
- Number of posts: 39
- Number of reviews: 16
- SciPacks completed: 7
- Collections shared: 37
- Resources added to library: 727



## Individual Users:

- Digital Resource Usage
- Pre/Post & Final Assessment Results
- Community Activity Points and Badges
- PD Plan Learning Goals

Hawaii Department of Education, Spring 2012 Admin [Admin](#) | [Log Out](#)

### Page

Welcome to your NSTA resource administrator page.

Data below is provided to assist you in tracking activity and progress of your program participants.  
The URL for the Teacher Access Page is: <http://learningcenter.nsta.org/hidoesp12>. The Promo Code is **hidoesp12**

Overview Individual Users SciPack Summary Manage Content Calendar Portfolios Email List

#### Individual Users

Click on a users name to see all of the resources they've added to their library via the subscription.

- [Export Pre/Post-Test Results \(sorted by SciPack\)](#)
- [View overall activity for this group](#)

User	MemberID	Date Registered	# of Resources via Subscription	Pre/Post Tests	Activity Points
Teacher name		1/25/2011 7:29:00 PM	106		2245
Teacher name		7/28/2011 6:08:00 PM	86		1945
Teacher name		7/12/2010 5:38:00 AM	44		620
Teacher name		1/27/2011 3:20:00 AM	11		600
		1/12/2012 8:11:00 PM	133		2380
		1/16/2012 12:48:00 AM	23		530
		1/17/2012 8:59:00 PM	10		180
		1/14/2012 3:56:00 PM	14		740
		3/5/2010 9:37:00 AM	144		1845



## SciPack Access History

4/2/2013

Page	Access Date
Solar System Final Assessment	Thu Mar 14, 2013 10:34 AM
Jovian Anomalies	Wed Mar 13, 2013 12:53 PM
Terrestrial Anomalies	Wed Mar 13, 2013 12:53 PM
Differentiation	Wed Mar 13, 2013 12:51 PM
The Gaseous Beginning	Wed Mar 13, 2013 12:51 PM
Quiz	Wed Mar 13, 2013 11:51 AM
Summary	Wed Mar 13, 2013 11:51 AM
Looking Through New Eyes	Wed Mar 13, 2013 11:51 AM
Probing the Solar System	Wed Mar 13, 2013 11:50 AM
Seeing into the Sky	Wed Mar 13, 2013 11:50 AM
Telescopes: The Power of Technology	Wed Mar 13, 2013 11:49 AM
Subsequent Theories	Wed Mar 13, 2013 11:49 AM
Retrograde Motion as Evidence	Wed Mar 13, 2013 11:48 AM
Size and Distance	Wed Mar 13, 2013 11:47 AM
Measuring Positions of Earth, the Moon, and the Sun	Wed Mar 13, 2013 11:47 AM
View from Earth	Wed Mar 13, 2013 11:47 AM
Earth Among the Planets	Wed Mar 13, 2013 11:47 AM
A Closer Look at Asteroids	Wed Mar 13, 2013 10:25 AM
Quiz	Wed Mar 13, 2013 10:21 AM
Summary	Wed Mar 13, 2013 10:21 AM
Looking Through New Eyes	Wed Mar 13, 2013 10:21 AM
Search for New Bodies	Wed Mar 13, 2013 10:21 AM

## SciPack Progress Report

4/2/2013

SciPack	Complete
Flow of Matter and Energy in Ecosystems	0%
Does Matter Matter?	0%
Carbon, Carbon Everywhere	0%
Nothing Matters Without Energy	0%
Learning Outcomes	0%
Pedagogical Implications	0%
Flow of Matter and Energy in Ecosystems Final Assessment Attempts: 0	
Solar System	100%
Earth in Space	100%
A Look at the Planets	100%
Asteroids, Comets, and Meteorites	100%
Formation of our	100%
Learning Outcomes	100%
Pedagogical Implications	100%
Solar System Final Assessment Attempts: 3	
Failed Tue Mar 12, 2013 3:12 PM Score: 61.54%	
Failed Wed Mar 13, 2013 10:00 AM Score: 61.54%	
Passed Thu Mar 14, 2013 10:49 AM Score: 88.46%	

## Pre/Post Test Results

Test	Date Completed	Results	Score
Solar System Pre-Assessment	2/27/2013 6:01 PM	12/20	60%
Solar System Post-Assessment	3/12/2013 10:42 AM	17/20	85%
Earth and Space Science Indexer	3/3/2013 9:02 AM	26/40	65%
Life Science Indexer	3/3/2013 10:01 AM	33/50	66%
Physical Science Indexer	3/3/2013 10:34 AM	22/30	73%

# Teacher Learning and Self-Efficacy

- **Quasi-experimental Design Study:** Across 3 districts finding *significant gains in teacher content knowledge using single SciPack*. (2008). n=45, teachers in grades 5-8
- **Experimental Design Study:** Pretest-posttest delayed-treatment/control group design with random assignment finds *significant gains in teacher content knowledge, teacher self-efficacy, and students' gain scores for grades 5-8 in treatment group across two SciPacks*. (2009-2010), n = 56
- **Descriptive Study:** Dissertation research finds *significant gains in teacher learning* for pre-posttest and pretest-final assessment. (2010). n = 85, teachers grades 3-6 from 11 different states.
- **NASA Blended PD Evaluation Study.** Incorporated SciPacks, Online Communities, Badges, Leader Boards, and Online Courses across 13 districts (n = 300). *Significant gains in teacher learning and self-efficacy* (2010-2012).

See: <http://learningcenter.nsta.org/research/>

# Ongoing Research

- **Communities of practice study:** as Co-PI with RAND Corporation looking at which affordances are of greatest import and impact within our online community (Dr. Susan Strauss).
- **Blended learning study:** Smaller study, part of approved re-allocation to look at our blended PD district-based efforts with EDC (Dr. Lauren Goldenberg).
- **US Department of Education, Office of Educational Technology on-going research:** Connected Educator's Project with American Institute of Research (Dr. Darren Cambridge).

http://learningcenter.nsta.org/ncse2013

The screenshot shows the NCSE Learning Center website. At the top left is the NCSE logo (National Congress on Science Education). Below it is a navigation bar with links: NCSE 2013 Home, My PD Tools, Subjects, Learning Resources & Opportunities, Community Forums, Education Administrator, and Help. A search bar is on the right. Below the navigation bar is a 'My Learning Center' section with a welcome message for 'Flavio' and links for 'View Cart' and 'Log Out'. A secondary navigation bar includes: Welcome, My Profile, My Library, My PD Indexer, My PD Plan and Portfolio, My PD Record and Certificates, My Calendar, My Notepad, My Community Forums, and My Help Desk. The main content area features a 'Teacher Learning Journeys' section with a 'LIVE SUPPORT ONLINE' banner. Below this is a user profile summary for 'Flavio' showing '1075 Activity Points' and recent achievements like 'Onyx Aggregator' and 'Onyx Commenter'. There are buttons for 'UPDATE YOUR PROFILE' and 'CHECK THE LEADER BOARDS'. A 'Your Activity Matters!' box contains a quote about rain forests. To the right, a 'This Week's Highest Rated Collections' box highlights 'Weather' shared by 'Jasmine Benitez'. At the bottom, there is a section for adding resources to a library from NGSS collections, with a list of links for Science and Engineering Practices and Inquiry, Elementary, Engineering, Literacy and Common Core, and General information. A promo code entry field and a 'Submit Promo Code' button are also present.

NCSE  
National Congress  
on Science Education

Visit the NCSE homepage at the NSTA main website

NCSE 2013 Home | My PD Tools | Subjects | Learning Resources & Opportunities | Community Forums | Education Administrator | Help

My Learning Center Welcome, Flavio [View Cart](#) | [Log Out](#)

Welcome | My Profile | My Library | My PD Indexer | My PD Plan and Portfolio | My PD Record and Certificates | My Calendar | My Notepad | My Community Forums | My Help Desk

**Teacher Learning Journeys: Learn Today...Your Way**

Use these learning resources and community to design your own long-term growth plan, collaborate with others, and document your growth!

Flavio, you've already earned **1075 Activity Points!**

You've recently earned:  
**Onyx Aggregator**  
[Add Personal Resources](#)

You're close to earning:  
**Onyx Commenter**  
[Post 5 more comment/questions](#)

UPDATE YOUR PROFILE | CHECK THE LEADER BOARDS

Activity Progress Bar

Your Activity Matters!  
It saves the Rain Forest!

**LIVE SUPPORT ONLINE**  
Click here →  
[Hours of Operation](#)

**Martina Arquello**  
Last Week's **Top Disseminator**

This Week's Highest Rated Collections  
[Weather](#)  
Shared by: [Jasmine Benitez](#)

Welcome to NCSE 2013!

The National Congress on Science Education (NCSE) meets annually and consists of one voting delegate from each of the 94 NSTA Chapters and Associated Groups. The Congress meets to discuss issues and bring forth recommendations that may be of interest to NSTA and the science education community.

Add resources to your library from the NGSS collections below. Once added, the resources will be available in your Learning Center library:

- Issue Forums A and E: [Science and Engineering Practices and Inquiry](#)
- Issue Forums B and F: [Elementary](#)
- Issue Forums C and G: [Engineering](#)
- Issue Forums D and H: [Literacy and Common Core](#)
- [General information](#)

Please enter your promo code:



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- Issue Forums D and H: [Literacy and Common Core](#)
- [General information](#)

Dialogue with colleagues attending the NCSE 2013 in the [private community forum](#). To join this private forum for asynchronous discussion, enter the promo code **ncse2013** in the field provided in this page. Note: You only have to enter the promo code once. After entering the promo code, its field will disappear from the screen. If you already have a promo code on your account because you are a member of another Learning Center cohort, please send an e-mail to Flavio Mendez at NSTA ([fmendez@nsta.org](mailto:fmendez@nsta.org)) requesting to be added to the NCSE2013 private forum discussion group.

 This Week's  
Highest Rated Collections



[Weather](#)

Shared by:  
[Jasmine Benitez](#)

Please enter your promo  
code:

Submit Promo Code

# Flavio Mendez

Sr. Director, The NSTA Learning Center

[fmendez@nsta.org](mailto:fmendez@nsta.org)

703-312-9250

