HU-LINC

Houston Urban Learning Initiatives
in a Networked Community

The Role of Teacher Leaders: Major Strategies and Lessons Learned

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Houston Independent School District
http://com.houstonisd.org/hulinc/

HISD: a complex business, richly diverse & student-centered

Student Enrollment:

211,157

Mobility Rate:

23%

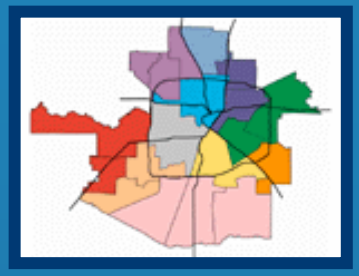
Ethnicity:

Hispanic	58.1%
African American	29.8%
White/Asian	12.1%

Special Populations:

Econ. Disadv.	81.7%
LEP	29.0%
At-Risk	59.6%
Special Education	10.0%

HISD Demographics



Schools
307

44 HS

53 MS

210 Elem. Schools

Teachers
12,432

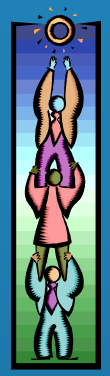
ES	6,825
MS/HS Math	585
MS/HS Science	519

Three Goals

- *Significantly improve teaching and learning that leads to high achievement*
- Establish and expand coalitions
- Establish an infrastructure to sustain highest quality student learning of SMT

Needs

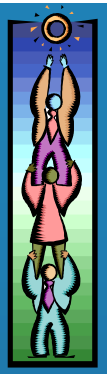
*Quality learning experiences for **all** students*



- for standards-based science curriculum and assessment at all schools - not just some schools
- for all students to receive challenging mathematics, and technology curricula
- For higher expectations for performance by students not traditionally enrolled in challenging courses

Need for Elementary Science Focus

Because.....



- Few teachers with science background
- Little science being taught on the elementary level
  - Spotty campus implementation
- Little science equipment, materials or labs
- Elementary science program weak according to
  - Stanford 29-39%
- No funding for district science lead teachers
- Potpourri professional development

The HU-LINC Plan

To develop the blueprint

- Standards-based curriculum - Project CLEAR
- Elementary Science Teacher Leaders
- Systemic and sustained professional development
  - Content
  - Pedagogy
  - Leadership Skills

Strategies used for developing Elementary Science Lead Teacher (ESLT) program

- ESLTs at every elementary school
- A 3 year professional development program
  - Summer training
  - Academic year follow-up all 3 years
- HU-LINC Coalition partners would be involved in professional development
- Professional development based on data, CLEAR and integrated with technology
- Inquiry-based materials/equipment provided for immediate classroom implementation
- Each ESLT would be paired with a secondary mentor and HU-LINC specialist

The Rollout – careful planning

210 elementary schools!

- Three Cohorts
  - Divide district into three equal cohorts
  - High school feeder patterns
  - One per sub-district
- One ESLT for every 300 students in the school
- Each ESLT participates in the training program for 3 years

Building Leadership Capacity at the campus level

Creating a new role for lead teachers

From

- Communication contact ⇒
- Traditional classroom ⇒
- No technology ⇒
- Textbook-based science ⇒
- Teacher isolation ⇒
- No involvement in campus professional development ⇒

To

- Instructional leader
- Inquiry classroom
- Integrated technology
- Standard-based science
- Teacher-to-teacher network
- Presenters & facilitators of professional development

Other leadership responsibilities

- Share learning from HU-LINC professional development
  - Content
  - Classroom management
  - Materials management
  - Questioning strategies
- School-wide manager of inquiry kits and materials
- Develop the science objective for the School Improvement Plan
- Shared Decision-Making Committee
- Communicate science opportunities
- Organize the HU-LINC Math/Science Family Nights
- Coordinate HU-LINC Family Adventures with partner informal science institution
- Make data driven decisions regarding science program

ESLT Selection Process

Choosing the right teachers for leaders

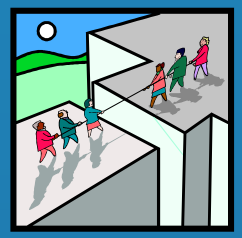
- Criteria developed for selection
- HU-LINC Education Support Coalition input
- Application created
- Administrative In-service
- Principal recommendation
- Yearly refinement

Preparing the HU-LINC team to be Professional Developers

Research-based

- Specialists engaged in professional development
  - Book Studies
    - *Designing Professional Development for Teachers of Science and Mathematics*, Susan Loucks-Horsley, Peter W. Hewson, Nancy Love, Katherine E. Stiles
    - *What Works in Schools Translating Research into Action*, Robert J. Marzano
  - Trainer of Trainers
    - STC, FOSS, GEMS associates, Region IV Bridging to TAKS, TEXTEAMS, Change Game

Partnerships Strengthen Staff Development



Working together, so we don't fall through the cracks

- Baylor College of Medicine
  - Annual Science Leadership Program summer institute for HU-LINC lead science teachers, school-year follow-up, ongoing support, evaluation
- Houston Independent School District
  - Laptop computer, technology professional development, school-year follow-up, materials, teacher support, evaluation,
- Rice University
  - Electronic Community of Teachers and ongoing support *(ECOT)*
  - Thursday Technology Tutorials
  - Follow-up support

Developing Effective Teacher Leaders

- Meet an identified need in schools and the curriculum
- Reflect current research on teaching and learning
- Involve teachers as equal partners
- Meet local, state and national standards
- Have clear understandings of roles and responsibilities

Standards-based and Data Driven Professional Development for ESLTs

- Content knowledge
- Pedagogy
- CLEAR Online
- Science teaching strategies
- Inquiry-based teaching
- Cross-Curricular Connections
- Leadership development skills
- Assessment

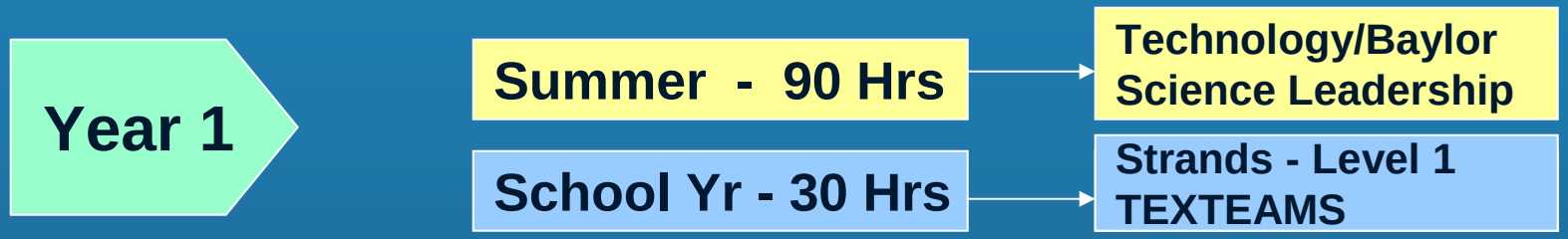
Technology Training Philosophy

- Authentic
  - Imbedded in the learning process
  - Conduct experiment, enter data into a spreadsheet, create graphs
  - Receive QX3 Microscopes & Digiscopes when needed in the lab
- Realtime - communication online with scientists
- HU-LINC/Rice produced CD with technology support, How-to's
- Electronic collaboration among lead teachers
  - Post presentations
  - Chats
  - Share Lessons
  - Mentoring

Elementary Science Lead Teacher Professional Development Model

Year 1	**Summer - 90 Hrs**	**Technology/Baylor Science Leadership**
	School Yr - 30 Hrs	**Strands - Level 1 TEXTEAMS**
Year 2	**Summer - 30 Hrs**	**Inquiry Kits**
	School Yr - 30 Hrs	**Strands - Level 2 TEXTEAMS/Portfolio**
Year 3	**Summer - 30 Hrs**	**Level 2 Data Driven**
	School Yr - 30 Hrs	**Strands - Level 3 TEXTEAMS/Portfolio**
Year 4	**School Yr - 24 Hrs**	**Leadership Transition TEXTEAMS**

ESLT Planned Professional Development Sustained and Systemic!!



- Leadership resources used:
  - Inquiry and the National Education Standards a guide for Teaching and Learning
  - *National Science Education Standards* by the National Research Council
  - *Private Eye: Looking /Thinking by Analogy* (Ruff, 1992)
  - *Science Yellow Pages for Students and Teachers* (Frank, 2002)
  - *Joyful Noise* (Fleischman and Beddows, 1992)
- Preparing teachers to work with adults
  - The Change Game

ESLT Planned Professional Development Sustained and Systemic!!

Leadership development

Year 2

Summer - 30 Hrs	**Inquiry Kits**
School Yr - 30 Hrs	**Strands - Level 2 TEXTEAMS/Portfolio**

- Leadership resources used:
  - *Building Leadership Capacity in Schools*, Linda Lambert
- Assessment
  - *Active Assessment for Active Science A Guide for Elementary School Teachers,* (George E. Hein & Sabra Price)
  - Great Performances Creating Classroom-Based Assessment Tasks, (Larry Lewin & Betty Jean Shoemaker)

ESLT Planned Professional Development Sustained and Systemic!!

Leadership development

Year 3

Summer - 30 Hrs → **Level 2 Data Driven**

School Yr - 30 Hrs → **Strands - Level 3 TEXTEAMS/Portfolio**

- Support for Curriculum Integration
  - *Curriculum Integration Designing the Core of Democratic Education*, (James A. Bean)

ESLT Planned Professional Development Sustained and Systemic!!

Back by popular demand

Year 4

School Yr - 24 Hrs → **Leadership Transition TEXTEAMS/GEMS**

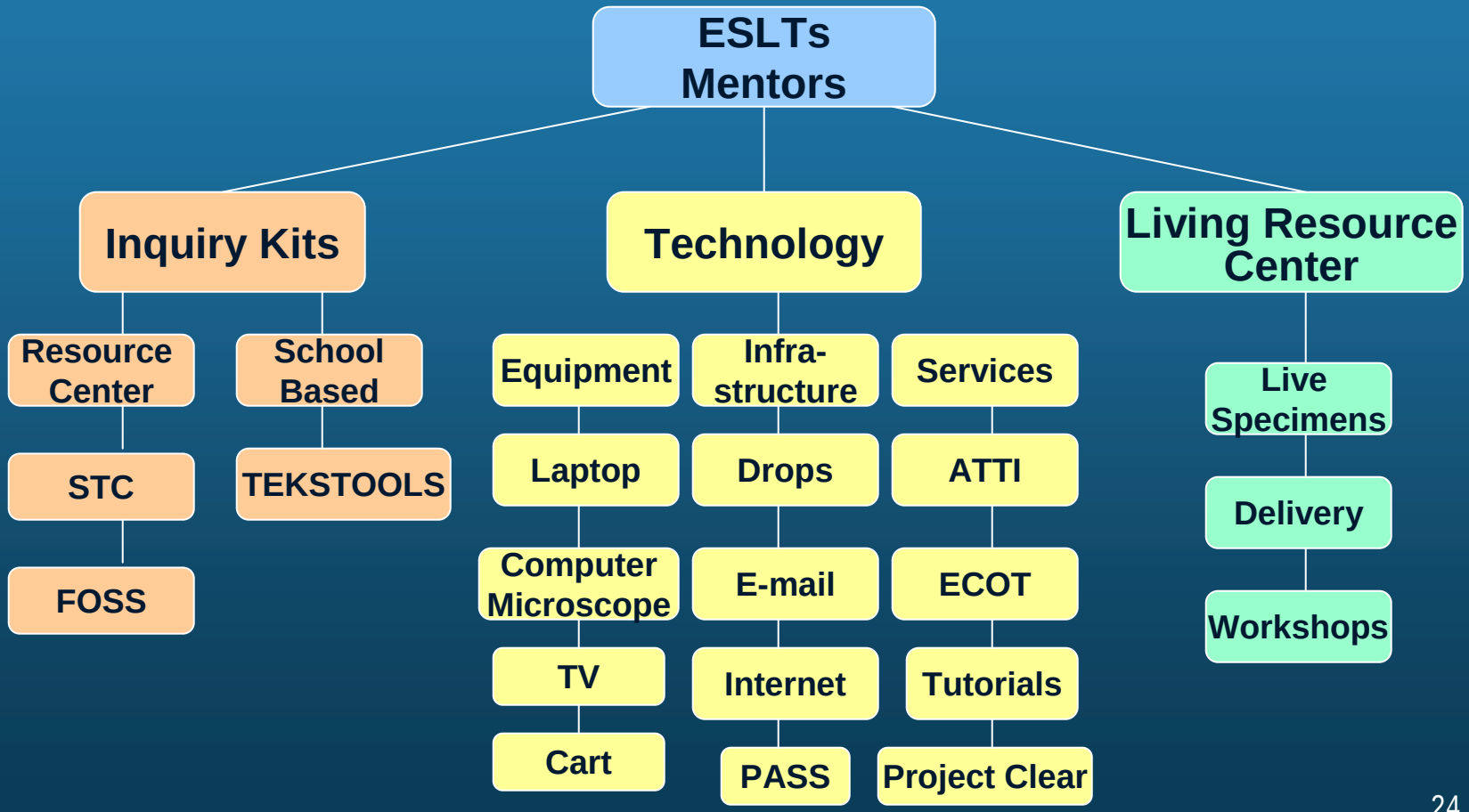
- *Bridging to TAKS I & II*
- *GEMS*
- *Robotics*
- Opportunities for presenting and facilitating to other Cohorts

Role of Specialist as ESLT support

Each specialist assigned to sub-districts
Serve ESLTs within those

- Campus visits
- Technical support
- Role model
- Train ESLTs to facilitate and presenters
- Co-present with ESLTs at the campus and district level
- Classroom walkthrough with principals
- Meet with grade levels and entire faculties

Resources/Services Supporting Elementary Science Lead Teachers



Campus Summary by Teacher

PASS *Profiler for Academic Success of Students*

Date	Grade Level Enrollment	Snapshot Participation	Percent Complete
10/23/2002	111	104	94%

Test Code 0521	CLEAR Objective Tested	Percent of Students Answering **3 or more** Questions Correctly
5.1.A	Use place value to read, write, compare, and order whole numbers through the billions place.	37%
5.1.B	Use place value to read, write, compare, and order decimals through the thousandths place.	37%
5.14.B	Use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness.	26%
5.14.C	Select or develop an appropriate problem-solving strategy, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem.	16%
5.3.A	Use addition and subtraction to solve problems involving whole numbers and decimals.	20%
5.4.A	Round whole numbers and decimals through tenths to approximate reasonable results in problem situations.	19%
5.4.B	Estimate to solve problems where exact answers are not required.	35%
5.6.A	Select from and use diagrams and number sentences to represent real-life situations.	29%

By SCOTT Teachers

Test Code 0521	CLEAR	CLEAR Objectives Tested							
Adv/Hmr Teacher	Participants	5.1.A	5.1.B	5.14.B	5.14.C	5.3.A	5.4.A	5.4.B	5.6.A
Espinoza	22	4%	22%	4%	4%	0%	0%	4%	0%
Gordon	17	41%	70%	64%	23%	47%	29%	76%	52%
Peterson	17	58%	58%	52%	29%	11%	29%	58%	35%
Arizza	25	44%	28%	16%	8%	28%	20%	32%	32%
Kimery	22	45%	18%	9%	18%	18%	22%	22%	31%

ESLT Accountability

Set expectations upfront

- Portfolio's
  - Professional Development requirement during academic year
  - Leadership requirements which increases during each progressive year
  - Each year the principal must sign off on the
    - teacher commitment letter
    - portfolio

ESLT Accountability

Focus on the classroom

- Year 1 Portfolio's
  - Implementation Log

Please record classroom and campus implementation (model lessons, presentations, etc.) of your 2004 – 2005 (summer and academic year) HU-LINC approved professional development experiences:

Date/Period of Time	Classroom Implementation working w/adults	# students or adults impacted	Activity	Location

Portfolio Checklist for ESLTs

Increasingly more Leadership hours required

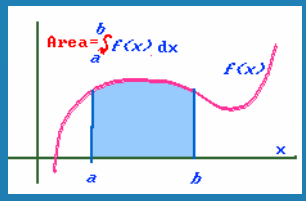
Portfolio Item	If no, provide explanation	Yes
18 hours of approved professional development within the following strands: Inquiry/Technology 12-7-04 *6 hr* Microscopic/Safety Assessment 1-13-05 *6 hr* Region IV Assessment Materials/Resources 2-11-05 *6hr* GEMS *ESLT must include copy of certificate (if provided) and a copy of Anne Meyn's email for every approved substituted training. Note: ESLT must email Anne Meyn and cc your specialist if you must miss training.*		
12 hours of building leadership capacity ESLT must have documentation for these 12 hours: Agenda Sign-in sheets Handouts Other		
Must include ESLT and Mentor Contact Log(s)		
Must include Principal's Signature on *Portfolio Tracking Form*		
Principal's Letter-Signed by Principal and ESLT		

Secondary Professional Development Math/Science

Integrated Institutes/Joint Teacher Training

- Algebra 1/ IPC
- Algebra 1/IPC - Advanced Level
- Algebra 2/Chemistry
- Geometry/Biology
- PreCalculus, Calculus/Physics
  - Content Integration
  - Technology Integration - T^3 Institutes
  - Applications Institutes
    - Summer - 2 weeks

Integrated Math/Science Secondary Courses



- 4 Summer Institutes by
  - TSU / Space Center Houston
    - Superconductivity
  - Rice / MNS / NASA
    - Toys in Space
    - Ham Radio
  - UHD / Environmental Center
    - Water Studies
  - UHC / Montgomery Watson / City of Houston
    - Exploring Houston
  - University of Texas Health Science Center
    - Microbial Exploration

High School Leadership:
C3 – Class Content Connections

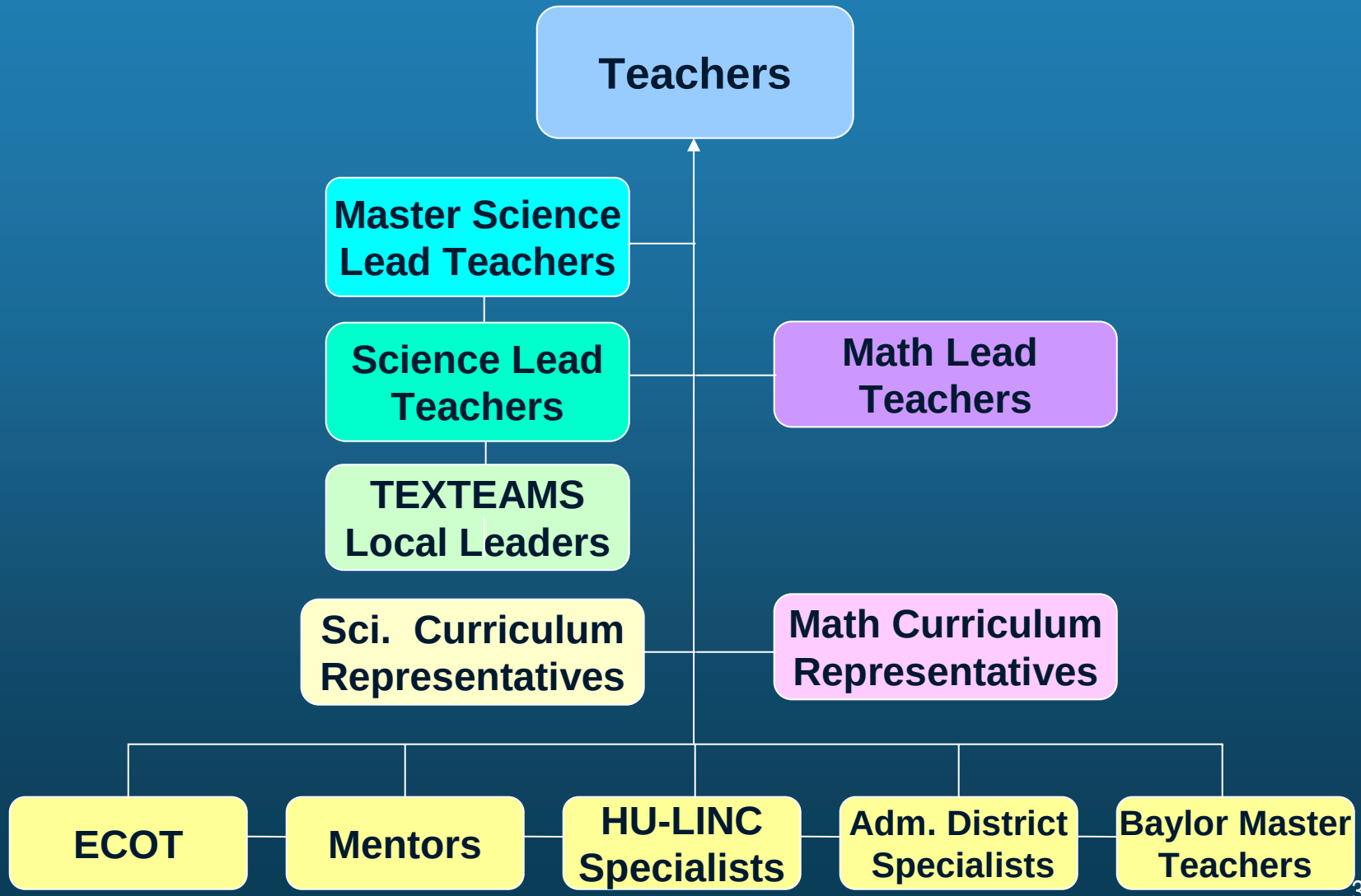
Develop cross content lessons with CBR/CBLs

- Teacher Integrated Program
- Lead facilitators
- Provide Professional Development in specific content areas
- Initial and Advanced Program

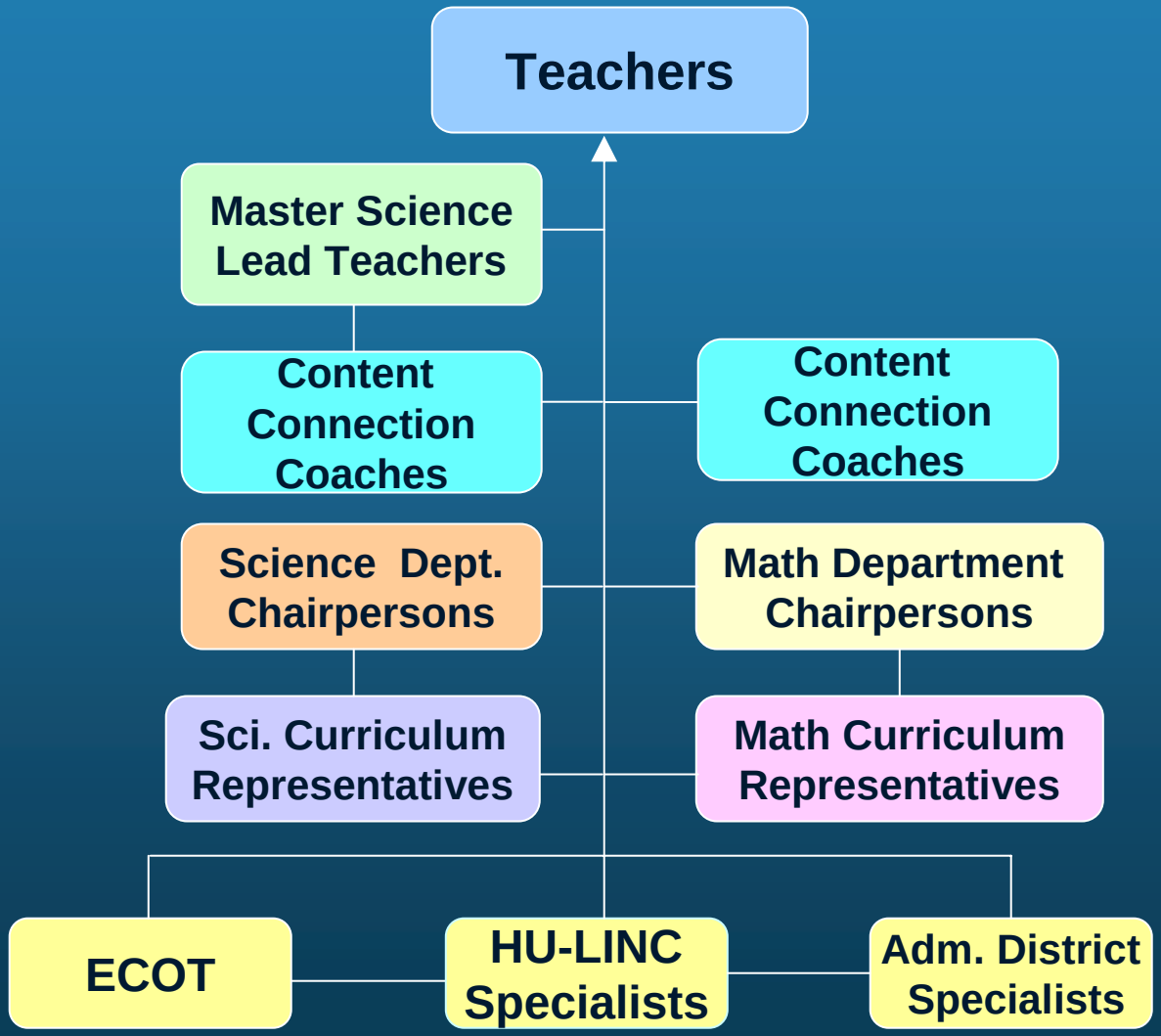
Sustainability: Building Capacity

- Multi-level teacher leadership teams within each elementary school
  - Elementary Science Lead Teachers
  - TEXTEAMS Local Leaders
- Ongoing vertical development of teacher leaders as planners and presenters
- Administrative Districts clustering of localized training

Sustainability/ Building Capacity Through Elementary School Leadership



Sustainability/ Building Capacity Through Secondary School Leadership



Taking Teacher Leadership to the Next Level

- HU-LINC Master Science Lead Teacher
  - 25 teachers grades K-12
  - At least 3 years as a HU-LINC Lead Teacher
  - Additional hours of professional development each year
    - *Designing Professional Development for Teachers of Science and Mathematics,* 2nd Edition,
    - National Science Foundation Research-based Programs
    - *Presentation Skills and Strategies for Adult Learners*
    - *Make Presentations that Teach and Transform*
    - *Transforming Schools Creating a Culture of Continuous Improvement*
  - Baylor Science Leadership seminar
  - Present professional development to teachers
  - Follow-up campus-based training
  - Present for the Houston ISD Elementary Science Initiative

Increasing Leadership Pipeline

Lasting Leadership

- HU-LINC Specialists to district leadership positions
  - Middle School Curriculum Specialist
  - Science Model Lesson Manager K12
- HU-LINC Master Science Lead Teachers
  - Elementary Curriculum Specialist
  - Manager- multilingual science
- HU-LINC Elementary Science Lead Teachers
  - Sub-district/Regional Instructional Supervisors
  - Region IV curriculum specialist

Lessons Learned

- Teacher leadership development takes more time than anticipated
- Attrition of ESLTs greater than anticipated
- Mobility of ESLTs among schools in different Cohorts
- Creation of ESLT cycles based on start date
- ESLTs training in TEXTEAMS strands needed to precede the Local Leader
- Professional development attendance rate less than anticipated
- Portfolios needed to be revised yearly

Lessons Learned

- Changes in district leadership and organizational structure
- Change in school principals
- Qualifications had to be refined to more detail (i.e. certified teacher)
- Selection criteria for ESLTs needed more specificity
- Addition of new and charter schools
- Mobility can result in schools that exceed the limit of ESLTs

Program Modifications

- In response to teacher demand, continuous professional development beyond planned program cycle
- Program changes to address new state assessment requirements for graduation

Program Modifications

- Continuity of ESLT professional development follow-up based on levels of strands
- Data Driven Decisions for professional development, materials resources, and field experiences
- Inquiry-Based Kit additions due to assessment needs

Program Modifications

- Project CLEAR Elementary Science on ECOT preceded CLEAR online and HISD web portal
- Developed HU-LINC website
- Advanced Technology Training tailored for Science Inquiry
- Cross collaborations within and across Coalitions to provide professional development

Building Capacity/ Sustainability

- Multi-level teacher leadership teams within each elementary school
  - Elementary Science Lead Teachers
  - TEXTEAMS Local Leaders
- Ongoing vertical development of teacher leaders as planners and presenters
- Educational professional community has replaced “deficit professional development”
- Administrative Districts clustering of localized training

Sustainability

District Commitment

- Elementary Science Initiative provides equipment & training
- Follow-up training with Professional Development
  - sustained and systemic
- HMSLT are leading district initiative
- ESLT Follow-up Training continues
- HU-LINC Resource Center
  - Distribution of kits through school mail for trained teachers
  - Still Free – *thanks to district support*

HU-LINC

Houston Urban **Systemic Initiatives**

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