

Virtual Learning Magnets: Bridging the Geography Gap



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Overview

Defining the VLM for Space Science and
Mathematics

Phase I (Beta) Winter '09

Phase II NASA grant

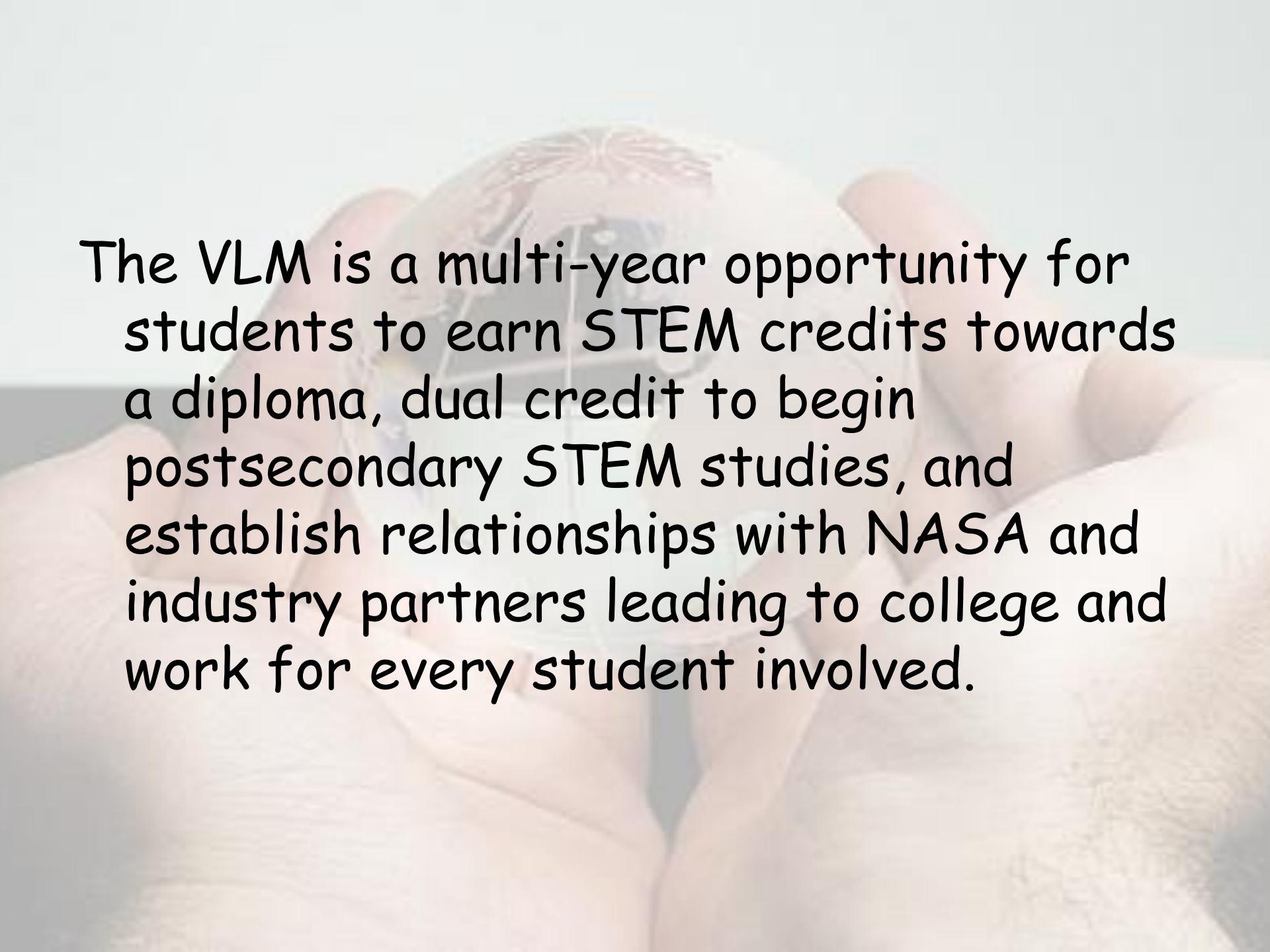
Phase III Build-out and Beyond

Defining the VLM



In the 21st century we must no longer allow geography to determine any learner's future.

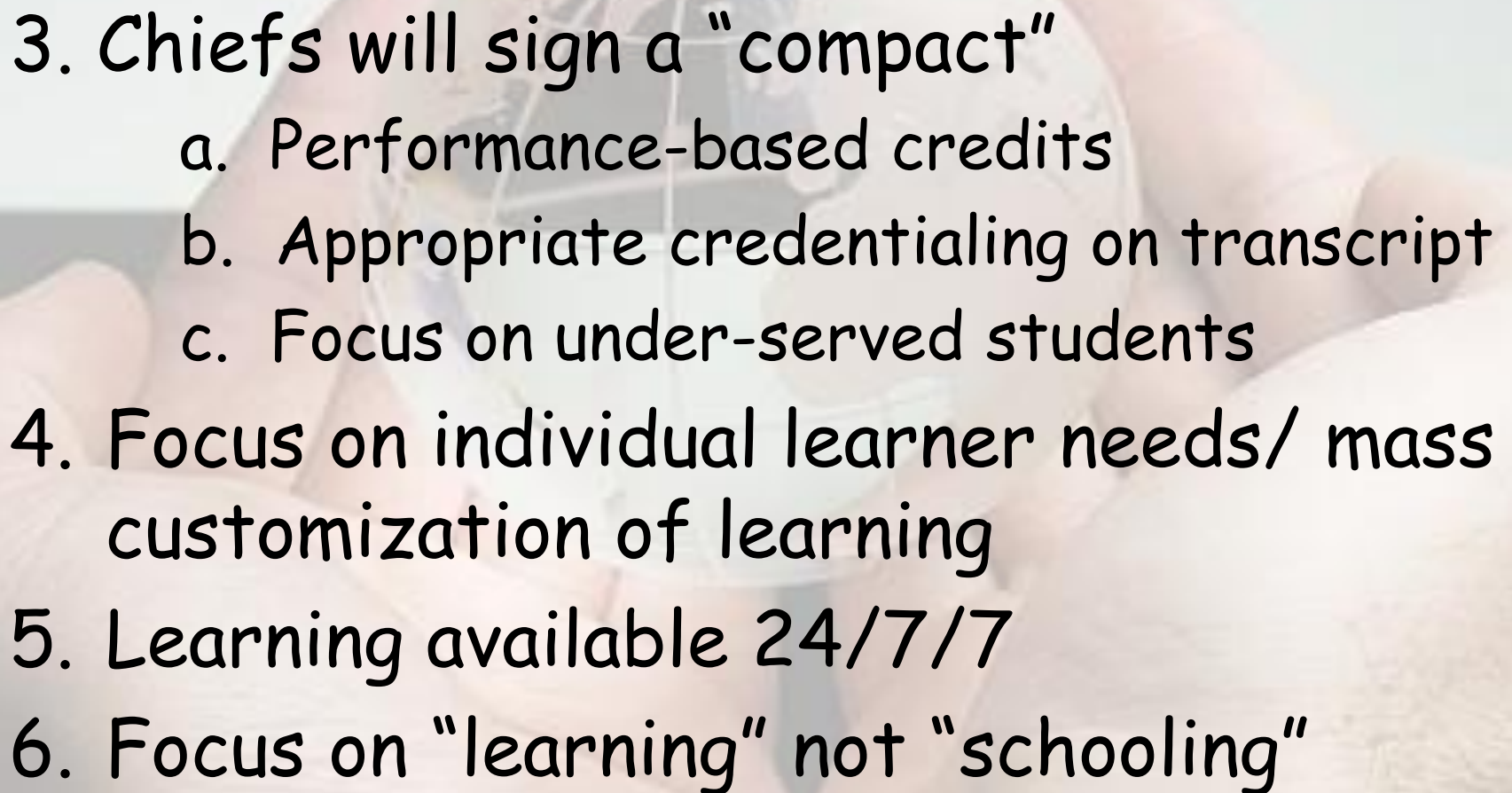
(We avoid using the word "school" with the design)

A pair of hands is shown holding a globe of the Earth. The hands are positioned on either side of the globe, with fingers gently gripping it. The background is a soft, out-of-focus light blue and white, suggesting a bright, airy environment. The text is overlaid on the center of the image, in a large, black, sans-serif font.

The VLM is a multi-year opportunity for students to earn STEM credits towards a diploma, dual credit to begin postsecondary STEM studies, and establish relationships with NASA and industry partners leading to college and work for every student involved.

Fundamental elements of the VLM

1. Under the auspices of the Council of Chief State School Officers (CCSSO)
2. Work with, not compete with, existing state and local virtuals
 - a. Students earn credit at state/local level
 - b. Enroll in VLM through state virtual

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3. Chiefs will sign a "compact"
 - a. Performance-based credits
 - b. Appropriate credentialing on transcript
 - c. Focus on under-served students
 4. Focus on individual learner needs/ mass customization of learning
 5. Learning available 24/7/7
 6. Focus on "learning" not "schooling"

Assessment

A pair of hands is shown holding a small, translucent globe of the Earth. The globe is centered in the frame, with the hands positioned around it, one on the left and one on the right. The globe shows the continents and a grid of latitude and longitude lines. The background is a soft, out-of-focus light blue and white.

1. Gateway

2. Readiness

Repositories


A hand holding a small globe of the Earth, symbolizing global reach or international focus. The globe is held in the center of the frame, with the hand's fingers visible around it. The background is a soft, out-of-focus light blue.

1. Content Repository

2. Learner Evidence Repository

VLM Design Principles


- Equity and Access: Improve STEM-related learning opportunity for any learner
- Performance-based credits and progression based on performance
- Dual Credit - supports for successful transition to postsecondary STEM studies

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- A close-up photograph of a person's hand holding a small, clear globe of the Earth. The globe is centered in the palm, with fingers gently supporting it from the sides. The background is a soft, out-of-focus light blue and white. The text is overlaid on the left side of the image.
- Open education resource
 - Use of existing and emerging STEM-related resources

A close-up photograph of a person's hand holding a small, clear globe of the Earth. The hand is positioned in the center, with fingers gently gripping the globe. The background is a soft, out-of-focus light blue and white, suggesting an indoor setting with natural light. The overall tone is educational and global.

Systems thinking

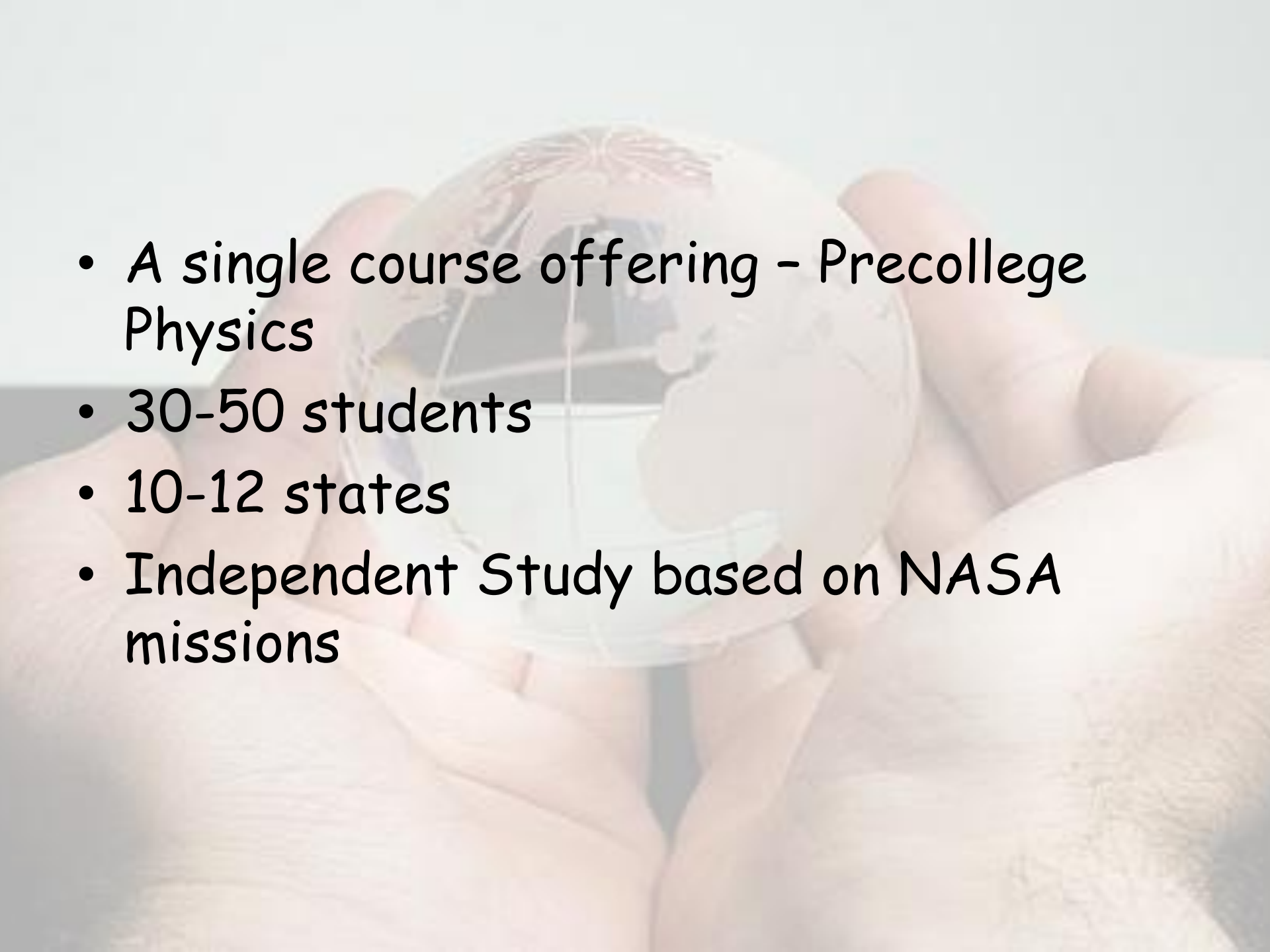
- Modularized, dynamically sequenced curriculum (not courses)
- Performance-based
- Open-source, Open-architecture
- International benchmarking

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- Stretch goals for every learner
 - High degree of relevance to academic and career goals
 - Transferable to other learning opportunities
 - Undergirded by strong student supports
 - Robust intellectual challenges

Phase I - VLM Beta



- Starts January '09
- Very limited "Proof of Concept" -
- Supported by an Unsolicited Proposal from NASA

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- A hand holding a small globe of the Earth, symbolizing global education or science. The globe is centered on the Americas and is held gently in the palm of a hand. The background is a soft, out-of-focus light blue and white.
- A single course offering - Precollege Physics
 - 30-50 students
 - 10-12 states
 - Independent Study based on NASA missions


Phase II

A close-up photograph of a person's hand holding a small, clear globe of the Earth. The globe is centered in the frame, showing the continents and oceans. The hand is positioned as if presenting or supporting the globe. The background is a soft, out-of-focus light blue and white.

- NASA grant proposal
 - 2 year project
 - Budget ~\$750K/yr for each of 2 years

Specific Phase II objectives

- 4 online courses for HS credit in STEM related studies in the context of "Space Science"
- Pathways to and through Dual Credit
- Interdisciplinary independent study
 - Authentic mission activities
 - Collaborative technologies
 - Participatory learning

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- Involve students with emerging STEM technologies and learning innovations through partnerships
 - Leverage VLM resources, tools and strategies to help states develop STEM teaching capacity and quality



Organic design

- not a "complete" idea that is being funded
- architectural design for replicability and scalability
- based on needs of states and sector partners

Phase II Collaboration

A background image showing a hand holding a small globe of the Earth. The hand is positioned in the center, with fingers visible, and the globe is held between the thumb and index finger. The globe shows continents and latitude/longitude lines. The background is a soft, out-of-focus light blue and white.

1. States

- DE example
- Contributing content
- Involving teachers
 - Learning teams
 - Content harvesting and repurposing
- “Skinning” the VLM with your state virtual
- Use the VLM to extend or enhance student engagement with NASA

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- A pair of hands is shown holding a small, translucent globe of the Earth. The globe is centered in the frame, with the hands positioned around it, suggesting care and support. The background is a soft, out-of-focus light blue and white. Overlaid on the left side of the image is a bulleted list of three items.
- Post-secondary partners for Dual-credit
 - Participate in Professional Development
 - Other

2. Other Public and Private sector partners

- Content contribution to the repository
- SMEs
- Mentors
- Scholarships/Sponsorships
- Other

Phase III

- Deliberate design to expand via partnerships
- A Network of VLMs for student learning
 - Consistent architecture
 - Consistent standards and expectations across content and context
- Content Repository is common to all
- International involvement

A pair of hands is shown from the bottom, cupping a small, clear glass globe. The globe is etched with a world map, showing continents and latitude/longitude lines. The hands are positioned to support the globe from below, with fingers visible on the sides. The background is a plain, light-colored wall.

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