1. Desired Term: Spring 2008  
2b. Abbreviated Title:  
Earth's History  

4. Number of Units: 3  
5. Billing Units: 0 ($80)  

6. Allowed Student Levels: UG X GR X EE X (Default is to check all three levels)  

7. Grading Method:  
N Normal (N) (Default is Letter Grade +/- . Students may request Credit/No Credit)  
NP Normal Plus Report-in-Progress (NP) (As for Normal; also allows Report-in-Progress)  
C Credit/No Credit Only (C)  
CP Credit/No Credit or Report-in-Progress Only (CP)  

8. Mode of Instruction:  
(See “pages 57-23 at http://www.calstate.edu/cim/data-elements/DEP-Transaction-DED-SectionY.pdf for definitions of the Course Classification Numbers)  

<table>
<thead>
<tr>
<th>Type of Instruction</th>
<th>Number of Credit Units</th>
<th>Instructional Mode (Course Classification Number)</th>
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<tr>
<td>Lecture</td>
<td>3</td>
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<td>Activity</td>
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<td>Lab</td>
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9. Attributes: Course Requires Consent for Enrollment? Yes X No  
Faculty Credential Analyst Dean Program/Department - Director/Chair  
Prerequisites: __________ Co-requisites: __________  

10. Does this course impact other discipline(s)? (If there is any uncertainty as to whether a particular discipline is affected, check “yes” and obtain signature.)  
Yes X No  
If yes, obtain signature(s). Any objections should be stated in writing and attached to this form.  

<table>
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<th>Biology</th>
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* See Course Description attached  

Important: Please Complete  

1. Instructor: Kathy Norman  
2. Extension Course Proposal Form (attached)  

SIGNATURES: (COLLEGE LEVEL)  

Kathy Norman 2/1/08  
Mattson 2/4/08  

(UNIVERSITY LEVEL)  

 fís 1/29/08  
Pres President for Academic Affairs (or Designee) 6/1/29/08
Earth's History

This course focuses on the basic geological principles that have shaped the history of the Earth, integrating thematic content in the Life and Earth Sciences with a chronological approach. Week one sets the stage with a review of basic geological principles and field geology. Week two presents the Earth's first billion years with the formation of the Earth and Moon. Reading the fossil record is covered in week three, with evolution and extinction providing the major themes. The Proterozoic and Paleozoic Eras are the focus of week four, and the Mesozoic and Cenozoic Eras are covered in week five.
Earth’s History Edited Syllabus 2007

Faculty Information
Faculty Name: Jim Lucarelli

Address: 657 Carleton Rd Westfield, NJ 07090

Phone: home (908)233 3402   cell (908) 451 5929

Email Address: Geoluke@aol.com or jlcarelli2122@gmail.com

Course Title: Earth’s History

Course Description: Earth’s History offers comprehensive documents that trace the history and evolution of planet earth from the beginning to the present time. The course includes teacher tested activities, instructor support and demonstrations that supplement course documents. Interacting directly with each other as well as the instructor, students share ideas and experiences, ask questions about pedagogical issues, discuss current research and share teaching techniques for providing improved delivery of science instruction. Over the course of five weeks, students read a variety of course materials and perform weekly assignments, including one to two discussion board activities per week. These activities comprise approximately 45 hours of “seat time” of student time. Students taking the course for 3 graduate credits complete a ten to fifteen page Action Research Paper.

Course Delivery: Critical to the professional-development experience of teachers today is learning to function effectively in an online learning environment, one that is destined to expand in the future. Earth’s History is an online course completed in five weeks, with an additional one-week grace period for submitting assignments. Although students may work on assignments offline, all course content, links to supplementary information, interaction among students in the class, class discussions, assessments, submission of assignments, and interaction with the instructor are carried out online, through email and the course site. This online format is designed for educators who need access to professional development on a flexible schedule and who are in different locations worldwide. Not all participants in this course will earn college credit; some are earning CEUs or auditing. Students earning college credit are required to participate in advanced discussions and complete all assignments.

Course Objectives/Outcomes:

Performance Objectives
In this course students will:
1. Define and utilize strategies for determining geologic history; apply the principles of original horizontality, superposition and lateral continuity to reconstruct geologic events, develop timelines; and analyze the limits of these techniques.
2. Understand the process of fossil formation and interpretation.
3. Demonstrate an understanding of classification in organizing the fossil record and use this information to analyze the similarities among living and extinct organisms.
4. Discuss the theory of evolution, the origin of species and extinction using current information and website research.
5. Discuss the structure and origin of the earth and moon as well as the role of plate tectonics in shaping events in the history of the earth.
6. Examine Hadean, Archean, and Proterozoic eras and the conditions that existed during the early development of the earth.
7. Examine the development of the earth's early atmosphere and oceans and discuss the events responsible for the evolution of the planet as well as the origin of life.
8. Review the early forms of life form the fossil record and interpret the role of these early organisms in the evolution of the atmosphere and oceans.
9. Discuss the development of the oceans and how salinity and other factors contributed to the rapid development of life forms; and understand the reasons for the abundance of fossil evidence in the Paleozoic Era.
10. Examine the explosion of life forms that eventually filled nearly every niche using evidence from the fossil record and then discuss the processes responsible for the evolution of plants and animals.
11. Discuss the origin and diversity of prehistoric plants and terrestrial animals and examine how adaptations allowed animals to move from water to land then to the air.
12. Examine how tectonic activity and continental drift influence the evolution of organisms as well as mass extinctions.
13. Discuss repopulation after mass extinctions and the role of the breakup of Pangaea in driving these events.
14. Examine the rise of the dinosaurs, their successful adaptations and their demise after dominating the earth; and then examine and evaluate events that led to the extinction of the dinosaurs.
15. Discuss the rapid rise of the mammals after the dinosaur extinction.
16. Examine the origins of man and their eventual dominance through a study of fossil evidence.
17. Discuss the possible causes and results of ice ages; and examine the effect of ice ages on climate in order to make predictions for the future based on historical cycles.
18. Analyze current state of the earth's condition and develop a realistic model to predict future earth events based on research and current evidence including strategies to cope with climate change, both long and short term.

Lesson Plans
Topic One: Investigating Geologic Time
This Topic provides a general introduction to relative and absolute age dating techniques and outlines some early attempts at age dating the Earth.

Major Ideas:
A. The Dynamic Earth. Discusses the concept of uniformitarianism and the various dynamic processes that continuously shape our planet.
B. Which came first? Reviews the basic concepts used in relative age dating techniques including Steno's Laws and the use of primary sedimentary structures for determining which way is "up" in a geological sequence.
C. A Brief History of Time. Discusses early attempts at age dating the Earth from Bishop Ussher's time using the Bible as a basis to the work of Lord Kelvin and John Joly. Includes
an activity on tree ring dating and explains how varves in ponds can be used to measure the passage of seasons.

D. The Absolute Age. Explains the history and limits of using radioactive elements as an age dating tool. Includes a student activity on calculating the half-life of a sample and using it to determine its age.

E. The Age of the Earth. Discusses the current data on the true age of the Earth and the evidence to support it.

F. The Geologic Time Scale. Explains the evolution of the modern Geologic Time Scale and provides students with an activity to plot an accurate geological timeline.

Topic One Assignments:

a) Introduce yourself on the Teacher’s Lounge Discussion Board. If you’re a classroom teacher, tell where you teach and how long you’ve been teaching, also, state what you hope to get out of this course.

b) Create a student homepage (An optional assignment.)

c) Read the course documents for Topic One.

d) Declare the nature of the credit sought – Graduate, CEU, or Audit.

e) Assignment Question: Review the student activity outlined in the Topic One documents and identify at least three natural (non human) agents of change that are having an effect on the environment near your home or school. Imagine that a large (10,000 square meter) area has been fenced off and there will be no further human intervention. Based on the rates of the agents of change you have just identified, predict what this area might look like 10, 100 and 1000 years into the future. Post your response to the appropriate forum.

f) Topic One Discussion Question: When you teach a concept like Earth History you are dealing with the concept of change which is simply an occurrence of an event. One difficulty is that we humans, and that includes our students too, perceive time from our own frame of reference based on events that have meaning for us - for example a 45 minute class period. For our students time frames of reference for geological events are so large that they are difficult to understand and may become meaningless facts to be memorized for a test and then quickly forgotten. Can you really understand what a 60 million year event means? How would you devise a demonstration to help your students really appreciate and understand an extremely slow event like the movement of the North American Plate at a speed of 2.5 cm per year?

Topic Two: Topic Two Reading the Fossil Record
This Topic examines the origin of life on our planet and discusses the process of evolution. It also takes a detailed look at how geologists read the fossil record and what limitations it presents.

Major Ideas:

A. Make Me a Fossil. Explains some of the different ways that fossils can form; outlines an activity for making simulated fossils; and describes how trace fossils can often be used to fill in the gaps in the fossil record.

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B. Reading the Fossil Record. Examines the various problems and pitfalls that paleontologists must deal with in trying to re-construct different life forms based solely on fossils; and includes an activity that allows students to discover for themselves why it is often impossible to get a complete picture of an extinct life form based solely on the fossils it leaves behind.

C. Ancient Environments. Discusses how the fossil record coupled with sedimentary structures help geologists see the big picture by re-constructing ancient environments, and includes an activity on making inferences based on observations of natural structures.

D. The Classification of Life. Reviews the concept of classification and examines the way that scientists classify living things; emphasizes the idea that all classification systems are arbitrary; and includes a student activity of developing their own classification system.

E. The Process of Evolution. Discusses the process of evolution and examines the role that natural and artificial selection play in the development of new life forms over time.

F. The Origin of Species. Examines the different ways that speciation happens on the planet and compares discusses how both physical and genetic barriers can change the pace of evolution.

G. The Evidence for Evolution. Discusses how studies of DNA have provided some of the strongest evidence in support of the process of evolution and also examines the process of micro-evolution and how things like “super bacteria” offer more “proof” that life forms evolve.

Topic Two Assignments:

a) Read the course documents for Topic Two.

b) Assignment Question: Over the years, the way that life has been classified has gone through a number of changes. All modern classification schemes are based on the phylogeny or evolutionary relationship of one organism to another. In the early days, this was done solely on morphology or the outward appearance of an organism which led to many “wrong assumptions. In the beginning there were only two kingdoms of life... Animalia and Plantae. These days, five life kingdoms are commonly accepted although many biologists now recognize six! Using course documents and external resources outline how the classification of life kingdoms has changed over the years and explain when and why the adjustments came about. Post your findings on the appropriate Forum.

c) Discussion Question: The fossil record is incomplete, has many gaps and therefore sometimes leads to erroneous reconstructions of dinosaurs. When additional evidence is discovered these “mistakes” are corrected and refined. List and describe two instances where new information, discovered by paleontologists, enabled them to improve and revise existing concepts of dinosaurs or other prehistoric creatures. Post your findings on the appropriate Forum.
Topic Three: Earth's First Two Billion Years
The Topic examines the origin of Earth itself and reviews how its internal structure and
tectonic processes constantly re-work the rock record. The origins of Earth's oceans and the
evolution of our atmosphere are also examined.

Major Ideas:
A. Origin of our planet. Discusses the different theories offered to explain the origin of
Earth and some of the recent discoveries made by astronomers that are helping to
confirm some of these ideas.
B. The Inside Story. Examines how the internal structure of the planet helps to unlock
some of the key sets in Earth's early evolution. Explains how Earth's magnetic field is
generated and what impact it has had on the evolution of the planet.
C. Plate Tectonics. Reviews the process of Plate Tectonics and the role it plays in
distributing the continents and directing the evolution of different life forms.
D. The Birth of the Moon Discusses the physical make-up of Earth's moon and some of
the theories offered to explain how it came into orbit around our planet.
E. Hadean Time 4.6 - 3.8 bya (billion years ago). Examines Earth's first 800 million years
and includes discussions about the origins of our oceans and early atmosphere.
F. Archean Time 3.8 - 2.5 bya. Reviews some of the events recorded in the earliest rock
record including the first fossils and the possible origins of life on our planet.
G. Proterozoic Time 2500 - 544 mya (million years ago). Reviews the diversification of life
that happened on Earth just prior to the Cambrian explosion. Also discusses the
evolution of Earth's atmosphere and the role that photosynthetic organisms played in
changing its chemistry.

Topic Three Assignments:
  a) Read the course documents for Topic Three.
  b) Assignment Question: Since the 1950s when Miller and Urey did their ground
breaking experiments, many scientists have accepted the idea that organic
molecules arose from the "primordial soup" of chemicals in our early
atmosphere. Recent discoveries of organic molecules on meteorites coupled
with the discovery of "extremophiles" living in hostile environments deep inside
the Earth suggest that some life forms may have been "imported" to our planet.
Conduct a web search and identify at least three scientifically valid sites that
discuss the origins of life on Earth. Then review the debate about extra terrestrial
origins and present your opinion. Post your findings on the appropriate Forum.
  c) Topic Three Discussion Question: In the 1960's Continental Drift and Plate
Tectonics were touted as 'bold new theories'. Today there is abundant
supporting evidence. In what ways has Plate Tectonics affected the evolution of
species? Post your comments to the appropriate Forum and react to the findings
of classmates.
  d) Begin to formulate ideas for the 10-15-page Action Research Paper and submit a
plan with appropriate resources to the Instructor.
Topic Four: The Paleozoic Era
This Topic takes a close up look at the Paleozoic Era, the period in Earth’s history when the forerunners of most present day animals and plants made their first appearance on the planet.

Major Ideas:
A. The Cambrian Explosion. Discusses the explosion of different life forms that happened in the fossil record at the beginning of the Cambrian period and how life not only diversified, but filled virtually every ecological niche on the planet.
B. An Ocean Runs Deep. Examines some of the physical features of the world ocean and discusses how factors such as salinity and sea level impacted early life forms on our watery world.
C. The Origin of Plants. Discusses the origins of plants and how symbiosis between different living things may have been responsible for developing a wide range of characteristics.
D. Life Moves to the Land. Discusses the origin and diversity of terrestrial animals and examines how specific adaptations allowed early amphibians and reptiles to make their leap to the land.
E. Magnificent Mountain Building. Examines how the process of mountain building happens based on the model offered by plate tectonic theory and explains why these events are often repeated throughout Earth’s history.
F. The End of an Era. Examines the great Permian mass extinction and discusses the possible role that extra-terrestrial impacts have had on changing the course of evolution on our planet.

Topic Four Assignments:
a) Read the course documents for Topic Four.
b) Assignment Question: Today, we have a number of organisms living on the planet that first made their appearance during the Paleozoic Era, making it through at least two major mass extinction events. Based on evidence from the fossil record, these creatures have changed very little over time, yet some how they have managed to survive. Some examples include the horseshoe crab, the shark and of course, the cockroach. The question is, why haven’t these so-called “living fossils” gone extinct and more importantly, why haven’t they shown much in the way of evolutionary change? Obviously part of the reason has to do with how well suited they are to their environment and their overall ability to adapt. Select any one of these living relicts (or another of your choice) and based on its lifestyle; explain why you think it has survived so long. Post your findings to the appropriate Forum.
c) Continue to research the Action Research Paper and submit an outline to the Instructor with appropriate references of lists of goals and objectives.
d) Topic Four Discussion Question: Current debates to explain the extinction of the dinosaurs at the end of the Cretaceous period fall into two categories, the comet impact theory, a catastrophic theory to explain a “geologically instantaneous extinction” and the more gradual “complex ecological change extinction”. Both have merit. There are also several others but they lack strong evidence. Which one theory do you support and why? Post your responses on the appropriate Forum and react to findings and opinions of other students in the class.
Topic Five: The Mesozoic and Cenozoic Eras
This Topic takes an in-depth look at recent Earth history including the death of the dinosaurs and the origin of humans. It also examines humans as an agent of change on our planet and discusses some of the ways that we are impacting future generations of life here on Earth.

Major Ideas:
A. Mesozoic Radiations. Reviews the rebound of life after the Permian mass extinction and the beginning of the breakup of the super continent of Pangaea.
B. The Days of the Dinos. Discusses the rise of the dinosaurs, one of the most successful creatures to inhabit the planet. Examines some of the new theories regarding how they lived and what caused them to die.
C. Mammals, Mammals Everywhere! Examines the rise of mammals and discusses how they rapidly expanded as a group to fill the various niches vacated by reptiles following the end of the Cretaceous period.
D. The Ascent of Man (and Woman)
E. Examines the origins of humans and reviews some of the more important fossil finds in light of new DNA evidence.
F. The Great Ice Age. Reviews the last 2 million years of Earth history and includes a discussion about some of the possible mechanisms responsible for the repeated glacial advances and retreats during this time.
G. Hot Future. Examines our present day environment here on Earth and the increasing role that humans play in changing the "balance of nature". Discusses the concept of global environmental change and its long-term impact on Earth's biosphere.

Topic Five Assignments:
a) Read the course documents for Topic Five.
b) Take the Final Exam.
c) Assignment Question: Somewhere along the line, most of us were taught that all the dinosaurs suddenly went extinct at the end of the Mesozoic Era and with the exception of Barney, there are none living today. Recent finds from China of apparently feathered dinosaurs plus DNA studies have shown that there is an evolutionary link between dinosaurs and birds. This has caused some paleontologists to suggest that the dinosaurs never went extinct at all; they simply evolved to be the modern class Aves. Is this idea for the birds, or does it have some merit. Based on the course documents and external resources, present a case for either side of the argument making sure to site evidence in support of your view. Post your ideas to the appropriate Forum.
d) Topic Five Discussion Question: It can be argued that Humans have been responsible for the extinction of many animals from as far back as the last Ice Age. There have also been many successful attempts to save some species on the brink of extinction. Now we have a new tool CLONING. Should science develop and perfect this technique to reconstitute recently extinct species? Post your responses on the appropriate Forum.
e) Submit the final Action Research Paper to the Instructor. If appropriate, seek input from your peers in online Forums.
f) Complete the JASON Course Survey

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**Action Research Paper Guide for students earning graduate credit:**

In order to obtain three graduate credits, students must complete a 10-15 page Action Research Paper or other scholarly project such as design an instructional unit that teaches specific topics in Earth's History. Action Research for teachers involves an agenda for improving delivery of instruction, and it is helpful if you focus on goals and objectives that will be useful for you in your teaching career. The lesson plans may be adjuncts to your teaching curriculum and should include designs for student inquiry, teacher resources, tools to assess student understanding, and common areas of misconceptions that may affect student understanding of the history of the earth. Inquiry lessons should be based on the use of new technologies (GIS, computer software and probes) to explore Earth's History related sciences, as appropriate to the educational environment. The instructional unit should reflect appropriate state and national science standards and include current science and education articles and/or websites. Articles may include pedagogical issues related to teaching Earth's History.

The following are suggestions for potential Action Research Papers or Action Instructional Plans:

1) Design an action plan for incorporating one to three models of inquiry teaching: inductive inquiry, discovery learning, and problem solving as it would relate to teaching Earth's History.

2) Design an action plan for presenting the concepts in Earth's History and related science skills that would meet the special needs of different learning (visual, auditory, or kinesthetic) or intelligence styles. Describe the various learning styles and the people responsible for identifying them; identify specific strategies for meeting the needs of the different styles; and create two specific activities (and/or use of technologies) to enhance instruction related to the structure of the earth for each style/intelligence appropriate for a specific grade level.

3) Access and research the national, state, and local science standards and benchmarks for reference to content related to the earth and related skills for a specific level of student. Compare the national, state, and local standards. Identify areas of agreements and difference. Identify those standards or benchmarks your district or school currently delivers and supports. Identify those standards or benchmarks you need to develop as a teacher in order to meet all these standards. Develop an action plan for upgrading your knowledge and skills and the knowledge and skills of your students.

4) Develop a sequence of 3 original lesson plans designed to teach a topic in Earth's History. Correlate the lessons to your state standards and indicate how the lessons meet that standard. You should utilize a variety of instructional strategies and modalities i.e. demonstration, audio visual, worksheets/handouts, review and reinforcement, and some form of assessment. These teaching resources need not be original but you must indicate how you will modify them to meet your specific classroom needs.

5) Propose a topic of your choosing which is in need of action research. This topic must receive approval in consultation with the Instructor.

**Texts (required readings):** Course Content found in Blackboard

Earth's History Edited Syllabus 2007
Bibliography (required and optional readings): Course Content found outside Blackboard
a) Students are provided with supplemental readings from articles and websites with Earth’s History related subject matter.
b) Students are given additional resources such as teacher tested classroom demonstrations and motivational strategies designed to generate interest and motivate students through problem solving and inquiry.

Student Evaluation Process:

Students are assessed through weekly on-line discussions, a series of forum questions, a final exam, and the Action Research Project. Not all students seek college credit; some earn CEUs or audit. Students taking the course for 3 graduate credits will complete a 10 - 15 page Action Research Paper. Students may earn 25 points through substantive participation in Topic forum discussions; 25 points through assignments, 25 points on the final exam, and 25 points on the completed Action Research Paper.

Student participation and demonstrated knowledge are evaluated weekly. Postings on the discussion boards should be guided by the following rubric:

- **Level 4:** High-quality professional discourse that invites inquiry. The message creates an inviting framework by sharing a personal reflection; presenting an interesting and well-articulated dilemma, challenge, or issue; or raising a thought-provoking question. The author creates a context where teachers with different levels of concern, knowledge, and experience feel welcome to join the conversation and to carefully consider their own ideas about the subject matter.

- **Level 3:** Thoughtful professional discourse. The message shares information, an issue, or a question in a thoughtful way, which might focus on specific details, explore the "why’s" as well as the "what’s," or explore others’ beliefs and practices. Others feel welcome and encouraged to think about their existing teaching beliefs or practices.

- **Level 2:** Collegial discussion and/or "shop talk." Message could be a response to a previous message; a request; a description of classroom practice; or an issue, dilemma, or challenge that reflects the beliefs or practice of the author but lacks self-reflection and/or an invitation to others to respond. The conversation focuses on disseminating the author’s ideas, questions, or practices rather than encouraging others to examine their beliefs and/or practices.

- **Level 1:** Factual statements or informational. Message is usually a question, a brief statement of fact or opinion, or an announcement that does not tend to stimulate ongoing professional discussion, thoughtful reflection, or examination of beliefs and/or practice.

Action Research Paper Guide:

Students must develop a project which involves at least 15 hours of work. The project should consist of:

- Review of literature on the course materials to select a topic around which to develop a classroom activity or research.
- Correlation of the topic and activity to state and national science content standards.
- Implementation of the project with students or other teachers.
- Evaluation of implementation through student assessment and feedback.
• Analysis of project implementation and assessment results, with recommendations for use of activity and implementation of improvements based upon feedback.

* Students not taking the course for graduate credit do not have to complete the Research Paper and must obtain at least 70 points to pass the course

* Students taking the course for graduate credit will be graded according to the Plus/Minus Grading Scale:

  - A+  97-100
  - A   94 - 96.99
  - A-  90 - 93.99
  - B+  87 - 89.99
  - B   84 - 86.99
  - B-  80 - 83.99
  - C+  77 - 79.99
  - C   74 - 76.99
  - C-  70 - 73.99
  - D   50 - 69.99
  - F   50 >
From: Jacqueline Trischman
Sent: Friday, April 25, 2008 3:43 PM
To: Virginia Mann
Subject: RE: JASON Courses - FYI

Virginia,

Sorry, I did not realize you wanted my signature on these ones.

They look fine for this package of JASON courses.

j Jackie

From: Virginia Mann
Sent: Friday, April 25, 2008 3:39 PM
To: Jacqueline Trischman
Cc: David Barsky
Subject: FW: JASON Courses - FYI

Hi Jackie,

Just wondering if you’ve had a chance to review these courses yet?

Thanks,
Virginia

From: Virginia Mann
Sent: Friday, April 11, 2008 2:34 PM
To: Jacqueline Trischman
Cc: David Barsky
Subject: JASON Courses - FYI

Hi Jackd,

Attached are two Jason courses being offered through Extended Learning for your review, with new descriptions provided by EL attached to the X form:

EDST E1014 – Teaching Earth's History
EDST E1016 – Teaching Practical Meteorology

Please let us know whether you have any comments on these courses.

Thanks,
Virginia

Virginia Peters Mann
Curriculum Specialist
Academic Programs
CSU San Marcos
James P. Lucarelli

657 Carleton Rd
Westfield, NJ 07090
Phone 908 233-3402
Cell # 908 451 5929
E-mail Geoluke@AOL.com
jlucarelli2122@gmail.com

Education

Baruch College (The City University of New York), M.S. Educational Administration, 1987 - 1989
Brooklyn College (The City University of New York), B.S. Geology, 1964 – 1969

Certification

Assistant Principal DES/IS/JHS for City of New York
New York State Certification as School Administrator and Supervisor
New York State Certification in Earth and General Science in Secondary Schools
General Science in Junior High Schools of the City of New York
New Jersey State Certification in Earth Science

Curriculum Writing / Publications

Developed Practical Meteorology graduate course for the JASON Academy

Developed Science Curriculum, complete with lesson plan documents, and assessment for use by New York City science teachers to standardize instruction for the New York City Board of Education and meet the mandates of the Regent Action Plan for New York State.

Created and wrote the curriculum for Earth Extremes and Meteorology science electives for the Clark Public School District.

Educational Advisor for “DINOSAURUS” Magazine. Responsible for developing educational activities for this publication.
Professional / Teaching Experience

Instructor, JASON Academy, 2003 - Present
Teach graduate courses in Earth’s History, Practical Meteorology

Adjunct Instructor, Cambridge College, 2003 - Present
Teach graduate courses in Earth’s History and Laboratory Methods in Earth Science

Clark Public School District
September 2002 - Present
Arthur L. Johnson High School
Clark, NJ 07066

Member AFG Planning Team for the Middle States Validation Team Visit, 2003 - 2004
Responsible for reviewing and evaluating district science program to meet AFG standards.

Science Teacher, 2002 – Present
Earth Science teacher and curriculum writer.

New York City Board of Education
1996 - 2002
Roy H. Mann Intermediate School I.S. 78
Brooklyn, NY 11234

Assistant Principal / Science Supervisor, 1999 – 2002
Responsible for supervising the science program, evaluating and rating science teachers.

Dean / Coordinator, 1996 – 1999
Responsible for administration and coordinating grade activities.

Science Technical Assistance Center
1988 - 1989
Division of Curriculum and Instruction
Queens, NY 11416

Science Staff Developer / Teacher Trainer / Instructor, 1988 – 1989
Responsible for coordinating and conducting city-wide staff development program for science supervisors, curriculum coordinators and new science teachers for the New York City Board of Education, Division of Curriculum and Instruction.
New York City Board of Education  
1985 - 1988  
District #19  
Brooklyn, NY 11207

**Science Staff Developer / Coordinator for District #19, 1985 – 1988**  

**Memberships and Associations**

**Facilitator, Jason Academy, Needham Heights, MA**  
Jason Academy is a leading provider of experience-based science and math curriculum and professional learning for grades 4-9.

**Consultant, Science Plus, Inc., Queens, NY.**  
Science Plus, Inc. a company that provides scientific enrichment and staff development programs to schools, museums and libraries.

**Science Technical Assistance Center, Queens, NY**

American Museum of Natural History, New York, NY

Liberty Science Center, Jersey City, NJ

**References**  
Available on request