TAN TEACHING ANTHROPOLOGY NEWSLETTER

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In this Issue...

Teaching Anthropology Newsletter

Teaching Anthropology Newsletter (*TAN*) promotes precollege anthropology by providing curriculum information to teachers, creating a forum for teachers to exchange ideas and establishing communication among teachers, professors and other advocates of anthropology.

TAN is published free-of-charge semiannually in the Fall and Spring of each school year by the Department of Anthropology, Saint Mary's University, Halifax, Nova Scotia B3H 3C3 (TEL 902-420-5628, FAX 902-496-8109, E-MAIL mlewis@shark.stmarys.ca). Items for publication should be submitted to Monica Lewis, Circulation Manager, or Paul A. Erickson, Editor. Deadlines for submission are October 1 for the Fall issue and March 1 for the Spring issue.

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A Reminder to *TAN* Readers

Manuscripts Welcome

The vitality of *TAN* depends on its content, which to a significant extent depends on *you*. Please send us articles, reviews, announcements and other items pertaining to precollege anthropology teaching.

Biological Anthropology in the K-12 Classroom: Using the New National Science Education Standards

by Lisa Occhiolini

Ed – An earlier version of this article was presented at the 1998 annual meeting of the American Anthropological Association in Philadelphia as part of the session "Anthropology and the Three R's: Reaching the Next Generation".

Now is an important time for biological anthropologists to work toward getting anthropology curricula into K-12 classrooms. Many schools and school districts in the United States are in the process of revamping science curricula and instructional methods in light of the new *National Science Education Standards* (*NSES*) (1996). In addition, there are other educational initiatives afoot that make anthropology attractive: The increasing use of interdisciplinary thematic units, the increased presence of technology in the classroom and the push to incorporate multicultural perspectives. Awareness of these initiatives, coupled with an understanding of the *NSES*, can provide a framework for incorporating concepts in biological anthropology into elementary, middle and high school curricula.

The *NSES* were developed by working groups of scientists and educators and are based in part on the American Association for the Advancement of Science Project 2061 and the related publication *Benchmarks for Scientific Literacy* (1993). The *NSES* call for major changes in the way science is taught in the U.S. Along with Science Content Standards, standards for assess-

ment, science teaching and professional development are described. There are numerous areas in the Science Content Standards (*NSES* 1996:109-11) (see figure) that intersect with topics in biological anthropology.

The "Science as Inquiry" standard relates to the process of learning science. It emphasizes science as an active, or "minds on", process for students -- science as a way of developing and testing explanations. The elements of another standard, "Unifying Concepts and Processes in Science", also are present throughout instruction in all science content areas. "Unifying Concepts and Processes in Science" includes: 1) Systems, order and organization; 2) Evidence, models and explanation; 3) Change, constancy and measurement; 4) Evolution and equilibrium; and 5) Form and function. Anthropologists will note that several of these unifying concepts are important frameworks for description and explanation in anthropology, and they can provide a point of entry for designing anthropology curricular materials to fit the science standards.

Science Content Standards

- Unifying concepts and processes in science
- Science as inquiry
- Physical science
- Life science
- Earth and space science
- Science and technology
- Science in personal and social perspectives
- History and nature of science

Life Science Standards

Levels K-4	Levels 5-8	Levels 9-12
• Characteristics of organisms	• Structure and function in living systems	•The cell
• Life cycles of organisms	• Reproduction and heredity	• Molecular basis of heredity
• Organisms and environment	• Reproduction and behavior	• Biological evolution
	• Population and ecosystems	• Interdependence of organisms
	• Diversity and adaptations of organisms	• Matter, energy, and organization in living systems
		• Behavior of organisms

Science in Personal and Social Perspectives

Levels K-4	Levels 5-8	Levels 9-12
• Personal health	• Personal health	•Personal and community health
• Characteristics and changes in populations	• Populations, resources, and environments	• Population growth
• Types of resources	• Natural hazards	• Natural resources
• Changes in environments	• Risks and benefits	• Environmental quality
• Science and technology in local challenges	• Science and technology in society	• Natural and human-induced hazards
		• Science and technology in local, national and global challenges

Two other content standards cover subject areas where opportunities for biological anthropology curricular development are clear. These are the "Life Science Standards" (*NSES* 1996:106) and the "Science in Personal and Social Perspectives" standard (*NSES* 1996:108). (See the figures for the subject matter [facts, concepts, principles and theories] that K-12 students need to know for these two standards.) Topical areas in biological anthropology that correspond to the content areas in the Life Science Standards include human adaptability, natural selection, human ecology, growth and development, nutritional anthropology and human evolution. Areas that correspond to the Science in Personal and Social Perspectives standard include medical anthropology, demography, paleo-ecology, biocultural evolution, disease ecology and evolutionary medicine.

To realize fully the potential of these areas of interconnection in the K-12 classroom, anthropologists must develop educational packages that are easily usable by teachers. Most K-6 teachers possess no specialization in science, and occasionally even science teachers in the upper grades may not be science specialists. Teachers are busy, needing to meet the needs of a wide variety of students. To create successful materials, biological anthropologists need to gather and analyze examples of successful curriculum packages and programs to provide working models.

One available model is the "kit" approach being taken by established biological supply companies and publishing houses. These organizations followed the development of the *NSES* closely, creating kits or packages that use the inquiry approach to guide students toward discovery of recommended processes, concepts and content. In this approach, rather than using textbooks, teachers use three to four kits per year on units such as "Balancing and Weighing", "Organisms" and "Insect Life Cycles". The best of these kits contain most of the materials needed for the unit, plus background material, lesson plans, assessment guides and

teacher instructional videos. If anthropologists want to be successful in having anthropological curricula adopted, they need to incorporate the best aspects of these kit-type approaches.

Another excellent model is provided by *Project Archaeology* (1993), a program developed by the U.S. Bureau of Land Management for teaching methods and concepts in archaeology. In *Project Archaeology*, central concepts in archaeology have been distilled down to eight straightforward but powerful core lessons. This inquiry-based program supplies detailed lesson plans and support materials and, perhaps most important, a workshop to train teachers. Teachers who attend the workshop do the lessons themselves (an approach that is emphasized in the professional development standards section of the science standards). Biological anthropologists could use this core lesson approach in creating curricula for K-8 students. Central concepts might include: Variability, adaptation, natural selection, structural/functional relationships, the nature of culture and the interaction of biology and culture.

It can also be useful to think about curricular materials from a "top-down" perspective. What issues and concepts in biological anthropology would be most important and valuable for high school students to know? What can anthropology bring to K-12 education? Genuine understanding of some of the concepts in biological anthropology could help create more tolerant and less parochial citizens, with a heightened awareness of the cultures and needs of peoples around the world, of the pressures that people place on the global environment and of the ways that culture is changing the physical environment to which people (and all other organisms) must adapt. Learning about human biology and behavior from a cross-cultural and evolutionary perspective provides insights that are not easily obtained elsewhere.

When developing curricula, anthropologists need to choose topics that are interesting, lend themselves to inquiry-based approaches, have connections to other subjects and provide opportunities for the meaningful integration of technology. Some examples of inquiry-based projects are available in *Teaching about Evolution and the Nature of Science* (1998). More projects need to be developed, especially in the area of human biology. Many topics, or questions, have development potential. How does one identify a species in the fossil record? Are there biological human races? How does nutrition or disease affect human growth? How does knowledge of the evolution of the human brain inform our understanding of human behavior? How do lifestyle changes influence risk for "diseases of modernization"? What insight can an "ecology of disease" perspective bring to understanding the different patterns in AIDS incidence around the world?

Undoubtedly there are many professors and teachers who approach the examination of these issues imaginatively. We need to develop a way of drawing these approaches together under a common umbrella, testing them and preparing inquiry-based classroom materials that can meet the needs of non-specialist teachers. We need to emphasize ways that technology can be integrated, e.g., on-line resources, data sets (anthropometric, nutrient content, energy expenditure), digitized and/or scanned images (fossil hominids, bone assemblages), and excerpts from ethnographic literature that middle and high school students can access and understand. "Inquiries" presented on interactive CD-ROM disks, similar to those currently being developed for undergraduate anthropology courses, are another possible approach. Having students use data analysis programs and presentation software meets the goals of both mathematics and science standards.

Developing K-12 curricula is important for the future of anthropology. The American Anthropological Association has identified this as a goal, both as a way of broadening interest for college courses in anthropology and as a way to expand opportunities for anthropologists beyond college teaching. Another type of opportunity for anthropologists is in creating workshops geared toward professional development for K-12 science teachers. Anthropology departments, using the resources of museum collections, data sets and the expertise of their faculties, can provide opportunities for teachers to engage in science inquiry themselves and forums for anthropologists and teachers to work together to refine lesson plans and curriculum materials (see page 5 of this issue of *TAN*). People find anthropology intriguing, and anthropologists should build on this potential.

There is a great deal that anthropology can offer to K-12 education. The interdisciplinary nature of anthropology makes it a "natural" as a source of thematic

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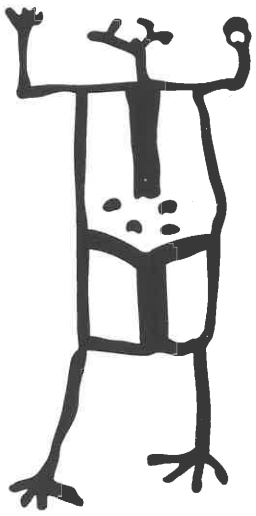

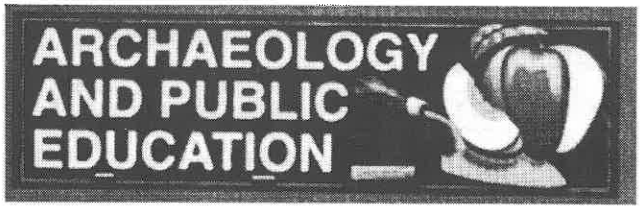

Archaeology and Public Education Ceases Publication...

But Watch for Something New!

Archaeology and Public Education began nine years ago as the newsletter of the Public Education Committee of the Society for American Archaeology (SAA). The newsletter grew into a professional three-times-yearly publication that explored aspects of archaeology of interest to classroom teachers. A favorite feature, the "Education Station", featured lesson plans and ideas about how to use them.

Unfortunately, as the popularity of *Archaeology and Public Education* grew, and the number of its subscribers increased to more than 10,000, so did the costs of its production and distribution. Soon the newsletter became a financial liability to the SAA, and in 1998, with deep regret, the SAA decided to cease publication with Volume 8, Number 3.

In 1999, the Public Education Committee will introduce a new biannual series of monographs geared primarily for the lay public. Each monograph will feature articles about an archaeological topic supplemented by advice on how to approach the topic educationally. The monographs will be sold individually. *TAN* readers should look forward to the inauguration of this new series.

Past issues of *Archaeology and Public Education* will survive electronically on the SAA WWWeb site (http://www.saa.org), which will assume the function of providing news and notices of interest to precollege archaeology educators. For more information, contact former *Archaeology and Public Education* co-editors Amy Douglass (amy_douglass@tempe.gov) and KC Smith (kcsmith@mail.dos.state.fl.us).

Announcing A University Course...

Archaeology for Educators Anthropology 475

5 July - 6 August 1999

Central Connecticut State University

Archaeology, the scientific study of the human past, involves integrated learning opportunities that capture student attention. Archaeology has been used successfully in social science, physical science and language arts curricula to promote problem-solving skills and cooperative learning. Designed to be hands-on, this course will use locally available resources and lesson plans for precollege educators.

Archaeology for Educators, a three-credit course, is designed to introduce teachers to the field of archaeology. In conjunction with a field school in historical archaeology, students will help map an African-American cemetery, learn the basics of archaeological methods and gain an overview of Connecticut cultures (African-American, Native-American and European). Graduate or undergraduate credit is available through the Division of Continuing Education.

Cost: Summer session tuition rates are $465 per three-credit undergraduate course, plus a $42 registration fee, or $525 per three-credit graduate course, plus a $45 registration fee.

Staff: The instructor will be Dr. Elena Filios of the Department of Anthropology. Dr. Filios is also Massachusetts Public Education Coordinator of the Society for American Archaeology and director of the Southern New England Archaeology Program at Central Connecticut State University. She possesses more than 20 years experience in the archaeology of southern New England. The director of the field school in historic archaeology will be professor Warren Perry of the Department of Anthropology and a specialist in African and African-American archaeology.

Questions? Contact Dr. Elena Flios by telephone (860-832-2612 or 860-832-2610) or e-mail (FiliosE@ccsu.edu) or write to the Central Connecticut State University, Division of Continuing Education, 1615 Stanley Street, New Britain, CT 06050.





Meetings of Interest – 1999

May 21-23 *Society for Cultural Anthropology*, Annual Conference, San Francisco, CA. Theme: "States of Power: Culture, Governmentality and Market in Transition". Contact Jan Meier, AAA Meetings Department, 4350 North Fairfax Drive, Suite 640, Arlington, VA 22203-1620 (jmeier@ameranthassn.org).

May 23-31 *International Rock Art Congress 1999*, Ripon Wisconsin. Contact Celia A. Daniels, University of Kansas Museum of Anthropology, Lawrence, KS 66045 (TEL 785-864-2669, E-MAIL cadaniel@falcon.cc.ukans. edu).

June 29-July 3 *International Society for Humor Studies*, 11th Annual Conference, Oakland, CA. Contact Martin D. Lampert, Department of Psychology, Holy Names College, 3500 Mountain Boulevard, Oakland, CA 94619-1699 (TEL 510-436-1699, E-MAIL humor99@academ.hnc.edu).

July 2-4 *Engendering Material Culture*, 5th Australian Women in Archaeology Conference, Sydney, Australia. Contact Laura-Jane Smith, Aboriginal Research and Resource Centre, University of New South Wales, Sydney, NSW 2052 (TEL 61-2-9385-1267, FAX 61-2-9385-1062, E-MAIL lj.smith@unsw.edu.au).

July 10-23 *Australian Anthropological Society*, 25th Annual Conference, Kensington, Australia. Contact Grant McCall, School of Sociology, University of New South Wales, Sydney NSW 2052 (TEL 61-2-9385-2408, FAX 61-2-9313-7859, E-MAIL g.mccall@unsw.edu.au).

October 20-24 *American Folklore Society*, Annual Meeting, Memphis, TN. Contact AAA Meetings Department, 4350 North Fairfax Drive, Suite 640, Arlington, VA 22203-1620 (TEL 703-528-1902, x3025, E-MAIL jmeier@ameranthassn.org).

November 7-11 *Human Remains: Conservation, Retrieval and Analysis*, Muldidisciplinary Conference, Williamsburg, VA. Contact Deborah S. Chapman, Williamsburg Inst. Post Office Box 1776, Williamsburg, VA 23187-1776 (TEL 800-603-0948, FAX 757-565-8630, E-MAIL dchapman@cwf.org).

November 17-21 *Association for Canadian Studies in the United States*, 15th Biennial Meeting, Pittsburgh, PA. Contact Don Alper, Center for Canadian-American Studies, Western Washington University, Bellingham, WA 98225-9110 (TEL 360-650-3728, FAX 360-650-3995, E-MAIL alper@ cc.wwu.edu).

November 17-21 *American Anthropological Association*, 98th Annual Meeting, Chicago, IL. Theme: "Time at the Millennium". Contact AAA Meetings Department, 4350 North Fairfax Drive, Suite 640, Arlington, VA 22203-1620 (TEL 703-528-1902, x2, E-MAIL jmeier@ameranthassn.org).

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