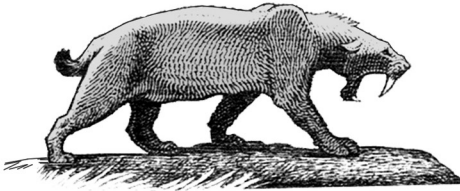
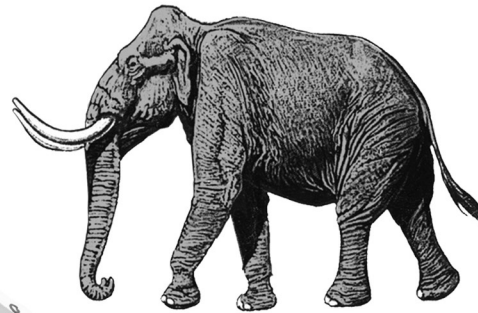


**SANTA BARBARA CITY COLLEGE**

31st ANNUAL FACULTY LECTURE

**Exiled Mammoths  
of the  
CHANNEL ISLANDS**

and



**Saber Tooth Cats  
of  
RANCHO LA BREA**

**The Last Great Extinction!**  
**Dr. Robert S. Gray**

March 11, 2010  
2:30 p.m.

Sports Pavilion  
East Campus  
Santa Barbara City College

*Reception Follows*



# SANTA BARBARA CITY COLLEGE

## ANNUAL FACULTY LECTURES

This is the 31st in a series of lectures wherein a distinguished Santa Barbara City College faculty member is chosen by colleagues to deliver an address on a scholarly subject of general interest.

### THE CRITERIA FOR SELECTION

Outstanding classroom teaching, counseling, or librarianship, unselfish, dedicated faculty service to Santa Barbara City College.

### PREVIOUS FACULTY LECTURE HONOREES

Dr. Robert Casier .....	1979-80
Mr. Henry H. Bagish .....	1980-81
Dr. Charles R. Courtney .....	1981-82
Dr. Harold M. Dunn .....	1982-83
Dr. John Kay .....	1983-84
Mr. Raymond O'Connor .....	1984-85
Dr. Barbara S. Lindemann .....	1985-86
Dr. Elwood Schapansky .....	1986-87
Dr. George E. Frakes .....	1987-88
Dr. Elizabeth Hodes .....	1988-89
Dr. Jack R. Ullom .....	1989-90
Dr. Curtis B. Solberg .....	1990-91
Ms. Diane Johnson Handloser .....	1991-92
Dr. Robert J. Cummings .....	1992-93
Mr. John C. Egglar .....	1993-94
Mr. Michel Masson .....	1994-95
Dr. Gary L. Carroll .....	1995-96
Mr. David N. Lawyer, Jr. ....	1996-97
Mr. Joseph P. White .....	1997-98
Dr. Manoutchehr Eskandari-Qajar .....	1998-99
Dr. Jeannette Webber .....	1999-00
Dr. Peter Haslund .....	2000-01
Ms. Genevieve B. Anderson .....	2001-02
Mr. Carl W. Sundbeck .....	2002-03
Dr. Janet Shapiro .....	2003-04
Dr. Peter Georgakis .....	2004-05
Mr. James Cheshier .....	2005-06
Dr. John Clark .....	2006-07
Mr. Don Barthelmess .....	2007-08
Dr. Karolyn R. Hanna .....	2008-09

## ABOUT THE LECTURE

Picture if you can the modern day Serengeti Plain in Africa hosting nearly 2 million large herbivores migrating some 250 miles or more. Shadowing this migration are the carnivores lying in wait. Some 70 species of large animals (megafauna) roam the Serengeti Plain.

Now picture if you can, a similar scene from the Los Angeles basin and parts of Southern California some 30,000 years ago (BP.) A unique combination of habitats enabled the Los Angeles basin and Santa Barbara, too, to support an array of big animals as abundant as, and more dazzling than, that of a modern Serengeti Plain. Mammoths, mastodons, camels, horses, giant ground sloths, longhorn bison, ancient bison and pronghorns grazed the region.

These herbivores were prey for meat-eaters unlike any alive today: the great cat of California, more than 1½ times larger than the African lion; the savage short-faced bear, again 1½ times as large as the grizzly bear; dire wolves which were bigger versions of today's wolves; ancient coyotes; and most spectacularly, the saber-toothed cat.

One of these other large animals existed only in one place on earth and that place is the Santa Barbara Channel Islands. This herbivore was known as the exiled (pygmy) mammoth (*Mammuthus exilis*). No other large fossil animal is known from the Channel Islands.

There is something mystical about the Channel Islands. They stand rugged and firm somewhere beyond our daily reach. They seem to be telling us a story about a different time and a different place. So it is when you step onto these islands. You are catapulted back to a time when miniature mammoths roamed the islands. How did they get there and how did they downsize? How do they compare to their country cousins on the mainland?

But, ah! This pantheon of large animals all vanished around 12,900 years ago (BP) in a geological eye blink. Also, at this time, the Northern Hemisphere was hit by the Younger Dryas (YD), a strong mini ice age (about 1,300-year duration). It took just months for North America to be engulfed by this ice age. The cause of this mega fauna mass extinction and the onset of the Younger Dryas (YD) mini ice age has been a much-debated mystery.

The usual suspects for this 12,900 years BP event have been known for decade(s). They are (1) The Human Blitzkrieg Machine (human hunting); (2) Good Climate turned bad (ice-age climate stresses); and (3) Fungus Among Us (A virus plague causing megafauna pandemic). So far none of these hypotheses have fully satisfied the critics. Tantalizing as all these hypotheses are, there is a new paradigm arising that has captured the imagination of many scientists. This new hypothesis suggests that the ecosystem disruption and widespread mass extinctions were caused by a major extraterrestrial event. This hypothesis implicates an exploding fragmental comet airburst over Canada. Although there is no known impact crater site, there is enough newly emerging evidence to make this hypothesis a formidable opponent for this **Last Great Extinction**.

## ABOUT THE LECTURER

Dr. Bob Gray grew up in an orphanage in Altadena, California. At 17, he started college at Los Angeles Valley Community College. His original career goal was to be an athletic coach. Bob went out for the LA Valley track team. Bob's track coach explained that his Physical Geology class needed students, so he signed the team up for his class. That's how Bob Gray discovered his life's calling.

At 18, he left Los Angeles and went to Idaho to work and decided to go to college at the University of Idaho. He earned two Bachelor of Science degrees: one in Geological Engineering and one in Naval Science.

Upon graduation, the U.S. Navy got him. He served 3 years on active duty (and another 18 years in the Naval Reserves in Naval Oceanography and Intelligence). Bob then returned to college – this time at the University of Arizona – and earned an M.S. in Geology. His Master's thesis was mapping rock units on the edge of the Grand Canyon. He then went to work for the U.S. Geological Survey in Flagstaff, Arizona and later for a mining company in the Four Corners area, exploring for copper mineral deposits.

After earning his Ph.D. in Geology, he worked in petroleum exploration as a Research Geologist out of Denver. He loved his job, and fieldwork was his passion. He scoured the Four Corners mapping algal carbonate rocks. He mapped from Sedona, Arizona to Rock Springs, Wyoming, and from Denver, Colorado, to Ely and Elko, Nevada. He authored papers on carbonate rocks of the Four Corners region, and on paleontology and sedimentation of non-marine sediments in southern Arizona.

In 1967, Bob switched career paths and came to Santa Barbara City College as an interim geology instructor, a stepping-stone to a four-year university position. Instead, he discovered the joy of “hands-on” teaching at the community college level. He loved working with college students, showing them the wonders of geology.

Almost immediately, he got in on the bottom floor of program-building here at SBCC. He helped create the Marine Technology Program; build the new Life Science-Geology Building (now Earth and Biological Sciences); establish the Geology Majors Program and a two-year Geoscience Technology Program.

Through his contributions, the SBCC Earth and Planetary Sciences Department has developed into a geology program that is second-to-none in the California Community College system. His hard work, field excursions, and the scientific grants that he has written and won over the years have helped to build up the department's collections of rocks, minerals, fossils, maps and geology field equipment that rival the collections of many four-year geology departments.

Bob Gray is also the “go to” Paleontology Consultant for the Tri-Counties region for the past 25 years. He has authored Paleontological EIRs for numerous California projects.

Bob has received numerous awards over the years. Most notable was the Grover E. Murray Memorial Distinguished Educator Award from the American Association of Petroleum Geologists at their international annual meeting in 2008. This award is given to only one college geology educator in all of the United States per year. Bob is the only community college educator to receive this award since its inception.

Some of his other notable awards include the “Thomas Dibblee Distinguished Lecturer Award” from the Santa Barbara Gem and Mineral Society in 2006, the “SBCC Faculty Excellence Award” in 2003, the “John Woolley Outstanding Undergraduate College Educator Award” from the Coast Geological Society in 2003, the Pacific Section American Association of Geologists “Distinguished Educator Award” in 1998, and SBCC's Cal Reynolds's Award for his outstanding service to SBCC in promoting student activities in 1981 and 1982.

In 2006, Bob was honored by the Dibblee Geology Center at the Santa Barbara Museum of Natural History when they published a geologic map in his name. On certain appropriate occasions, the Dibblee Center releases a new published geologic map to honor an outstanding geologic professional whose “work has been of significant value in promoting field geology.” The Geologic Map of the Big Pine Mountain Quadrangle, Santa Barbara County, California is dedicated to him.

Bob is a tireless volunteer in our community. He leads/assists the YMCA Fit for Life Senior Fitness class two to three times a week. He represents SBCC at almost every local elementary school science fair. He gives talks to various geological organizations, scientific societies and community groups whenever asked. For over 16 years he coordinated the Santa Barbara City College Geology Club's “Mucker's Ball” – a 49ers style – event in which the SBCC Campus Center was transformed into the 1849 Mother Lode and Gambling Casino.

Outside his professional life, Bob met his wife, Marcia, at a country-western dance class in 1990. Marcia propelled Bob into the world of country-western dance competition (think “Dancing with the Stars”). By 1996, they had competed their way to the top, and they became the World Champions in the Showcase Gold Division at the Country-Western Dance Competition in Nashville, Tennessee.

Bob follows a path of dedication, excellence, enthusiasm and unstinting generosity. To his core, Bob believes that the beauty of SBCC's geology program is not the new building, the scientific equipment, the extensive rock and paleontological collections, or even the nonpareil field geology program – it is the geology majors. Bob has an infectious love for geology and a passion to teach by caring. But in caring, he would tell you that he demands excellence and is relentless in dogging his students to do better and to excel to their utmost. Bob knows that true teaching must be concerned with the whole student, whose attitude, orientation and performance is formed by a multitude of experiences.

## ACKNOWLEDGEMENTS

Life has blessed me many times. Somehow the path was there before me and how lucky I have been to follow it. However, I am indebted and grateful to many people who I have met in this great adventure of life. I am thankful for the friendships of so many people who have shared their lives, their fun and their laughter with me.

I am grateful to this great nation that has allowed me to go to college and gave me the stepping-stones toward my life's career. You can't beat that!

Furthermore, a round of gold medals should go to my outstanding colleagues in the Earth and Planetary Sciences Department who have shared my enthusiasm for the wonderful earth that's all around us. What a great place to work!

Another gold medal should go to my wife, Marcia, for being patient (well, relatively patient) during my days and nights working on this talk. She has constantly shared my failures, as well as my successes. What a way to go!

There are so many people to thank for their support, but these are some who have truly assisted me in this adventure. I want to thank Dr. James Kennett (UCSB) who provided me with technical assistance, research materials and wonderful words of wisdom for this talk. Also, a special thanks to John Iwerks for his inspiring cartoons and paintings and to Melissa Macias for her creative ability with Photoshop and Powerpoint. A tip of my hat to John and a hug to Melissa. Many, many thanks to you. Surely I couldn't have done the logistics without Bill Harz, Danielle D'Alfonso and Naomi Sullwold. Now where are those fossil bones?

I also acknowledge and sincerely appreciate the assistance of many SBCC staff personnel who have made possible the setting for this 31st Faculty Lecture. The excellence of our faculty is matched by the excellence of those who support us.

Some of my greatest lifetime experiences and some I am most proud of are our geology majors, past and present. They never gave up on the goal of becoming geologists or being in the field of geology. How fortunate I have been to be surrounded with these gifts of life! Ah! To stay young at heart for a lifetime.

There's no doubt that I have left out many others who have also inspired me and created a path for me to follow. Somehow my memories are fading, as a tear comes to my eye. I never had to walk alone!

Finally, I want to again thank my wife, Marcia, for her love, beauty, understanding and patience. It's hard to be married to a person who eats, drinks and lives geology and who is measured in geologic time. Honey, I love you!

## DEDICATION

I would like to dedicate this lecture to two departed friends and colleagues whose memories are still with me. First, to Phil Olsen, my colleague in the Earth and Planetary Sciences Department. We shared so many wonderful geological adventures and so many interesting Naval stories during more than two decades at SBCC. Second, to Dr. Peter Angeles, my Philosophy Department colleague at SBCC. Peter lit up my life for one who was outside of the realm of natural sciences. He had quite an insight into the natural sciences and we shared many wonderful communications about nature. I also want to dedicate this talk to those who made our geology program great—the geology majors past and present. They, too, have helped to light up my life.

***Keep on Digging!***

### **A Passion for Gold**

*Ever drifting down the stream  
Lingering in the golden gleam  
Life, what is it but a dream?*

Lewis Carroll

*The most beautiful and most profound emotion we can experience is the sensation of the mystical. It is the course of all true science. He to whom this emotion is a stranger, who can no longer wonder and stand rapt in awe, is good as dead.*

Albert Einstein

