

NJSTA Newsletter



NEW JERSEY SCIENCE TEACHERS ASSOCIATION

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NUMBER 9

President's Message

As the school year comes to a close, take time to reflect upon the successes and challenges that you faced this year. Look ahead to the summer as a time



Christine Lijoi
President

to put the past year in perspective and look ahead to the promises of the new school year. Visit science centers, national parks and other venues to get a fresh look at your discipline. It is important to use this valuable time to refuel and refresh.

One area that we should look at is the work that we do with students beyond the classroom. One of the teachers at my middle school comes to mind. He has set up an incredibly successful critter club. Each of the life science classrooms house living specimens that allows their coursework to come to life. We have a variety of snakes, turtles, bearded dragons and geckos to name a few.

The students in the club take on the responsibility of caring for the animals. Some stu-

dents faithfully take this on every day after school. The other advisor to this club is the one of the local D.A.R.E. officers, which provides another avenue for students to interact with the police in a positive way. This year, the club members invited their families to a dinner meeting where they released the turtles into our pond for the summer. The most rewarding aspect is this club has given many students a meaningful connection to the school community that would not have existed if there were no critter club.

Science teachers should also look to their counterparts in other disciplines for support and encouragement. The STEM initiative

brings together science with technology, engineering and mathematics. Plan for meaningful experiences with your students that incorporate these important disciplines.

And finally, think about becoming more involved at the state level. Plan on attending our conference in October and attend our executive board meetings on the second Wednesday of every month. Check out our website at njsta.org for exciting news about science education in New Jersey. Our mission is to promote excellence and innovation in science teaching and learning for all. If I can be of any assistance, please don't hesitate to contact me at clijoi@summit.k12.nj.us. ☼

A STORM IS BREWING AT THE NEW JERSEY SCIENCE CONVENTION!

A storm is brewing at the New Jersey Science Convention, a premier professional development event for educators. Teachers at all grade levels, as well as future professionals, are invited to attend the 34th Annual Science Convention on October 12th and October 13th, 2010 at the Double Tree Hotel, Holiday Inn, and Garden State Exhibit Center in Somerset, NJ. This two-day event includes approximately 200 workshops, great "hands-on" activities, demo dens, and extensive networking opportunities.

The Annual Banquet on Tuesday, October 12 will feature Tom Samaras, a National Geographic emerging explorer. Tom will share his experiences as a severe storms expert and tornado chaser. Science professionals from the National Science Teachers Association (NSTA) and the National Science Education Leadership Association (NSELA) have been invited as special guests to share their expertise and enthusiasm for science education. Vendors in attendance will provide new and innovative science products and services. Come to the 34th Annual Science Convention to experience the best in professional development; be blown away and be part of the adventure.

NJ Science Convention has signed on with Cvent for our 2010 Convention and beyond. In order to save money on printing and postage, this May's brochure will be the final mailing that prospective attendees will receive via the postal service. It is, therefore, very important that you register online if you plan to attend Science Convention this year. Even if you cannot attend, we ask that you share a valid email address with us so that you won't miss out on information about future Science Conventions. Visit our website at www.njscienceconvention.org for complete information. ☼

INSIDE:

THE SCHOOL YEAR IS ALMOST OVER AND IT IS TIME TO REWIND AND REFRESH. SEE THE SPECIAL MENTAL GYMNASTICS FOR SUGGESTED SUMMER READING

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Tom Smith - Our Newest Fellow

Nancy Bennet gave the following presentation at the NJSTA spring meeting.

When a call for nominations went out in the wintertime, many Executive Board members responded, members from the South, Central and Northern regions. All suggested the same name – all pointed out the same characteristics that exemplifies the Fellows Award. At this Spring Meeting it is tradition that we honor an individual who gives to the Association of time and talent to a degree not normally expected of them.

These were some of the words of nomination of this individual.

A highly ethical individual, who researches thoroughly, consults with colleagues and thinks carefully about the issues at hand before making a suggestion or decision. He makes an excellent moderator in



NJSTA President Chris Lijoi(left) and Nancy Bennet present Tom Smith with the Fellows Award.

a heated debate, because of his ability to turn down the heat to simmer, allowing apparently conflicting ideas to connect.

Another's words of nomination

He is an impressive leader. He has the courage to engage a problem and fearlessly ask all the right questions. If you were to enter a quest, a challenge or a debate, he is the one you would like on your side.

And another

He is the ultimate professional He is very thoughtful and diligent and has a true



Tom Smith (second from left) joins past NJSTA Fellows at the Spring Meeting.

sense of what good science is all about.

Obviously, it was not a difficult decision for the Awards and Presentation Committee to bring this name forward for election.

Tom Smith, you have a most impressive resume.

Last year you retired from the East Brunswick Public Schools, where you supervised the Science and Gifted & Talented Education. You had eleven schools, 9000 students, and 220 staff members to supervise and evaluate.

You had earned this nearly 20-year position by your previous experience as a science supervisor and as a science teacher, of middle school teaching 7th and 8th grade to AP Bio and all the life sciences between.

You hold four certifications – Teacher of Science to Chief School Administrator. Obviously a Jersey man, earning degrees and certifications from Rutgers undergrad, Rowan (you knew it as Glassboro) for your Masters, Rutgers again for PhD work and the NJEXCEL Program.

Let's talk about your real job – innovating and advocating NJSTA into the next millennium! As a working President you attended CAGS in Indianapolis meeting with other national science leaders. This sparked your keen interest in BaPs and a building a true

strategic plan for NJSTA vision. On these two campaigns you continue to work.

Efforts you contributed that year – beginning science standards work for the state, coordinating STEM education, working with the Math Coalition, liaise with AMT-NJ, joining the Math and Science Coalition, guiding the state in the change in requirements for graduation, the end of the year biology exam, advocating for elementary science, and participating in the first on-line leadership conference, and attending the Boston national conference. That was just in 2007-8.

During your reign our newsletter first went on line, and you honored us with business cards and notepads with the NJSTA logo to spread the word and add to our professional appearance.

Since Presidency Tom, you have stayed ACTIVELY involved. Now as our Treasurer and as a representative to the Maitland P. Simmons Awards Committee and working hard on that most cantankerous issue of all - the website management.

Back to your personal attributes – innovator, researcher, leader, moderator, professional, advocator for science education for all.

Tom Smith we thank you for your work that you do - to promote excellence and innovation in science teaching and learning for all.

Congratulations! ❁

Summer Starlab Training offered at NJACE

The New Jersey Astronomy Center (NJACE) at Raritan Valley Community College is offering one Starlab Training workshop in Summer 2010. Teachers can attend a two-day Starlab workshop to become certified in Starlab; enabling them to rent a Starlab from NJACE for use in their school.

What is Starlab?

Starlab is a portable planetarium made of fabric, which is inflated by a fan and capable of accommodating approximately 25 students. A star projector recreates the sky, including the Sun, Moon and Planet positions on the dome, for any time or place on earth. Starlab is compact enough to fit into a small car and is easily set up in 15 minutes. It requires a clean floor space of 20' x 22' and a 12' ceiling.

Rent a Starlab

Any teacher who has attended an NJACE Starlab certification course (or can provide proof of certification), is eligible to rent a Starlab. Teachers must pick up and drop off the Starlab at NJACE (located at Raritan Valley Community College). The cost is \$250 per week, and includes the rental of the dome, blower and cylinders. NJACE offers a wide variety of Astronomical cylinders including the Basic Starfield, Solar System & Galaxy, Greek Mythology, and Native American Mythology. March is the busiest month for Starlab rental; it is recommended that you book well in advance for this month, or consider alternative dates. More information about Starlab rentals and a full list of cylinders is available at <http://www2.raritanval.edu/planetarium/starlabrentals.htm>

Become a certified Starlab teacher

NJACE is offering a 2-day summer Starlab workshop to train teachers in the use of Starlab. This workshop is designed to help teachers make astronomy come alive for their students. Abstract ideas such as the Earth's daily and annual motions, moon phases, constellations and seasons are easily presented in Starlab. During the workshop, participants will practice setting up and taking down Starlab and practice operating the projector. Teachers will have time on the second day to design, practice and present their own Starlab lesson.

The cost of the two-day workshop is \$250 per person, but scholarships are available to bring the cost down to \$125. The workshop includes curriculum materials for grades K-12, Starlab certification, breakfast/lunch and 12 PDU hours.

Dates: Tuesday and Wednesday, July 27-28 (9am-4pm)

To Register: See www2.raritanval.edu/planetarium for registration forms.

Teachers must contact NJACE to reserve a spot while the district processes their paperwork. Fee: \$250* Discounted to \$125 for the first 16 registered teachers. (12 PDUs)

For more detailed information, contact Theresa Moody at 908-526-1200 x 8942 or email tmoody@raritanval.edu.



Hands on science—Students enjoy some of the many NJSTA activities at Super Science Saturday at the NJ State Museum. They explored the nature of water and created shaving cream tie dyes.

Earth Science Resources

Here are a few sites to review this summer.

Live Binders-The Knowledge Sharing Place

Create a 3-ring Binder on the web and easily collect, organize and store all of your online resources. You can use it for yourself, direct your students there or view other binders. Best of all, it's free! <http://livebinders.com/>

The Sand Website

Check out the Sand Web Site for an online virtual sand collection and investigation. Observe how the structures, textures and composition of sediments vary with the environment in which they form. The Sand Web Site is always looking for new and interesting sand to add to the virtual sand collection. Keep them in mind if you find yourself on a beach this summer! http://www.paccd.cc.ca.us/instadmn/physcidv/geol_dp/dndougla/SAND/SANDHP.htm or Google Sand Web Site.

Science-Class.net

If you teach middle school science, you must check out this site. A well organized compilation of resources: Activities/Labs, Online Quizzes, Interactive Resources and Study Aids. <http://www.science-class.net/index.htm>



**Visit
NJSTA
on the
web
www.njsta.org**

Mental Gymnastics

YOU CAN USE TOMORROW by Mitch Batoff, Past President NJSTA mbatoff@aol.com



More Thought Provoking Problems and Queries --

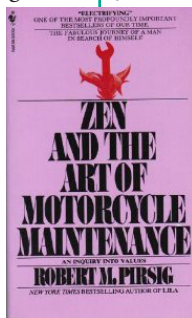
336. SUMMER READING GEMS.

Introduction. Hopefully you believe that some of your students are capable of handling a summer job, having fun at the beach, carrying on an active social life—and also reading some noteworthy books. Often a book can be the spark that ignites a desire to pursue a career in science or engineering; or a life-long interest in a certain area of the sciences. Numerous cases can be cited. Here is one example: Bruce Alberts, pioneering molecular biologist and president of the National Academy of Sciences, has stated “I know that many, if not most, scientists of my generation will cite the same two books as being the most influential in beginning the glimmer of a dream that they might some day be a scientist. These are *Microbe Hunters* and *Arrowsmith*. I read both these books when I was 15 or so...” Quite a number of the books on the following list are memorable classics, timeless and of enduring value. Others, more recent, such as *Chaos* by James Gleick and *The Beak of the Finch* by Jonathan Weiner are destined to become classics in the literature of science and mathematics. Many are neither but I believe are special in some way. All have been selected for one or more distinct reasons. —See comments at the end regarding the Internet.---

Robert M. Persig, *Zen and the Art of Motorcycle Maintenance*.

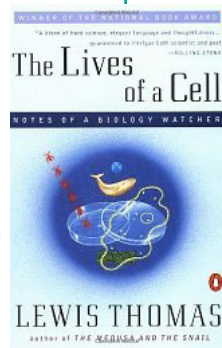
Paul de Kruif, *Microbe Hunters*, with a new Introduction by F. Gonzalez-Crussi, M.D.; James D. Watson, *The Double Helix: A Personal Account of the Discovery of the Structure of DNA* (See in particular,

A Norton Critical Edition with text, commentary, reviews and original papers, edited by Gunther S. Stent); Francis Crick, *What Mad Pursuit: A Personal View of Scientific Discovery*; Anne Sayre, *Rosalind Franklin and DNA*; Lewis Thomas, *The Lives of a Cell: Notes of a Biology Watcher*; and Jonathan Weiner, *The Beak of the Finch: A Story of Evolution in Our Time*.



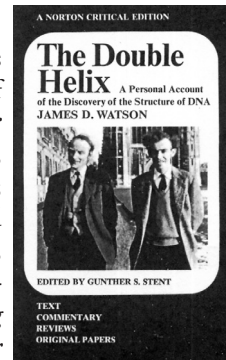
Aldo Leopold, *A Sand County Almanac* and *Sketches Here and There, with an introduction by Robert Finch (Special Commemorative Edition)*; Rachel Carson, *Silent Spring, The Sea Around Us (Special Edition with a new Introduction and Afterword)* and *The Sense of Wonder*; Edwin Way Teale (editor), *The Wilderness World of John Muir: A Selection from His Collected Work with an introduction and interpretive comments by Edwin Way Teale*.

Michael Faraday, *The Chemical History of a Candle* (I prefer the Cherokee edition to that of Dover because it contains an additional 33 pages, an informative Foreword and Biographical Introduction by Sir J. Arthur Thomson); Bernard Jaffe, *Crucibles: The Story of Chemistry from Ancient Alchemy to Nuclear Fission, Fourth Revised Edition*; Alan Holden and Phylis Singer, *Crystals and Crystal Growing* (one the 40 or so books in the Doubleday/Anchor Science Study Series); Primo Levi, *The Periodic Table*; Oliver Sacks, *Uncle Tungsten: Memories of a Chemical Boyhood*; Mme. Marie Sklodowska Curie, *Radioactive Substances*; Roald Hoffmann, *The Same and Not the Same*; Glen T. Seaborg and Evans G. Valens, *Elements of the Universe* (covers 103; at least 15 more discovered since this book was published); In addition to biographies of well-known early contributors to chem-



istry (see *Crucibles* above), take note of *Percy Lavon Julian: Pioneering Chemist*, by Darlene R. Stille; Cathy Cobb and Monty L. Fetterolf, *The Joy of Chemistry: The Amazing Science of Familiar Things*; Vicki Cobb, *Science Experiments You Can Eat (Kitchen Chemistry)* and *More Science Experiments You Can Eat*; Mariana Gosnell, *Ice: The Nature, the History, and the Uses of an Astonishing Substance*.

C. V. Boys, *Soap Bubbles and the Forces which Mould Them* (one of the Anchor Science Study Series); Michael Faraday, *The Forces of Matter*; George Gamow, *One, Two, Three...Infinity: Facts and Speculations of Science*; George Gamow and Russell Stannard, *The New World of Mr. Tompkins*; Martin Gardner, *The New Ambidextrous Universe: Symmetry and Asymmetry from Mirror Reflections to Superstrings, Third Revised Edition* and *Relativity Simply Explained*; K.C. Cole, *First You Build a Cloud and Other Reflections on Physics as a Way of Life*, also *The Universe and The Teacup: The Mathematics of Truth and Beauty*; John Tyndall, *Faraday as a Discoverer*; Jearl Walker, *The Flying Circus of Physics With Answers, Second Edition*; M. Minnaert, *Light and Colour in the Open Air*; Elizabeth A. Wood, *Science from Your Airplane Window, Second Revised Edition*; Lawrence M. Krauss, *Fear of Physics: A Guide for the Perplexed*; Walter Isaacson, *Einstein: His World and Universe*; Alain Hache, *The Physics of Hockey*; David Lind and Scott P. Sanders, *The Physics of Skiing*; Robert Kemp Adair, *The Physics of Baseball*; John Joseph Fontanella,



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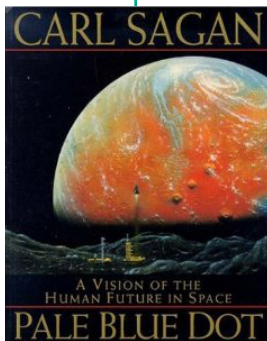
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The Physics of Basketball, Angelo Armenti Jr., *The Physics of Sports (AIP)*; Alan Lightman, *Einstein's Dreams*; Roger Highfield, *The Science of Harry Potter*; and Marjorie Van de Water, *Edison Experiments You Can Do* (based on the original laboratory notebooks of Thomas Alva Edison), and *More Edison...*

The Exploratorium Science Snackbook, Teacher/Student Created Versions of Exploratorium Exhibits; Dozens of demonstrations students can construct and “mess around with.”

D'Arcy Wentworth Thompson, *On Growth and Form*, Revised Edition; J. B. S. Haldane, “On Being the Right Size” from *Possible Worlds*, Reprinted in Volume Two of James R. Newman, *The World of Mathematics*; E. O. Wilson, *The Ants, The Insect Societies*, others; James Gray, *How Animals Move; The Faithful Eye of Robert Hook* (ESS booklet to accompany the elementary science unit, Small Things) excerpts from Robert Hooke's *Micrographia or Some Physiological Descriptions of Minute Bodies Made by Magnifying Glasses with Observations and Inquiries thereupon*; Richard Eakin, *Great Scientists Speak Again: William Harvey, William Beaumont, Gregor Mendel, Louis Pasteur, Charles Darwin, and Hans Spemann*; Charles Darwin, *Voyage of the Beagle; Charles Darwin, The Essential Darwin*, selected and arranged by Julian Huxley and James Fisher; Francis Darwin (ed.) *The Autobiography of Charles Darwin and Selected Letters*; Richard Dawkins, *The Blind Watchmaker*; Stephen Jay Gould, *Ever Since Darwin: Reflections in Natural History, Full House, Hen's Teeth, Horse's Toes, others*; Kenneth R. Miller, *Finding Darwin's God: A Scientist's Search for Common Ground Between God and Religion*; Sean B. Carroll, *Endless Forms Most Beautiful—The New Science of Evo Devo*; Edward J. Larson, *Summer for The Gods: The Scopes Trial and America's Continuing Debate over Science and Religion*, also *The Remarkable History of a Scientific Theory* (See, in particular, Ch.7 Genetics Enters the Picture and Ch.10 The New Synthesis); Catherine Baker and James B. Miller (Editor), *The Evolution Dialogues, AAAS.*

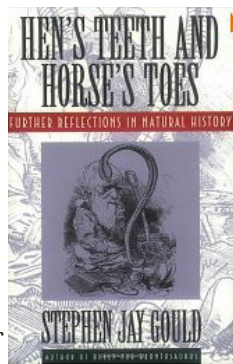


Carl Sagan, *Cosmos* (book as well as 13-episode PBS series), *Pale Blue Dot: A Vision of the Human Future in Space, The Demon Haunted World: Science as a Candle in the Dark*, and others; Philip and Phylis Morrison and the office of Charles and Ray Eames. *Powers of Ten: About the Relative Size of Things in the Universe* (the book as well as the classic film); Neil deGrasse Tyson, *My Favorite Universe* (Series of essays published in Natural History and his 12-lecture DVD course produced for The Teaching Company); Timothy Ferris, *The Whole Shebang* and *The Mind's Sky*; books by Patrick Moore, and those on naked-eye observation of the night sky as well as with binoculars; and later, with telescopes; others in the vast literature on Astronomy and Space Exploration.

Richard P. Feynman, *Surely You're Joking, Mr. Feynman! Adventures of a Curious Character, as told to Ralph Leighton, The Pleasure of Finding Things Out, The Meaning of it All: Thoughts of a Citizen-Scientist, The Character of Physical Law*, and James Gleick's *Genius: The Life and Science of Richard Feynman.*

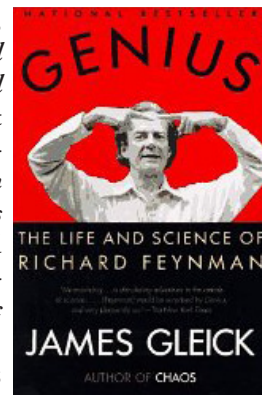
Books by and about George Washington Carver; *Gifted Hands: The Ben Carson Story, Think Big: Unleashing Your Potential for Excellence* by Ben Carson, M.D. and the very moving VHS from Carolina Biological, *Faithful Journey: The Life and Career of Dr. Ben Carson*; Eugene Winslow, *Black Americans in Science and Engineering: Contributors of Past and Present (Benjamin Banneker, Charles F. Drew, Percy Julian, Lewis Latimer and 25 others)*; Louis Haber, *Black Pioneers of Science and Invention* (14 stories, some overlapping those in Winslow).

Sinclair Lewis, *Arrowsmith*; Sherwin B. Nuland, *Doctors: The Biography of Medicine* (14 landmark contributors including Helen Taussig and the Blue-baby Operation at Johns Hopkins); John Galbraith Simmons, *Doctors and Discoveries: Lives That Created Today's Medicine* (stories of 86 notable contributors to medical



science); *Oliver Sacks, The Man Who Mistook His Wife for a Hat and Other Clinical Tales*, also Sacks book, *Awakenings.*

T.K. Derry and Trevor Williams, *A Short History of TECHNOLOGY from the Earliest Times to 1900* (782 pages!); Charles Singer et al, *A History of Technology (to 1954)*; David P. Billington, *The Tower and the Bridge: The New Art of Structural Engineering*, and with David P. Billington Jr, *Power, Speed, and Form: Engineers and the Making of the Twentieth Century* (*Eight principal, transformative engineering innovations*); Mario Salvadori, *Why Buildings Stand Up: The Strength of Architecture*, and *The Art of Construction: Projects and Principles for Beginning Engineers* (middle school and beyond); Scientific American compilation, *Automatic Control (Feedback: The Principle of Control and related topics)*; Michael Roridan and Lillian Hoddeson, *Crystal Fire: The Invention of the Transistor and The Birth of the Information Age*; John von Neuman, *The Computer and the Brain, Second Edition*; Norbert Wiener, *The Human Use of Human Beings: Cybernetics and Society*; Richard Rhodes, *The Making of the Atomic Bomb*; Robert H. Goddard, *Rockets*; Harold E. Edgerton, *Stopping Time: The Photographs of Harold E. Edgerton* (Classic images by the inventor of the modern electronic flash or strobe, an instrument engineered to employ intermittent light capable of flashing at one-millionth of a second.); and Steve Lohr (of the Times), *Digital Revolutionaries: The Men and Women Who Brought Computing to Life.*



Laura Chang (ed.), *The New York Times, Scientists at Work: Profiles of Today's Groundbreaking Scientists from the Pages of Science Times* (The 50 profiles include 12 women; Martha K. McClintock, JoAnn M. Burkholder, Meave Epps Leakey and nine others); Sharon Bertsch McGrayne, *Nobel Prize Women in Science: Their Lives, Struggles, and Momentous Discoveries, Second*

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Edition; Catherine Thimmesh and Melissa Sweet, *Girls Think of Everything: Stories of Ingenious Inventions by Women*. See additional section at end, on women in science.

Paul F. Brandwein and Hy Ruchlis, *Invitations to Investigate: An Introduction to Scientific Exploration*; Sir Charles Percy Snow, *The Search*; W.I.B. Beveridge, *The Art of Scientific Investigation*; Claude Bernard, *An Introduction to the Study of Experimental Medicine*; Philip Goldstein, *How to Do An Experiment*; James Bryant Conant, *Science and Common Sense*, a follow-up to his earlier book, *On Understanding Science*; Gregory N. Derry, *What Science Is and How it Works*; Royston M. Roberts, *Serendipity: Accidental Discoveries in Science*; Philip and Phylis Morrison, *The Ring of Truth: An Inquiry into How We Know What We Know* (the book as well as the 6-part PBS series); Martin Gardner, *Fads and Fallacies in the Name of Science*; also Carl Sagan's, *The Demon-Haunted World: Science As a Candle in the Dark* (particularly Chapter 12, "The Fine Art of Baloney Detection," including a "baloney detection kit," starting on page 210.)

Sheila Tobias, *Overcoming Math Anxiety, Revised and Expanded* (Chapters 5 through 7 are for anyone whether they have math anxiety or not.); Darrell Huff, *How to Lie With Statistics* (An important little book for everyone; It has been through more than 50 printings since it was first published.); Hugh Gray Lieber and Lillian R. Lieber, *The Education of T. C. MITS*; Warren Weaver, *Lady Luck: The Theory of Probability* (one of the 40+ books in the PSSC/ Anchor Science Study Series); Edwin Abbott Abbott, *Flatland, A Romance in Many Dimensions*; K. C. Cole, *The Universe and the Teacup: The Mathematics of Truth and Beauty*; all the books by John Allen Paulos, Theoni Pappas, Marilyn Burns, Harold R. Jacobs, Martin Gardner, others.

Books and Internet articles by and about women in science. Here are a few: **Henrietta**

Swan Leavitt (Harvard astronomer); Lynn Margulis (biologist); Anne Roe (clinical psychologist, but she is on this list for a very special reason); Cecilia Payne-Gaposhkin (Harvard astronomer and astrophysicist); Margaret Mead (anthropologist); Lise Meitner (Austrian/German physicist); Ruth Benedict (anthropologist); Jane Goodall (British primatologist, ethologist, and anthropologist); Eugenie C. Scott (physical anthropologist and prominent advocate in advancing public understanding of evolution); Bonnie Bassler (Princeton microbiologist); Emily Warren Roebling ("quasi-civil engineer," among the first women leaders in management of technology); Hedy Lamarr (engineer); Erna Schneider Hoover (engineer); Judith Arlene Resnik (electrical engineer and NASA astronaut); Constance Tipper (British metallurgist and crystallographer); Ada Lovelace ("first computer programmer"); Elsi MacGill (Canadian aeronautical engineer); and those mentioned in the foregoing pages. There are many more women in science and engineering who could be included here, and still more that I don't know about—but not nearly as many as there should be, particularly in engineering.

There are a number of fields not touched upon that I would like to have included but have run out of time: the exciting fields of forensics, oceanography, cellular biology including The Genome Project and beyond; bioethics, geology, including mineralogy and seismology; meteorology, space exploration; and natural history. Also, icons of science-fiction, and in some cases non-fiction as well, such as Arthur C. Clarke, Isaac Asimov, Ray Bradbury, Andre Norton (a pseudonym for a woman writer), Robert Heinlein and Michael Crichton. This is a work in progress.

No, I have not read every book listed and feel it unlikely that any reader has. In the words of Robert Browning, "Ah, but a man's reach should exceed his grasp, Or what's a

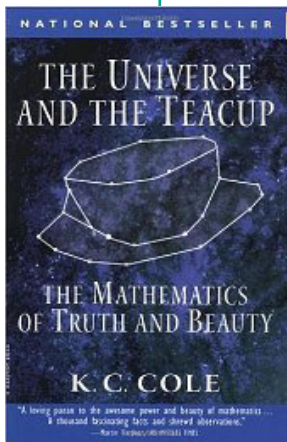
heaven for?" Many people, over the years, have contributed to this list or have validated some of my favorites. After a shorter version, in one of my president's messages (2004-2005), I received a number of e-mails suggesting authors and books that were totally unfamiliar. I looked into these, agreed that they should be included, and they are here.

The compilation is extensive not only because I've been at it for a while but, above all, so that there will be something here for as many of your students as possible. You just never know what is going to light a fire, and whether there could be flames that last a lifetime.

Regarding the Internet, I am almost certain that it would be difficult to generate this list from scratch since opinion and judgment are involved, as well as other factors. However, having this compilation, the Internet can be of immense value since everything here can be found somewhere on the Web, and most if not all the books are available through Amazon.com. Also, I have not checked this out, but many if not most can be accessed through Kindle (480,000 titles) or Nook by Barnes and Noble (over a million titles). I

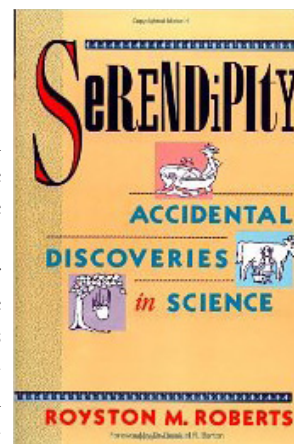
need to delve into this more since it is surely the wave of the future. And then, of course, there is the library.

Suggestions, comments, and questions are always welcome. Write to me at mbat-off@aol.com

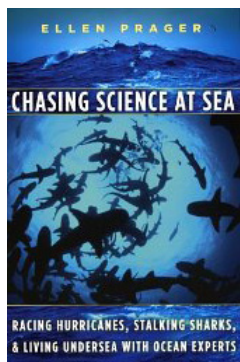


ADDENDA

The following additions are a result of several people reading the copy and making suggestions which I looked into. There are also several books which I meant to include but slipped through the cracks; and a few which I rediscovered.



Graphic Nonfiction for Middle Schoolers: **Jim Ottaviani**, *Bone Sharps, Cowboys, and Thunder Lizards*; also by Ottaviani, *Dignifying Science: Stories about Women Scientists*. Download extensive notes and an impressive list of annotated references; and a Study Guide for teachers. This is the second in a series of books done in comics form. Ottaviani has a background in science and engineering; Jay Hosler, *Clan Apis*. Like Ottaviani, Hosler is an award-winning scientist-cartoonist, a biologist whose specialty is entomology. Also, Marty Rhodes Figley, *The Schoolchildren's Blizzard*; Katherine Krohn, *The 1918 Flu Pandemic*; Rob Shone, *Corpses and Skeletons: The Science of Forensic Anthropology*; and Capstone's Inventions and Discoveries Series, including Michael O'Hearn's *Jake Burton Carpenter and the Snowboard*; Donald B. Lemke, *Steve Jobs, Steve Wozniak and the Personal Computer*; others in this series. See <http://www.schoollibraryjournal.com/article/CA6610512.html>

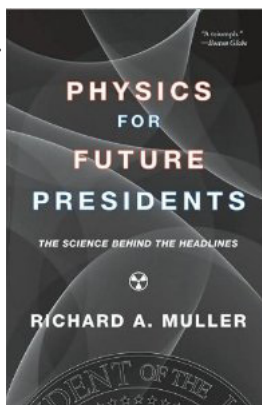


Ellen J. Prager and Sylvia A. Earle, *The Oceans*; Ellen J. Prager, *Chasing Science at Sea: Racing Hurricanes, Stalking Sharks, and Living Undersea with Ocean Experts*; Robert Kunzig, *Mapping the Deep: the Extraordinary Story of Ocean Science*; Robert D. Ballard and Will Hively, *The Eternal Darkness: A Personal History of Deep Sea Exploration*; Claire Nouvian, *The Deep: the Extraordinary Creatures of the Abyss*; Roger C. Steene, *Oceanic Wilderness*; Deborah Cramer, *Smithsonian Ocean: Our Water, Our World*; and Robert Dinwiddie et al *Ocean* (American Museum of Natural History.)

Elizabeth K. Cooper, *Science in Your Own Backyard*; Richard Headstrom, *Adventures With A Hand Lens*; Alan Dale, *Observations and Experiments in Natural History*; and Helen Ross Russell, *Ten-Minute Field Trips—A Teacher's Guide to Using the School Grounds for Environmental Studies*, Second Edition.

The following book of delightful essays by the remarkable Philip Morrison, *Nothing is Too Wonderful to Be True*—should have been included with his other two books (with Phylis Morrison): *Powers of Ten* and *The Ring of Truth*.

Stephen Hawking, *A Brief History of Time*, Updated and Expanded Tenth Anniversary Edition; and in sharp contrast, is the easy to understand conceptual (non-intimidating mathematical) *Physics for Future Presidents: The Science Behind the Headlines* by Richard A. Muller. An important book for any informed citizen, even if you don't have any intention of running for president! A fascinating, lively, and nontechnical primer. The book is based on professor Muller's famous and very popular course for non-science students at UC Berkeley. Go to <http://press.princeton.edu/video/muller> ☼



“Bioethics: Approaches and Methods for Secondary Education” University of Pennsylvania Center for Bioethics (June 24 & 25)

Please join us for two days of conversation and collaboration as we explore ways to more effectively integrate the cases and methods of bioethics within secondary education. Center faculty and project staff will facilitate sessions on the conceptual foundations of bioethics, bioethics and critical thinking and cases in neuroethics. Lesson plans and materials will be provided.

This workshop is offered by The University of Pennsylvania Center for Bioethics with the generous support of The Dana Foundation. PA-Act 48 and other state specific continuing education credits will be offered. The registration fee is \$40. Please contact us to register and for more information by visiting: <http://www.highschoolbioethics.org/>

Liberty Science Center Telebrands (Deadline 6/30)

Do you know any student inventors? Do you know kids that like to create things? Do you know students that may have dreamed about having their ideas turned into real consumer products? If so, please tell them about this exciting opportunity !

[Liberty Science Center/TeleBrands Student Inventors Day November 10, 2010](#)

Each entry must be a consumer product with carefully planned, real life research. Each invention must: solve a common, everyday problem, be “green” (good for the environment), reach a mass “consumer” audience, and sell for \$9.99 - \$19.99.

Participation Requirements: Teacher supervision -Students in grades 4-8 -Individual students or student groups (Max 5 participants) **One entry form submission per school - by June 30**

Important Dates and Deadlines:

Teachers submit easy entry form by June 30
Finalists will be randomly selected and notified by July 26
Finalists must RSVP by August 9 to confirm participation
Proposals to be submitted by September 30
Finalists will present at Liberty Science Center/TeleBrands Student Inventors Day on November 10.

[For all the details click here!](#)

Contact Mary McDonald - mmcdonald@lsc.org , or 201.253.1310

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Enjoy the summer and don't forget to register for the NJ Science Convention at www.njscienceconvention.org

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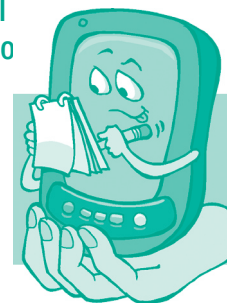
CALENDAR OF EVENTS

10/12-13

TUESDAY-WEDNESDAY NEW JERSEY SCIENCE CONVENTION - The 34th annual convention will be held at the Garden State Exhibit Center, DoubleTree Hotel & Holiday Inn, Somerset, NJ. The convention is co-sponsored by New Jersey Science Teachers Association and New Jersey Science Education Leadership Association. For more information and to register, go to <http://www.njsc-online.com/>

DIGITAL BOOKS THAT POP!

What will they think of next? ZooBurst (<http://alpha.zooburst.com/>) is a digital pop up book. You can use your photos of their clip art and change the rotation, size and placement of the picture on the page. You then add captions to the photos as well as a story line on the bottom of the page. You can modify the background, the pop up speed and angle.



While still in beta testing, they are taking applications for an account. (You do need a valid email address). There are some limitations- your photos cannot be too large. Visit my blog at www.tinyurl.com/bsdblog and search Zooburst to view some samples.