



Kansas Association
of
Biology Teachers
Newsletter

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are needed to see this picture.

Volume 48 Number 1 – March 2007

Events Calendar for biology teachers, biologists & naturalists in Kansas

23-24 Feb 2007	Kansas Chapter-The Wildlife Society, Pittsburg State University, Pittsburg KS
12-14 Mar 2007	Kansas Dam Safety Conference, Holidome, Topeka KS
19-23 Mar 2007	Spring Break for Kansas Regents Schools
12-13 April 2007	Annual meeting, Geological Society of America-Central sections, U. of KS, Lawrence
13-14 April 2007	Kansas Academy of Science annual meeting, Holiday Inn, Salina KS
20-22 April 2007	KS Assn. of Teachers of Science-KAMP, Rock Springs 4-H Ranch, Junct. City KS
21 April 2007	Kansas[Central States] Entomological Soc. annual meeting, ESU, Emporia KS
27-29 April 2007	Wings-n-Wetlands festival, Great Bend KS
27-29 April 2007	Kansas Herpetological Society spring field trip, Arkalon Park, Seward Co. KS
3-6 May 2007	2nd. Triennial International Mosasaur Meeting, Sternberg Museum, Hays KS
4-6 May 2007	Kansas Ornithological Society spring field trip meeting, Brown Co. KS
12 May 2007	Barber Co. Wildflower tour, Medicine Lodge KS
12 May 2007	KS Native Plant Society spring foray, Ft. Leavenworth woods, Leavenworth KS
19 May 2007	Comanche Co. Red Hills nature tours, Coldwater KS
2 June 2007	Kansas Assn. of Biology Teachers spring field trip meeting, Roaring River MO
16 June 2007	Flint Hills Symphony, Tallgrass Prairie of Wabaunsee County, KS
15 Sept 2007	Kansas Academy of Science fall field trip
21-23 Sept 2007	Kansas Naive Plant Society annual meeting
22 Sept 2007	KS Assn. of Bio. Teachers ann. meeting, Kill Creek Park or NABT regional, JO Co. KS
29-30 Sept 2007	Kansas Ornithological Society annual meeting, KSU, Manhattan KS
12-13 Oct 2007	Central Plains Society of Mammalogists annual meeting, Missouri St. U., Springfield
2-4 Nov 2007	Kansas Herpetological Society annual meeting, Topeka KS
6-10 Nov 2007	Natl. Assn. for Interpretation annual conference, Wichita KS
28 Nov-1 Dec 2007	Natl. Assn. of Biology Teachers annual convention, Atlanta GA

For explanation and/or further information, please contact Stan Roth <sdroth@ku.edu>. Also contact S.R. if you have other calendar events of interest to KS biology teachers, naturalists & biologists.

Message from the president

“This could be the most important message of your Life. You could be a million dollar winner.” Newspapers, pop-ups, and e-mails make promises that few people pay attention to but those few people keep the message senders in business. The business of biology education requires a few talented teachers to achieve the goal of scientific literacy for Kansas and the United States. I hope that this message can be relevant to a broad range of individuals that embrace the common goal of scientific literacy. I hope to speak to the veteran KABT member that has been a force in the classroom and community; to the early educator that is beginning to make their mark; to the pre-service educator; and to all University and local administrators that embrace biology education as essential to scientific literacy.

KABT as an organization is at a crossroad. We will evolve as an organization to survive in the 21st Century environment or face extinction as dinosaurs of biology classroom. As newly elected President I feel like the beginning teacher facing their first day with students. High on expectations, low on reality, and lacking the tools to accomplish even the simplest of goals. None the less, my idealistic nature sees hope for the future and the hope that I can make a difference. I am proposing a gathering of ideas and talents that will make membership in KABT a must have resource for success in the classroom. As an organization we can not be content to lead those that are already on the same path but seek out those that are not members of KABT. We must get out the message that KABT is an organization that is read to support all teachers of biology at all levels and in all ways.

Key to this goal is the way in which we as an association communicate with members , prospective members and the public. Communication goals should be clearly defined to provide a value for membership and those in the community that support the goal of scientific literacy. We have many tools that are currently available and need only to be sharpened to a razor's edge for maximum effect. The KABT web site is available for listing calendar events, lesson ideas, and contact information. What else can this site be used for? Blogs, video, pod casts, picture albums, are currently hot commodities in other venues. The key is flexibility to become what the membership desires.

Our newsletter has long been a staple in the association's attempt to communicate yearly activities. What improvements could be made in order to reach more members? Is communication between regional representatives and members better served through mass email lists? Could this become an effective way to provide value for a KABT membership?

I wish that all readers of this message could be million dollar winners. I hope that every teacher can someday feel as rich as I did when I received the thank you note from a former student. It acknowledged the important role of her high school teachers and courses that prepared her for college. She expressed that it was upon her high school experiences that she began a journey which is now entering a UC Berkeley doctoral program.

Best Wishes,
Randy Dix ,KABT President



Randy Dix presented a plaque to Todd Carter for his service to KABT the past two years. Todd has recently been elected as president-elect for NABT. Congratulations to Randy and Todd!

Paula Donham is the 2006 OBTA Recipient for Kansas

Every year, the National Association of Biology Teachers (NABT) selects one outstanding biology educator in each of the 50 United States to receive its Outstanding Biology Teacher Award. This year the outstanding biology teacher in the state of Kansas is Ms. Paula Donham from Olathe East High School.

Ms. Donham had originally planned on teaching as her career. However, while in college decided against it because of the excess in teachers at that time. In 1977 Paula Donham graduated from the University of Missouri with a degree in Biology and became a successful business woman. Her interest in teaching was revived when "I saw the tremendous impact good teachers were having on my daughters". In 1993 Paula made a career change to education and started teaching science in Frontier Trail Junior High School. She went back to school and in 1996 received her Masters in Education from the University of Kansas. In 1998 she started teaching Biology at Olathe East High School. She currently is Olathe East's Science Department Chair and still teaches two classes of College Biology and one class of Advanced Placement Biology. Paula Donham has served science education for the entire State of Kansas by volunteering as Treasure for the Kansas Association of Biology Teachers. She is also a member of the Kansas Association of Teachers of Science, and the National Association of Biology Teachers.

Mrs. Donham feels that "biology offers a unique opportunity to ignite students' interest because there are so many marvelous, interesting, beautiful, and curious things one can see and understand in the realm of biology." Mrs. Donham's teaching philosophy revolves around hands on learning experiences and tries to get students "involved physically with what they're learning". Some of the inquiry labs that Paula has her students perform early in the year involve respiration, fermentation, photosynthesis, and enzymes. These inquiry labs not only expanded the student's understanding of important biological processes, they also reinforce the Scientific Process itself and help students hone their problem solving skills. Later in the year Mrs. Donham has her biology students focus on biotechnology. They perform biotech labs such as transforming bacteria, extracting DNA using polymerase chain reactions, and electrophoresis of both DNA and proteins. The relevancy of these labs does not escape her students since they see the same technology being used on the "CSI" television programs. Ms. Donham confirms this by saying "With the current deluge on TV of the use of these biotechnologies, there is no difficulty getting students

excited about their labs." One student states that Ms. Donham's instruction "tied complex biological processes to real life occurrences that sparked classroom conversation and furthered the depth of understanding among her students".

Paula Donham's teaching philosophy also is concerned with the student as a whole. She places great importance on helping students discover their talents, stretching their abilities, and achieving their personal best. She states that "a student's self esteem will build as they accomplish challenging tasks and develop new understandings about the world around them so I strive to create an environment that challenges them but gives them support in and out of class to meet those challenges." Paula's District Science Coordinator agrees that Paula's teaching brings "rigor, relevance, and relationships to her students to yield powerful biology learning". She goes on to say that Paula's relationship with her students demands success, but also provides support for their success.

One parent wrote how Mrs. Donham's teaching changed her child's life. She stated that her daughter had never particularly found science interesting until she enter Paula Donham's class. She went on to say: "What a life-changing experience that turned out to be! My daughter began coming home talking about science for the first time ever. Mrs. Donham awakened an interest in her that surprised both her and us." This parent continued with what might be Paula's strongest teaching characteristic: "... it was obvious that Mrs. Donham loves biology and even more, she loves making a difference in kids' lives."

For her expertise in biology, her enthusiasm in the classroom, and her devotion to both her students and the entire biological education community, Ms. Paula Donham was selected as the 2006 Outstanding Biology Teacher Award recipient for the State of Kansas.

KABT Website

Visit the newly redesigned and organized website at kabt.org. After registering contribute to the site by posting links, articles and labs. Brad Williamson will help with website questions. Thanks again Brad for "mastering" this site.

2100 Poyntz Ave.
Manhattan, Kansas 66502

If you have pictures of biological interest from your classroom or conferences, send to editor at pwakeman@mail.tong464.k12.ks.us

OBTA Nominations

Dear Colleagues,

I am writing to you on behalf of the National Association of Biology Teachers. As the director for the State of Kansas, it is my hope that you will have a worthy candidate for the Outstanding Biology Teacher Award. If you know of a colleague who has been teaching for at least three years and fits many of the characteristics listed below, you should consider nominating them.

Good teaching always requires a lot of hard work. Teaching science skillfully requires an even greater amount of time and effort. Especially now when science seems to be under attack, good science teaching in Kansas needs recognition! I realize that the reason most teachers stay in the classroom is because they love teaching, they love their students, they love their subject, and they believe in the power of education. And while its obvious that no one enters education for the money or the recognition, isn't it gratifying to know that someone recognizes your efforts. This is especially true if that someone is a fellow biologist.

Biology is special and it takes special people to teach it. Won't you take ten minutes to nominate a colleague. Even if the nominee does not have the time to fill out the forms, at least they would know that you felt they were a worthy candidate. That recognition alone would be worth your ten minutes.

Please send the nomination letter to:

Patrick Lamb
OBTA State Director
Manhattan High School

Workshop Opportunities

1) Dynamic Gene Workshops. Cold Spring Harbor workshops:
http://www.dnalc.org/ddnalc/teacher_training/
Several 1.5 day workshops including March 27-28, St. Louis Science Center, Missouri (in conjunction with NSTA '07)... for High School and College Educators

2) Collaborative Research: The Geneticist-Educator Network of Alliances (GENA) Project,
<http://www.nsf.gov/awardsearch/showAward.do?AwardNumber=0634175> and
<http://gena.mspnet.org/index.cfm/home>

3)Greenwood Genetics Center,
<http://www.ggc.org/education.htm>:
Summer Courses in Human Genetics for Science Teachers
1. Biology 610 - Developmental Genetics: A Journey From Conception Through Adulthood (June 18-22, 2007).
2. Biology 612: Survey Course in Human Genetics (June 20-24, 2005).
3. Biology 614 - Contemporary Topics in Genetics - A Hands-On Approach (June 19-23, 2006)

4) Eccles Institute, University of Utah has teaching materials and a teacher e-mail list, <http://learn.genetics.utah.edu/>, and biotechniques virtual labs: The Biotechniques Virtual Laboratory, <http://learn.genetics.utah.edu/units/biotech/index.cfm>

Debra Collins, M.S. CGC
Genetic Counselor

OUTSTANDING BIOLOGY TEACHER AWARD

SPONSORED BY PRENTICE HALL

Each year, the National Association of Biology Teachers (NABT), through its *Outstanding Biology Teacher Awards* (OBTA), attempts to identify an excellent biology instructor in each of the 50 U.S. states; Canada; Washington, D.C.; Puerto Rico, and overseas territories. Nominations of worthy candidates by NABT members and friends help us to recognize those individuals whose outstanding work in the classroom qualifies them for this award.

Prentice Hall, the OBTA program sponsor, gives each awardee a pair of precision binoculars. The recipients also receive a microscope from Leica Microsystems, Inc., and a Video Flex Camera System from Ken-A-Vision. Award winners and their schools also receive certificates, as well as public and professional recognition. In Kansas we also have an added award sponsored by McGraw/Hill-Glencoe of \$750 towards the recipient's national convention expenses. Recipients receive a year's complimentary membership in NABT and NABT honors Outstanding Biology Teacher Award recipients at a special ceremony in conjunction with its national convention.

Who is Eligible? ... Current biology/life science instructors (grades 7-12) with at least three years public, private, or parochial school teaching experience. A major portion of the nominee's career must have been devoted to the teaching of biology/life science. NABT membership is not a requirement. Unsuccessful candidates may be renominated. OBTA winners are ineligible for 10 years after selection.

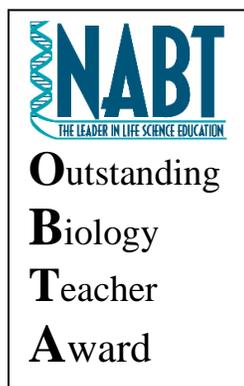
What is the Process? ... Candidates will complete a form summarizing their professional experience, academic background, and education philosophy and provide four recommendations from colleagues familiar with their teaching effectiveness. Classroom observations and/or videotapes are important steps in the evaluation process.

Who Can Make Nominations? ... Colleagues, administrators, students, the teacher/candidates themselves, or anyone competent to judge the candidate's teaching effectiveness.

What Are the Criteria? ... **Teaching Ability and experience, cooperativeness in the school and community, inventiveness, initiative and student-teacher relationships.**

How Do I participate? ... Fill out the nomination form below or request a form from your OBTA Director or the NABT office. The general deadline for nominations is **March 1, 2007**, but this date may vary in some jurisdictions. Check with your OBTA Director or call NABT at (703) 264-9696/(800) 406-0775 for information.

Outstanding Biology Teacher Award Nomination Form



Name of Candidate: _____

Candidate's School: _____

School Address: _____

School Phone: _____ E-mail: _____

Your Signature: _____

Invitation to Origins Symposium

Dear Colleague:

We would like to invite you to attend a two-day symposium entitled *RNA and the Origins of Life*, to be held in Ackert Hall, home of the Division of Biology at Kansas State University on Friday and Saturday, April 27-28, 2007. This symposium will feature accessible talks by four outstanding scientists in this field, as shown in the enclosed poster, or at our web-site <http://www.phys.ksu.edu/origins/Symposium.htm>.

Studies on origins of life have recently met three major breakthroughs that transformed speculative studies into a solid science. First, since its discovery in early 1980s, studies on RNA-based machines including ribozymes and riboswitches have outlined ancient biochemical reactions, or the RNA world, which might have occurred prior to the present form of life utilizing DNA-based information transmission and protein-based enzymatic activities. The recent discovery that the ribosome is a ribozyme has enriched our view of the RNA world. Second, genome sequence information from diverse organisms on earth has allowed us to deduce a set of genes, which are believed to have been present in the last common ancestor. Strikingly, these genes do not include membrane lipid synthesis genes and indeed, the membrane lipid composition of Archaeobacteria (Archaea) is totally different from that of the other two domains of life, Eubacteria (Bacteria) or us, Eukaryotes (Eukarya). Does it mean that the last common ancestor was not bound by lipid membranes? If so, what did the first cell look like? Third, the discovery of an independent ecosystem around the alkaline hydrothermal vents on the deep ocean floor

The symposium is being sponsored by the K-State Division of Biology¹ and the Kansas State Center for Understanding of Origins². If you have any question about the symposium or your travel, please contact us or our secretary, Ms. Nidhi Mungali (nidhim@ksu.edu, 785-532-6234).

We hope that you will consider attending what is sure to be a fascinating springtime event in Manhattan, Kansas.

With best regards,

Katsura Asano
Symposium Coordinator
Associate Professor of Biology
kasano@ksu.edu

Tim Bolton
Director, KSU-CUO
Professor of Physics
tbolton@ksu.edu

¹ The Division of Biology is a major administrative unit in the K-State College of Arts and Sciences. The Division is responsible for all fundamental biology at K-State, and includes a diversity of research interests. In addition to individual research programs, we have strong collaborative research programs. The Division offers undergraduate degrees in biology, microbiology, and fisheries and wildlife biology, as well as, Masters and Ph.D. degrees in biology and the Ph.D. degree in microbiology. Additional details about the Division are available at <http://www.ksu.edu/biology/>.

² The Center for the Understanding of Origins is an interdisciplinary Center at Kansas State University established in the year 2004. The center aims to foster bold and scholarly interdisciplinary research addressing issues of origins, especially the origin of the physical Universe, of the Earth, of Life, of intelligence, and of language. Addition details about the Center are available at <http://www.phys.ksu.edu/origins/>.

Teacher Shortage Due to Low Pay, Focus on Testing

Wichita Eagle February 1, 2007 page 7A

The most critical issue facing the new Kansas State Board of Education is not the science standards or sex education opt-in, but the dramatic teacher shortage.

While the shortfall has previously been in special education and science, schools are now seeing a shortage in math, English and other areas. Rural school districts are finding no applicants to hire.

My one biology student teacher who graduated this past December had five positions to apply for, starting January 2! My few student teachers for this spring are already being contacted by school districts before they begin practice teaching!

Science teacher production has dropped from one-half to one-third of annual production at schools across the state. In 1999 there were 235 new biology teacher endorsements; in 2004, there were 83! In the same five-year period, new licences for Kansas chemistry teachers fell from 126 to 61; physics teachers from 115 to 42 and earth science teachers from 62 to 30.

Meanwhile, the veteran teachers who have been staffing Kansas science classrooms are in the midst of retiring.

More retirees and fewer recruits mean a dramatic shortage of science teachers. Unless something changes, current science teacher production will not be enough to fill half of our science teacher positions in five years.

Such a crisis arouses a call for solutions that can be classified as bad, ineffective and good.

Bad solutions include proposals to allow current science teachers to merely test into other science endorsements and any teacher to add another endorsement with half the coursework and a test. These "solutions" eliminate the shortage on paper but staff our schools with untrained teachers.

Ineffective solutions call for future-teacher recruiting programs or awarding a masters degree for bachelors level teacher training, the later system equivalent to having Kansans pay premium prices for regular gasoline.

Good solutions will have to address the two major causes of a shortage of secondary teachers: poor pay and the de-professionalization of teaching.

School debt has become a major barrier to entering teaching. According to *Education Week*: "more than 23 percent of students graduating from four-year public universities and 38 percent of those graduating from private colleges have too much student-loan debt to live on the average salary for a starting teacher."

And Kansas teacher salaries have plummeted dramatically when adjusted for inflation. Data from a national survey show Kansas ranked 49th out of 50 states, averaging an 11 percent loss of teacher pay over the previous ten years before the court-mandated increase in Kansas school funding.

Substantially raising teacher salaries will help slow the decline in science teachers, but it will not be enough to put highly qualified science teachers back into every Kansas science classroom.

The main reason science teachers give for leaving the profession is also the foremost reason my young college students provide for switching out of a teaching major: teachers are no longer being treated as professionals. Teachers are now being treated as assembly-line workers, preparing students solely for tests.

Until teachers are given back their professional responsibility, the shortage of professionals in the Kansas classroom will continue to grow.

John Richard Schrock
of Emporia trains biology teachers.

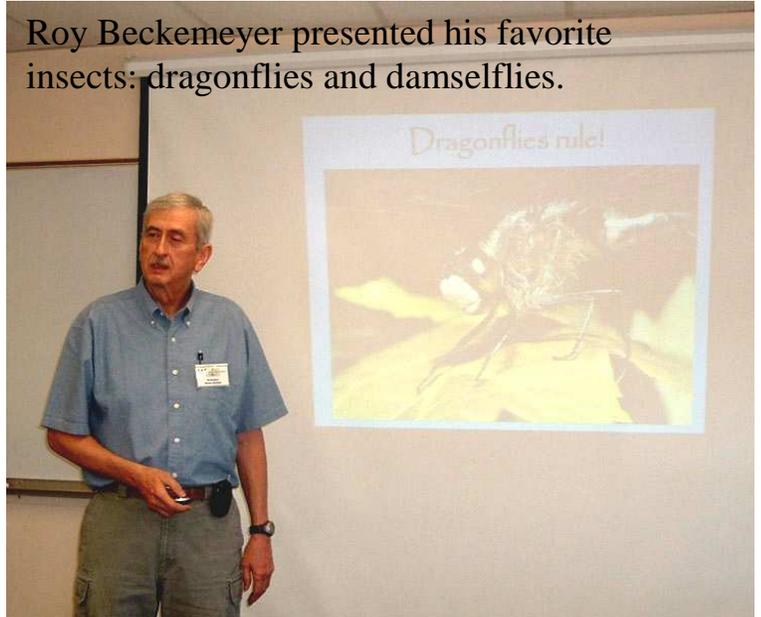
Check mailing label. If highlighted you membership has expired. When you renew, consider submitting articles, pictures, labs, and/or editorials to the newsletter. Send as attachments to pwakeman@mail.tong464.k12.ks.us.

KABT Fall Conference

Dr. Patrick Ross introduced a variety of exercises about the surface area concept.



Roy Beckemeyer presented his favorite insects: dragonflies and damselflies.



NABT Conference – Albuquerque



Ye editor with two Outstanding Biology Teachers Award recipients: Paula Donham – 2006 and Sandy Collins – 2005.



Randy Dix with the fly-fishing workshop.



This trout didn't have a chance with Randy in the stream

The Kansas Association of Biology Teachers Officers - Representatives - Board Members

President

Randy Dix
12115 S. Walnut St.
Olathe, KS 66061
(913) 782-2984
Olathe North High School
(913) 780-7140
rdixon@olatheschools.com

President-Elect

Vacant

Vice-President

Bill Welch
100 Maplewood
Mulvane, KS 67110
Mulvane High School
1900 N. Rock Road
Mulvane, KS 67110
(316) 777-1183
Bwelch@usd263.k12.ks.us

Past-President

Todd Carter
Box 346
Forgan, OK 73938
(580) 487-3547
Seward County Community
College
Box 1137 Liberal, KS
67905-1137
todd.carter@sccc.edu

Treasurer

Paula Donham
18261 W. 157th Terr.
Olathe, KS 66062
(913) 558-7470
Olathe East High School
(913) 780-7120
Pdonhamoe@olatheschools.com

Secretary and Newsletter Editor

Pat Wakeman
24549 Sandusky Rd.
Tonganoxie, KS 66086
(913) 845-3208
Tonganoxie High School
404 E. 24/40 Highway
Tonganoxie, KS 66086
(913) 845-2654
pwakeman@mail.tong464.k12.ks.us

Region 1 Representative

Brian Coon
228 Nth 7th Apt. 1
WaKeeney, KS 67672
(785) 743-2061
Trego Community HS
1200 Russell Ave
WaKeeney, KS 67672
bcoon@usd208.org

Region 2 Representative

Pat Lamb
3014 Sunnyside
Manhattan, KS 66502
(785) 776-1438
Manhattan High School
2100 Poyntz
Manhattan, KS 66502
(785) 587-2100 Ext. 802
Patl@manhattan.k12.ks.us

Region 3 Representative

Lisa Volland
lvolland@topeka.k12.ks.us

Region 4 Representative

Dettra Crawford
dcrawford@usd210.org

Region 5 Representative

Mark Neal
mneal@usd360.com

Region 6 Representative

Open

Representative At Large

Sandy Collins
2444 Wellman Rd
Lawrence, KS 66044
(785) 841-2375
West Junior High School
2700 Harvard
Lawrence, KS 66049
(785) 832-5500
scollins@usd497.org

Representative At Large

Josie Stiles
jstilesoe@olatheschools.com

Journal Editor

John Richard Schrock
1101 W. 18th Avenue
Emporia, KS 66801
(620) 342-3879
Emporia State University Dept. of
Biological Sciences
Box 4050
Emporia, KS 66801
(620) 341-5614
FAX (620) 341-5997
ksnaturl@emporia.edu

NABT Liason

Brad Williamson
Olathe, KS 66061
(913) 764-6036
Bwilliamson@comcast.net

KABT Historian

Stan Roth
532 Oklahoma St.
Lawrence, KS 66046
(785) 843-4764
sdroth@ku.edu

Counties In Region 1 Cheyenne, Decatur, Ellis, Gove, Graham, Logan, Norton, Osborne, Phillips, Rawlins, Rooks, Russell, Sheridan, Sherman, Smith, Thomas, Trego, Wallace

Counties, In Region 2 Chase, Clay, Cloud, Dickinson, Ellsworth, Geary, Jewell, Lincoln, Lyon, Marion, Marshall, McPherson, Mitchell, Morris, Ottawa, Pottawatomie, Republic, Rice, Riley, Saline, Shawnee, Wabaunsee, Washington

Counties In Region 3 Atchinson, Brown, Doniphan, Douglas, Franklin, Jackson, Jefferson, Johnson, Leavenworth, Miami, Nemaha, Osage, Wyandotte

Counties In Region 4 Barber, Barton, Clark, Comanche, Edwards, Finney, Ford, Grant, Gray, Greeley, Hamilton, Haskell, Hodgeman, Kearny, Kiowa, Lane, Meade, Morton, Ness, Pawnee, Pratt, Rush, Scott, Seward, Stafford, Stanton, Stevens

Counties In Region 5 Butler, Coffey, Cowley, Harper, Harvey, Kingman, Reno, Sedgwick, Sumner

Counties In Region 6 Allen, Anderson, Bourbon, Chautauqua, Cherokee, Crawford, Elk, Greenwood, Labette, Linn, Montgomery, Neosho, Wilson, Woodson

Your membership **expiration date** can be found on your mailing label. Starting immediately, all dues received before June 30th will be applied to the current year if you are past due. If your dues are current, they will apply for the extended year of your current due date. Dues received and postmarked between June 30th and September 30th will be applied to the next year of membership.

KABT Membership Application or Renewal Form—ONLY USE CURRENT NEWSLETTER FORM!

Name: _____

(Mr.-Mrs.-Ms.-Dr.-Miss) First Name Last Name

Mailing Address: _____

City: _____ County _____ State: _____ Zip: _____ - _____

School/Institution: _____

Position: _____

City: _____ State: __ Zip: _____ - _____

Phone: Work (____) _____ - _____ Home: (____) _____ - _____

FAX: (____) ____ - _____ Email Address: _____ @ _____

Enclosed Dues For KABT **\$15 / Year (\$5 Student)**—Life Membership Available For **\$300**

National Association of Biology Teacher Dues: \$65.00 / Year

Dues Payment For Next Year Must Be Received Between Dates Of June 1st to September 30th

Dues Received On Dates Preceding June 1st Or After September 30th Will Be Applied To Current Year

Make Check Payable To KABT - Tax ID #: 48-0945206

Send Dues & Information To:

Kansas Association of Biology Teachers

18261 W. 157th Terrace

Olathe, KS 66062