

Fall 2003

The Western Scholar

Editors

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The Western

SCHOLAR

THE SPIRIT OF SCHOLARSHIP AND RESEARCH AT WESTERN KENTUCKY UNIVERSITY



The Western Scholar brings you stories of “the spirit of scholarship and research at Western Kentucky University.” Stories of these diverse scholarly activities represent a broad definition of scholarship. In 1990, Ernest L. Boyer, then president of the Carnegie Foundation for the Advancement of Teaching, best broadened the scope of scholarly pursuits. He suggested that scholarly pursuits include (1) the scholarship of discovery through research, (2) the scholarship of integration, (3) the scholarship of application to consequential problems, and (4) the scholarship of teaching and attracting future scholars.

You will enjoy thinking about this broader definition of scholarship as you read the stories in this issue.

Exemplifying the scholarship of discovery are the historical discoveries — from Nigerian oral history, from manuscripts in Israel, and from Kentucky library holdings. From Potter College of Arts, Humanities and Social Sciences, Department of Modern Languages and Intercultural Studies professor Dr. Johnston Njoku has traveled to Nigeria to research slave trade routes and the transatlantic slave trade. He has gathered information through oral history in songs, proverbs, memory tales, and legends. Department of Philosophy and Religion professor Dr. Joseph Trafton works with the fragments of the 2,000-year-old Dead Sea Scrolls, discovering the appropriate texts for missing words and pages. He is contributing to knowledge of a time that produced Rabbinic Judaism and Christianity. Finally, Jonathan Jeffrey, from the Department of Library Special Collections, University Libraries, has documented research on local Kentucky history including the Shaker textile industry, Warren County postcards, and the histories of many Kentucky public libraries. All of these discoveries are providing historical information that would be lost without these researchers.

The work of Dr. Sam McFarland from the Department of Psychology in the College of Education and Behavioral Sciences illustrates the scholarship of integration. He has used psychology methodology to define and integrate the interdisciplinary field of human rights and caring behavior. He feels that these interdisciplinary studies are

educational and could help reduce the likelihood of restricting individuals’ rights.

The scholarship of application includes attention to the community problems of school competition and environmental development decisions. Drs. Mel Borland and Roy Howsen from the Department of Economics and Marketing in the Gordon Ford College of Business apply their interest in industrial education to the public school system, and have studied how public school students benefit from market competition. Drs. Kenneth Kuehn and Michael May from the Department of Geography and Geology in Ogden College of Science and Engineering have studied the prevalence of geological hazards — storm water drainage, sinkholes or abandoned landfills, karst terrain, climate, air quality, and earthquake risk in Kentucky — and provide consultation on community planning.

Finally, the last two feature stories in this issue illustrate how the scholarship of teaching and education can attract future scholars. Matthew Dettman from the Department of Engineering in Ogden College of Science and Engineering employs student design and construction of a concrete canoe as project-based learning to build teamwork, problem-solving, initiative, and engineering and competitive skills, which

help students become successful professionals. Dr. Darlene Applegate from the Department of Modern Languages and Intercultural Studies in the Potter College of Arts, Humanities and Social Sciences takes her students along on local archaeological work, excavating artifacts in Hidden River Cave, researching a prehistoric burial site of Native Americans, and doing research at an abandoned graveyard. Thus, students relate classroom teaching to practical research applications, and share the excitement of the field.

All in all, this issue of *The Western Scholar* illustrates a diversity of scholarship at Western Kentucky University. You will find that reading the stories will bring you closer to the scholarly activities and passions of the scholars.



PHOTO BY LADONNA HARMON

DR. GAY PERKINS
University Libraries Professor

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COVER PHOTO

Photo by Mr. Uwasomba, courtesy of the Ministry of Information, Culture and Tourism, Nigeria.



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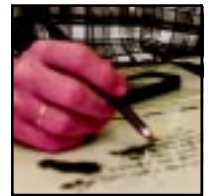
It doesn't matter to Dr. Darlene Applegate if it's digging up bones, fragments of glass, or spear points.

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Dr. Johnston Njoku's research team surveys and documents the Blue River in Nigeria where slaves were taken to the Atlantic Ocean.



A chief in Uzuakoli talks about the stones of disorientation, which were used to keep slaves from finding their way back home.

Tracing the Trade Routes of the Slaves

BY CAROL CUMMINGS

PHOTO BY DR. JOHNSTON NJOKU

DR. JOHNSTON A.K. NJOKU'S RESEARCH INTEREST IN TRACING THE SLAVE ROUTES IN THE NIGERIAN HINTERLAND CAME FROM A CERTAIN EPIPHANY AND DEEP REFLECTION UPON AFRICAN AMERICAN FOLKTALES IN KENTUCKY. WHILE FACILITATING PRESENTATIONS AT A NARRATIVE STAGE DURING THE KENTUCKY FOLKLIFE FESTIVAL IN 1997, NJOKU, AN ASSOCIATE PROFESSOR OF FOLK STUDIES AT WESTERN KENTUCKY UNIVERSITY, HEARD A FOLKTALE BY AFRICAN AMERICAN STORYTELLER NANA YA ABOUT "A LITTLE LIGHT ON THE WINDOW ACROSS A GLASSY SEA AT NIGHT."

Responding to Njoku's question, the storyteller agreed that this particular tale could have a remote connection to the Underground Railroad in Kentucky. "The cultural reasoning behind my question was that the frozen river might have allowed the escaping slaves to cross the Ohio River and to follow the light in the window on their way to freedom," Njoku wrote. "I thought of looking for other stories such as this that will lead to the material culture of the Underground Railroad."

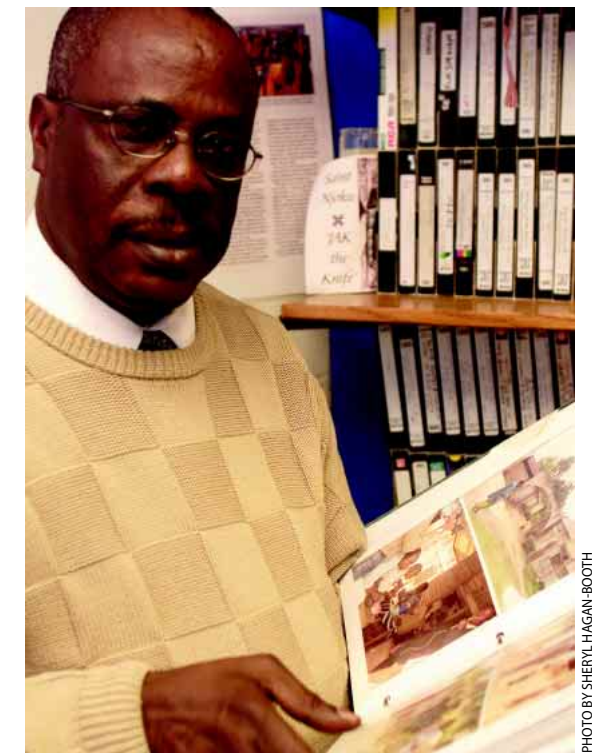
Njoku learned of the abundance of oral information of how local traders and escorts took enslaved Africans from their villages to slave markets and slave quarters in the interior, and from there to the dealers and traders in the coastal towns.

His deep reflection upon the African American traditional mechanism for escape in that folktale and other folksong examples triggered within him a curiosity about slave trade and escape routes in his native Nigeria, and opened the door of his memory to recall legends and places from his youth. Through his research, Njoku learned that written accounts of how enslaved Africans departed aboard ships from Goree in Senegal, Elimina in Ghana, Abomey in Benin, and Badagry, Calabar, and Bonny in Nigeria across the Atlantic Ocean to the Americas were rich and abundant. "The published histories of the transatlantic slave journeys to the Americas are in museums, public libraries, and archives in Africa, Brazil, Europe, and North America," Njoku wrote. "However, we do not find the accounts of the ways through which enslaved Africans were forced to travel from their villages to the coastal towns in Western Africa before they began the journeys through the Middle Passage to the New World."

During his fieldwork in Nigeria, Njoku learned of the abundance of oral information of how local traders and escorts took enslaved Africans from their villages to slave markets and slave quarters in the interior, and from there to the dealers and traders in the coastal towns. "The oral

information on hinterland slave journeys appears in songs, proverbs, memory tales, and legends," he said. "Africans have kept alive their collective memories, common experiences, and group knowledge of the transatlantic slave trade. There is also a body of historical narratives about things associated with transatlantic slave trade in the cultural landscape — trees, roads, footbridges, caves, streams or rivers, houses, and markets."

This research led him to the conclusion that, "Standing exclusively by itself, the written academic history of the slave journey that begins from the coast and passes through the Middle Passage to the Americas, though factually accurate, is an incomplete historical record." Njoku's premise was that one could use historical folklore to help to fill the gap that exists in our knowledge of the transatlantic slave trade, and broaden historical inquiry. His first research efforts have focused on Abia State, a state in the southern portion of Nigeria, bordered on its south by the Imo River. The purposes of his research were varied. First, his goal was to refine existing scholarly generaliza-



Dr. Johnston A.K. Njoku

PHOTO BY SHERYL HAGAN-BOOTH

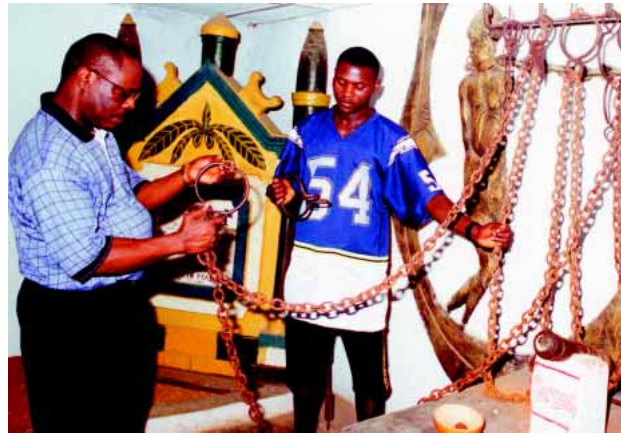


PHOTO BY EMEKA OKORO

Dr. Njoku looks at chains and other material objects from the slave trade in Badagry, Nigeria.



PHOTO BY DR. JOHNSTON NJOKU

Omenuko (a slave trader) kept his slaves in a cell house before he sold them on the market.

tions about orally communicated history and to record the many stories and legends through a written format. He would then present these oral traditions and folklore of the transatlantic slave, and establish a direct connection between the hinterland slave routes and major slave trading locations in the coast using the material culture of slave trade. He also recognized the high value of historical folklore of the transatlantic slave trade routes to tourism and rural economic development.

During Njoku's many visits to Nigeria, as soon as the local people learned he was researching the slave trade routes and relics of the transatlantic slave trade, they shared information with him about various locations, even taking him to view the ancient sites and inviting him to visit with their families. "I knew right from that time that many people were willing to share what they know about places that have become legends in their minds in regard to the transatlantic slave trade," he said. The stories they shared invariably struck a chord with Njoku's memories of the tales he had heard as a youth. One of these stories was the Ohafia local legend of Eke Kalu, who escaped from slaveholders in Arochukwu and returned to his village in Elu, Ohafia. Njoku had the opportunity to visit the fine home this Nigerian legend built after his escape and to talk with his children.

Njoku also visited the legendary Achi tree, whose surface roots measured 25 feet, and the site of one of the "stones of disorientation." When slaves were captured, they were tied to the root of this massive tree and before being taken away were seated on the stone as a way to deter them from running away from their masters. "They were like shrine objects," Njoku said of the stones. "I call them the stones of disorientation because local legends and historical narratives suggest that some buyers took their slaves to the stones and made them sit on the stones for a brief moment so that they [the slaves] would lose their senses of direction. Evidently, they believed that, once the slaves were placed on the stones, they would not find their way back to their homes." Two "blind houses" were also among the sites Njoku saw in Abia. "These houses were actually cells that one Aro slave merchant built in Bende, which was one of the most active slave markets in the nineteenth century," he said. "They served as a holding place for slaves ready to be sold."

According to Njoku, the slave raiders and recruiters were mainly warriors from a number of villages. "The warriors raided villages and, especially after some kind of intertribal wars, captured people," he said. "The warriors or raiders would line up the people that they captured just like prisoners of war and lead the captives to quarters of Aro slave holders and merchants. Sometimes, the same warriors or recruiters helped to escort slaves from Aro quarters to the many slave markets in the hinterland." One legend records that the Aro traders did most of their long distance traveling to markets close to the coastal towns at night or through forest trails during the day. Among the escorts were medicine men or

herbalists who provided treatments to slaves who fell sick. Njoku retraced these initial slave routes in the state and was collecting historical narratives of particular landmarks and relics of the slave trade when he learned that tourism was one of Abia State's priority areas of development.

"To make the research useful and relevant to Abia State's strategic plan, I contacted the Honorable Commissioner of Information, Culture, and Tourism to discuss the tourism potential of the slave routes projects," he said. State officials worked with him in his research efforts, granting Njoku additional credibility with the people of Abia State. "Abia State of Nigeria is endowed with rich natural tourism potentials capable of transforming the economic base of the state," he said. "The profiles of the tourist sites include historical and monumental archives, landscapes, beaches, rolling hills, caves, shrines, cultural heritage, and friendly and industrious people of the state. Some of these abundant tourist sites are yearning for development." One such potential tourist site is the city of Abiriba, a serene ancient town that has long held the status of a big city; hence it has been referred to as "Small London." The people of the this town, apart from being versatile traders, also engage in crafts like blacksmithing, animal skins crafts, and wooden crafts of all sorts.

Njoku's project continues to focus primarily on Abia State in Nigeria. Unique landmarks in Abia State include the Cave Temple Complex of

Chukwu Abiama (Kindhearted Supreme God) and the Iyi Eke cave in Arochukwu, the Cave Rendezvous and cave tunnels in Abuma Ututu, the Eke Oba Agbagwu market in Uquakoli, the Slave Cells in Bende, Hollow Tree Tower in Amamkamma, and the Blue River in Aumini.



PHOTO BY UOMA UGWU

Dr. Njoku and others cross the footbridge to the Iyi Eke cave on the slave routes in Arochukwu, Nigeria



PHOTO BY DR. JOHNSTON NJOKU

The Prime Minister of the Kingdom of Azumini retraces the slave routes.

Fragments of the Past

BY SHAWNTEL ENSMINGER

ALTHOUGH THE TABLOIDS WOULD HAVE US BELIEVE DIFFERENTLY, THE DEAD SEA SCROLLS DO NOT PREDICT ANYTHING ABOUT OSAMA BIN LADEN, MICHAEL JACKSON, OR THE POPE. THEY DO NOT SAY THAT THE WORLD WILL END TOMORROW AT QUARTER AFTER SIX. THEY DO NOT DISPROVE CHRISTIANITY, NOR DO THEY CHAMPION IT.

So what *do* the Dead Sea Scrolls say?

Ask Dr. Joseph Trafton of the Department of Philosophy and Religion. He has translated five of the Dead Sea Scrolls. “The Dead Sea Scrolls have received significant media attention recently,” observes Trafton. “Unfortunately, so much of what the public hears — that the Scrolls predict events happening in the world today, that they contain startling new revelations about Jesus, that there is a Roman Catholic conspiracy to conceal them — is utter nonsense.”

Between 1947 and 1956, Arab nomads and archaeologists discovered ancient manuscripts in eleven caves in Israel. Because these caves were on or near the northwest shore of the Dead Sea, the manuscripts became known as the Dead Sea Scrolls. The Scrolls have been dated from the last three centuries B.C. to the first half of the first century A.D., commonly called the Second Temple period in Judaism.

Renowned American archeologist W. F. Albright proclaimed the Dead Sea Scrolls to be “The most important manuscript discovery of modern times!” More than 800 manuscripts were exhumed from the caves. Some were written in Aramaic or Greek, but the majority were written in Hebrew. Old Testament texts account for more than 200 manuscripts, and these are 1,000 years older than any previously known Old Testament manuscript.

However, most of the documents that were discovered were previously unknown to scholars, demonstrating not only that the Jews of this period produced a large corpus of literature, but also that these authors were using writing styles previously unknown for this period. The Scrolls shed light on many formerly unknown aspects of Second Temple Judaism. Trafton notes, “The Scrolls put us in direct contact with an enormously turbulent period in Jewish history that gave birth to two enduring — and most important — movements: Rabbinic Judaism and Christianity.”

Scholars link the Scrolls to Qumran, an archaeological site that is literally a stone’s throw from Cave 4 where the vast majority of manuscripts were found. The Scrolls were collected and written by a distinct community that most likely lived at Qumran.

“Believing themselves to be the only truly faithful Jews, these people separated from the larger Jewish society about a hundred years before the birth of Jesus and went out to live in a barren wasteland,” Trafton explained. “They were waiting for the day when God would vindicate them and return them triumphantly to Jerusalem. But decades passed and that day never came. During the Jewish revolt of 66-70 A.D., the Romans destroyed the settlement. That’s when the Scrolls were hidden in the caves.”

Until recent years, translation of the Scrolls moved slowly. An initial team of seven translators began work on the Scrolls in the early 1950s. As the number of manuscripts discovered quickly rose, publications halted. In the late 1980s the team underwent the first of many expansions in order for manuscripts to be published more rapidly. Today there are scholars worldwide translating the Scrolls, and Trafton is distinctive among them. He is





PHOTO BY DR. JOSEPH TRAFTON

Ruins at Qumran

“Imagine a 1,000-piece jigsaw puzzle with 95 percent of the pieces thrown away and the box top missing. Now take the pieces from many more similarly mistreated puzzles, and mix all of them together. This is the situation that awaits the Dead Sea Scrolls scholar, who is expected not only to separate and identify all the different puzzles, but also to reconstruct the puzzle box tops!”

one of only a few scholars not employed by a private institution.

Trafton is writing for the Princeton Theological Seminary Dead Sea Scrolls Project, which combines the intellectual talents of 56 contributors from the United States, Israel, England, Germany, and Canada. The set is projected to consist of 13 volumes, six of which have been published. One volume comes out every other year in Germany and the United States simultaneously. Each volume contains entries on individual scrolls that include the Hebrew transcription of the manuscript, a translation from the Hebrew, and an extensive introduction including the document’s date, theology, relation to the Old and New Testaments, and its relation to other Jewish literature of the period.

Trafton’s entry on manuscript 4Q252 “Commentary on Genesis A” was published in *The Dead Sea Scrolls*:

Volume 6b: Pesharim, Other Commentaries, and Related Documents in 2002. Trafton calls “Commentary on Genesis A” a fascinating document. “The writer [of the commentary] collected a series of passages from the Old Testament book of “Genesis” and commented upon them. For example, he took the story of Noah and the flood and, ignoring everything related to the building of the ark and to the animals, focused his attention entirely on the passages that dealt with the dates of events in the story. His purpose was to show that the entire story covered one solar [364-day] year. Why? Because the ruling authorities in Jerusalem were using a lunar [354-day] calendar, and it was the community’s belief that God’s preferred calendar is the solar.”

The other four entries on documents assigned to Trafton are due to appear in a forthcoming volume of that series. These include a hymn from Cave 3, a hymn

from Cave 6, a prayer from Cave 6, and a prayer from Cave 11. “The document from Cave 11 is especially intriguing,” notes Trafton, “because it is closely related to materials from Cave 1 and Cave 4.”

Working with these texts is challenging because most are more than 2,000 years old. Over time the quality of the majority of the Scrolls has suffered greatly. Many of the manuscripts are discolored and are deteriorating much more rapidly since they have been removed from the desert caves where they had been since antiquity. Almost all the manuscripts are fragmentary, some with many pages missing, others missing letters and words, and some containing only a single letter or word.

“Imagine a 1,000-piece jigsaw puzzle with 95 percent of the pieces thrown away and the box top missing. Now take the pieces from many more similarly mistreated puzzles, and mix all of them together,” explains Trafton. “This is the situation that awaits the Dead Sea Scrolls scholar, who is expected not only to separate and identify all the different puzzles, but also to reconstruct the puzzle box tops!”

The translator’s job is to fill in the gaps and decipher the blackened parchment. Trafton has visited the Rockefeller Museum in Jerusalem in order to work directly with the fragile manuscripts assigned to him. He had photographs developed at different exposures revealing many previously illegible letters and allowing him to better distinguish the Hebrew.

“The manuscript of ‘Commentary on Genesis A’ has been ravaged by time,” according to Trafton. “It has shrunk considerably and is badly wrinkled and torn. The photographs are easier to read than the manuscript itself. On the other hand, the manuscripts of the other four documents — though only a few pieces remain of them — are quite legible. Sharp, black letters on a light brown background — it is hard to believe they are over 2,000 years old!”

Trafton, who joined Western’s faculty in 1977, first became interested in the Scrolls during his master’s work at Gordon-Conwell Theological Seminary. He pursued this interest further while earning his doctorate at Duke University. It was there that he worked under Dr. James Charlesworth, the editor of the Princeton Dead Sea Scrolls Project.

Trafton first taught a course at Western on the Dead Sea Scrolls in 1990 as a graduate seminar. It generated such demand among students that he has taught a similar course at the undergraduate level off and on ever since.

Recently the University added the Dead Sea Scrolls class to the catalog as a permanent course.

One extraordinary aspect of this class is the Fragments Project, an exercise Trafton designed. Students are given an envelope full of fragmentary, damaged manuscripts and work as a team trying to rebuild the manuscripts and decipher what each says. “The Fragments Project offers a unique, hands-on experience to examine the obstacles the original Scrolls team encountered,” according to senior religious studies major Michael Blanton. “Anyone interested in religious textual studies could benefit.”

Very few undergraduate religious studies programs are fortunate enough to have a class on the Scrolls. Such courses are typically found in graduate programs like those at Harvard, Yale, Duke, Princeton, and Notre Dame. “We have seen a dramatic increase in the number of religious studies majors at Western over the last few years,” observes Trafton. “Courses such as this one give



PHOTO BY DR. JOSEPH TRAFTON

View of Qumran from a cliff

them a competitive edge for graduate school.” In fact, one recent alumnus became interested in the subject and is currently doing doctoral work at Yale.

If you study the Dead Sea Scrolls, you won’t find references to contemporary society, but you will find valuable information about Judaism at the time of Jesus. None of the Scrolls suggests a day and time for the end of the world, but one Scroll does describe an apocalyptic war between the Sons of Light and the Sons of Darkness. They don’t mention Jesus, but they do mention a Messiah (or even Messiahs) that they expect to come. All in all, the Dead Sea Scrolls are full of headlines, just not the ones you see in the checkout line tabloids. Just ask Dr. Joseph Trafton and his students. They know.

HISTORY

in the Library



Lost River Cave, Bowling Green, Kentucky

PHOTO COURTESY OF KENTUCKY LIBRARY AND MUSEUM

BY BOB SKIPPER

WHEN JONATHAN JEFFREY BEGAN WORKING ON A DEGREE IN HISTORY, HE ENVISIONED BECOMING A HISTORY TEACHER. HOWEVER, AN ASSIGNMENT FOR A GRADUATE CLASS CAUSED HIM TO CHART A NEW COURSE THAT HAS ALLOWED HIM TO COMBINE HISTORY, RESEARCH, AND TEACHING AS SPECIAL COLLECTIONS LIBRARIAN AT WESTERN KENTUCKY UNIVERSITY.

Jeffrey was writing a paper on the history of a house near the Stephen F. Austin State University Campus and

had to visit the library's special collections area. "It was fascinating," he said. "I had never been encouraged to use primary source materials — first-hand accounts of how people lived, their letters, and what they said. "I loved it. It was like reading someone else's mail from 100 years ago. That is really what clicked me into this whole librarianship thing."

Now, 14 years later, Jeffrey has left his mark in Kentucky's history by documenting such topics as the

Shaker textile industry, Warren County postcards, architectural history, and the state's public libraries.

"Because I'm interested in local history, I'm interested in every little aspect of it," Jeffrey said. "I'm interested in the medical history. I'm interested in the architecture, and how all these things affect our history as a whole, and how it changed this area, and how we view things."

Since librarians carry faculty status at Western, Jeffrey was expected to publish. He heeded the advice of Julia Neal, former head of special collections and a Shaker scholar, and began looking through the vast Shaker holdings in the Kentucky Library. "A lot of research is like this — someone else gets you interested in it or they see something in you that predisposes you to a certain kind of research," Jeffrey said.

"I just started looking at topics I might be interested in and there were numerous entries about textiles — because that was something that all pioneers had to do. So I talked with one of my colleagues here who has an interest in textiles and I said, "Why don't we go through all the Shaker records from South Union and pull out all the textile references?"

They discovered three distinct textiles: linens, silk, and woolsens, which they wrote about in three articles. "Then we got really interested in this huge woolen factory that they operated," he said. "We extrapolated a wealth of information because they kept all their receipts of how much cloth had come in, what processes they performed, what color they dyed it. There was a tremendous amount of material there."

That material went into a database and then became a book: *A Thread of Evidence: Shaker Textile Industries at South Union, Kentucky*.

"This was a really interesting project, and we can blame it all on Miss Neal. She knew what she was doing," he said. "Now that I've been at this a while, I realize that you're only here a short amount of time, and you have to get other people interested in it to keep that continuity up and the research going. Plus, anybody who has done research knows that in your pursuit of primary sources you might uncover ones that have never been used before. Sometimes that means purchasing new things for our collection, and sometimes it results in gifts being made to the University."



The Chaperon and the Evansville on Barren River, at Bowling Green, Ky.

The Chaperon and the Evansville. These steamboats were used by the Evansville and Bowling Green Packet Co. The Chaperon was built in 1884, the Evansville was built in 1880.

PHOTO COURTESY OF KENTUCKY LIBRARY AND MUSEUM



PHOTO COURTESY OF KENTUCKY LIBRARY AND MUSEUM

National Corvette Museum. The museum welcomes over 150,000 visitors a year for exciting programming and a spectacular exhibition of vintage Corvettes.

“Because I’m interested in local history, I’m interested in every little aspect of it. I’m interested in the medical history. I’m interested in the architecture and how all these things affect our history as a whole, and how it changed this area, and how we view things.”

Jeffrey’s interests were not limited to the Shakers. His interest in architecture has led to an active role in Bowling Green’s Landmark Association. “You can’t be involved in everything, so you have to pick the things that are most interesting to you, or might be most helpful to you, or where you might be most helpful to other people,” he said. “Landmark combines several of those things for me. I’m very interested in architecture and I like trying to get people involved in local history, and it’s really the only historical society we have in town.”

As editor of Landmark’s newsletter, Jeffrey tries to get other people involved by writing articles on local topics. That work led to another publication that proved to be very popular locally: *Bowling Green, Kentucky in Vintage Postcards*. Published in late 2002, the book sold out of its first 1,800 copies and is now in its second printing.

The project began when Arcadia Publishing called the Landmark office with the idea. “Finally, we gave in and said we’d do it,” Jeffrey said. He contacted historian Ray

Buckberry of Bowling Green, who has a large collection of postcards, and supplemented Buckberry’s collection with cards from the Kentucky Library collection.

Jeffrey selected the cards, sorted them into categories, and wrote the captions. “Anybody who thinks that’s easy hasn’t done it,” he said. “For some of these postcards I could write two or three pages about them. Writing captions of from 50 to 75 words, which is what the publishers wanted, was like trying to write poetry.”

The book provides significant documentation of Bowling Green and Warren County’s history. “The information in the book is good, and it’s good to have it written down,” he said. “Some of the businesses pictured in the book don’t exist any more, and people know little about them. So doing the research for this was, in many ways, like doing the research for any scholarly work.”

He said it was also interesting to notice how postcards changed over the years. “It’s sad how things have changed. Today we don’t have many postcards from our

area, even though we have some nice tourist sites.”

Since the book was so well received, Jeffrey is now working on a photographic history of Warren County using twentieth century photographs from the Kentucky Library’s collection. That book should be ready by Christmas 2003. “I think it shows the interest in local history, particularly pictorial works,” he said.

Jeffrey also has several long-term projects in the works, including comprehensive histories of Warren County and of the development of libraries in Kentucky. When he began writing a column for the quarterly newsletter *Kentucky Libraries*, he saw this as a place to start.

“For each issue I’ve been trying to research a different public library in the state and write its history in hopes that some day I can go back and pull all that together and see the trends and determine what I think has happened,” he said. “The more data you collect, the more you are able to see the patterns, how things have changed and why they changed.”

There are public libraries in 118 of Kentucky’s 120 counties. Jeffrey said he wants to find out why libraries were so slow to develop in the Commonwealth and why there are still two counties without libraries. In 1991 he



PHOTO BY LADONNA HARMON

Jonathan Jeffrey

wrote *Growing with Bowling Green: The History of the Bowling Green Public Library, 1938-1988* for the Friends of the Library.

Jeffrey also would like to produce a comprehensive history of Warren County. While some histories have been written, along with articles detailing various pieces of history, “there are lots of other pieces that need to be in place,” he said, such as histories of the railroad and quarry industries. “I’m encouraging other people to do more and more in local history. This goes back to that idea of getting other people interested.”

“For posterity’s sake it’s good that we’re doing these things now,” Jeffrey said. “Some of the information, when certain people die, is just gone. We don’t have a lot of it written down.

Changes in the way we communicate and our increased mobility will affect the ability of future researchers to gather information about today. Instead of writing, we use telephones and cell phones, or we send messages electronically via e-mail,” he said.

“We’re not keeping as much of the documentation about everyday life, and the documentation is not as full or colorful,” Jeffrey said. “Future generations will find it harder and harder to document society despite all our electronic gadgets.”

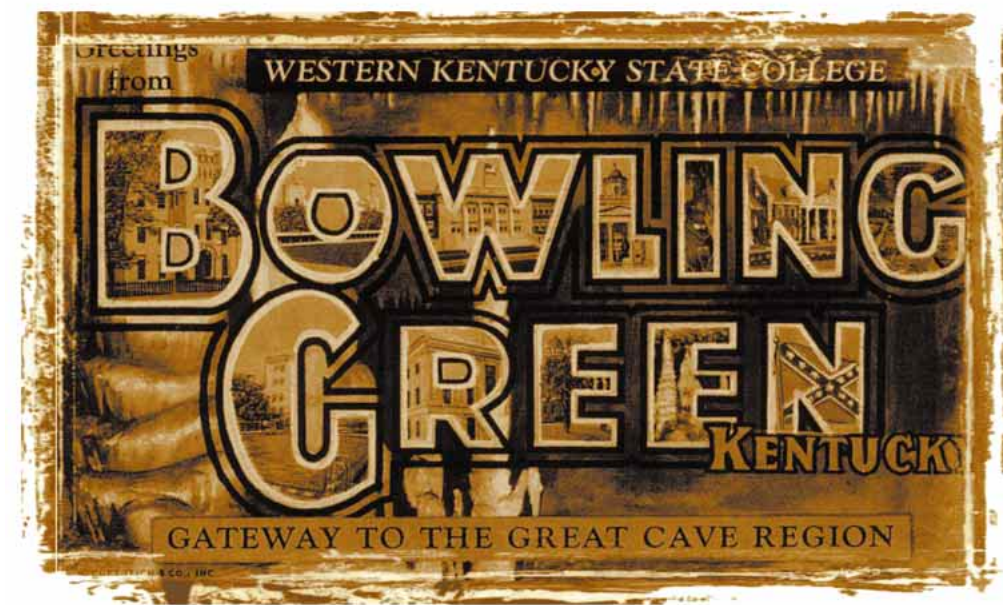


PHOTO COURTESY OF KENTUCKY LIBRARY AND MUSEUM

Novelty Card. The card captured two of the Bowling Green area’s greatest attractions: WKU and Mammoth Cave.

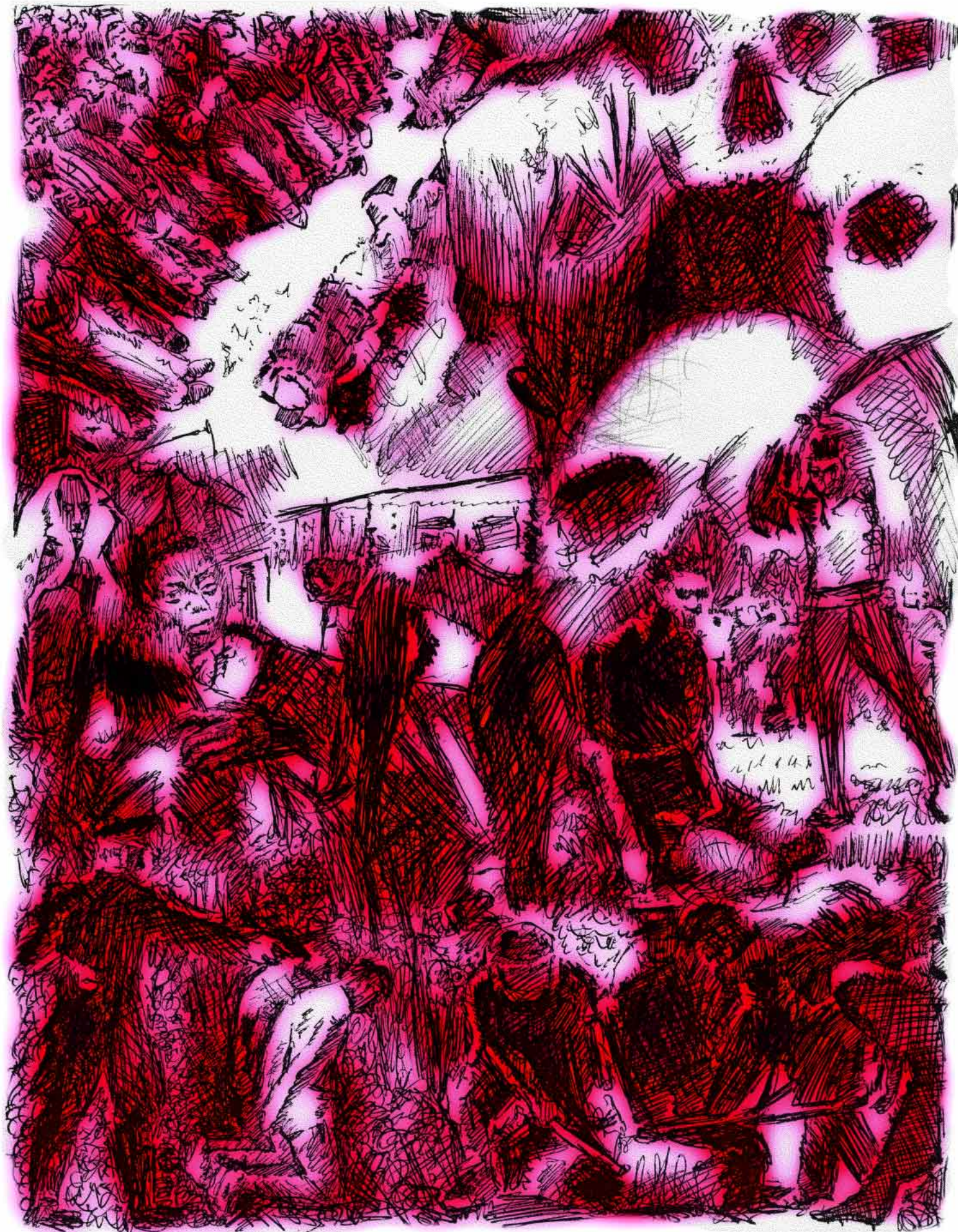


ILLUSTRATION BY TOM MEAGHAM

GLOBAL HUMAN RIGHTS

BY PHILLIP E. MYERS AND BETH SEWELL

THE ISSUE OF HUMAN RIGHTS WAS NOT ALWAYS A PRIMARY FOCUS FOR PSYCHOLOGY PROFESSOR SAM MCFARLAND. DURING MOST OF HIS COLLEGE YEARS HE WAS NOT CONCERNED WITH THE MISFORTUNES OF OTHER NATIONS AND PEOPLES. IT WASN'T UNTIL HE WAS REQUIRED TO READ WILLIAM SHIRER'S *THE RISE AND FALL OF THE THIRD REICH* THAT HE OPENED HIS EYES TO A NEW WORLD. THE TWENTIETH CENTURY PRODUCED MORE THAN 20 GENOCIDES, ALONG WITH COUNTLESS WAR CRIMES AND CRIMES AGAINST HUMANITY. AS DR. MCFARLAND BECAME INCREASINGLY AWARE OF THESE, HE BECAME MORE COMMITTED TO UNDERSTANDING AND TEACHING ABOUT HUMAN RIGHTS. FOR THE PAST DOZEN YEARS, HE HAS TAUGHT AN HONORS SEMINAR ON HUMAN RIGHTS EACH FALL.

But it wasn't until recently that he focused on human rights as an issue for psychological research. He wanted to know what made some people care and some people look the other way. He wanted to know what factors control how much they care.

"In the abstract, most Americans care about human rights, but in action they don't always."

His chance to find these answers began with his human rights research in order to publish a paper on his findings. With the help of Melissa Mathews, a senior honors student, McFarland found the answers to many of his questions. He said from the beginning it was evident that Mathews, who took his seminar, had the same level of

consciousness about human rights as he did. And with two people who cared that much about an issue, he knew they would find some answers.

"Melissa was great," McFarland said. "She put a tremendous amount of effort into the project and it was very clear that she was as concerned as I was."

Together they surveyed more than 200 people and reviewed the literature

on the psychology of human rights. The research and results led to the paper "Who Cares About Human Rights?" that indicated that human rights attitudes could be divided into three broad attitudes: human rights endorsement, human rights commitment, and human rights restriction. "These dimensions are relatively independent, so that a person



PHOTO BY SHERYL HAGAN-BOOTH

Dr. Sam McFarland

There are international steps being taken to quell genocide, war crimes, and crimes against humanity. For example, McFarland is watching the development of the International Criminal Court in The Hague.

can have strong human rights attitudes on one dimension but not on another," says McFarland.

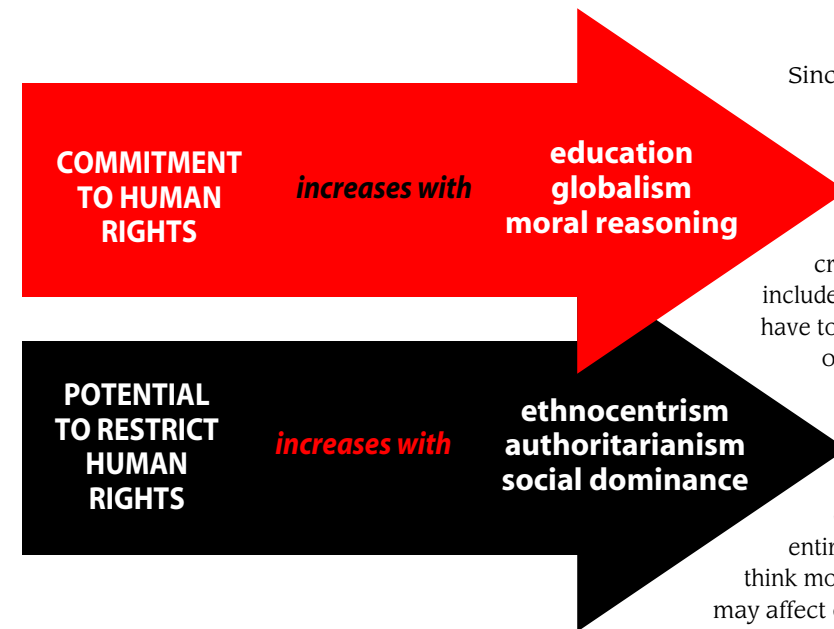
Human Rights Endorsement (HRE) is the simple agreement that human rights are important. A person who is high in the category of HRE would agree that freedom of speech and religion are important as abstract principles, but might not advocate cutting aid or trade to countries that abuse these rights.

Human Rights Commitment (HRC) refers to how much a person believes the nation should sacrifice to protect human rights around the world. A person high in this category would not only believe in freedom of speech for themselves and others, but they would support taking action when human rights are denied or abused. To measure HRC, McFarland described a number of historical scenarios such as the Rwandan genocide and asked participants what they think the US should have done: Send troops to prevent the genocide? Provide supplies for UN forces but not send troops ourselves?

Do nothing if the genocide does not affect US national interests? Other scenarios included: Should the US tie trade with China to improvements in its human rights record? Should the US support Central American dictatorships that are anti-communist but abuse their own people? Should the US risk its forces to prevent ethnic cleansing in the former Yugoslavia, or to arrest mass murderers there?

The third category, Human Rights Restriction (HRR), is measured by a subject's desire to take away rights from "evil" groups such as Al Qaeda. Individuals high in HRR would not be concerned, for example, about the legal or civil rights of Taliban prisoners held in Cuba.

McFarland developed a survey to measure each of the three categories of human rights attitudes. By asking questions, he was able to tell if the participant was committed to human rights. This method of surveying, combined with various other questions for rating the importance of things, provided McFarland with his results.



Thus, he found that education, globalism (a concern for global issues generally), and high levels of moral reasoning were key indicators that made people actively care about human rights. He also found that ethnocentrism (the idea that your race is above all others), the authoritarian personality, and social dominance reduced a person's commitment to human rights in other nations as well as increased their potential to restrict rights of others.

"In the abstract, most Americans care about human rights, but in action they don't always," McFarland said. "For a lot of people, human rights isn't really an issue until a human rights abuse happens that affects them."

Although he would very much wish to see more American commitment to protecting universal human rights around the world, McFarland still feels that he has served a purpose by turning the focus on education for himself and others. He said that by learning the patterns and ways in which people care and what makes them compassionate toward others, it will be possible to reduce human rights violations and crimes against humanity.

Two ways he plans on continuing his work are to write a college textbook on human rights and to conduct follow-up research. McFarland said he would also like to begin researching globalism and find out what it is that makes people care about all global issues.

Since it was one of the key determinates of caring about human rights, he is interested in seeing what else produces and comes of the global attitude.

McFarland's global research perspective has advanced his interests in genocide, war crimes, and crimes against humanity. War crimes include the killing of prisoners; crimes against humanity have to do with persecuting civilian groups by starvation or other means. There are other things that militaries and political leaders do that fall under the rubric of any of these atrocities. Readers often ignore what we get in the newspapers as too far away to be of concern. Yet these genocides affect the entire world and the better we explore why we do not think more of them ourselves and how these genocides may affect our lives is a key part of McFarland's research.

There are international steps being taken to quell genocide, war crimes, and crimes against humanity. For example, McFarland is watching the development of the International Criminal Court in The Hague. This Court was implemented to try crimes of genocide, war crimes, crimes against humanity, and the crime of aggression. Since the crime of aggression is not yet legally defined, there is still a lot of work to do in defining aggression. Is a pre-emptive strike aggression, for instance?

McFarland began his teaching career at Western in 1971 after attending David Lipscomb University in Nashville, Tennessee, for his undergraduate education and Vanderbilt University for his graduate work. In 1989, he was a Fulbright Senior Lecturer in the Soviet Union, and in 1999 he was awarded the title of Distinguished University Professor.

This research is scheduled to appear in the journal *Political Psychology* in the near future.



McFarland said he would also like to begin researching globalism and find out what it is that makes people care about all global issues.



ILLUSTRATION BY DINARA SAGATOVA

PUBLIC SCHOOLS: CAN COMPETITIVE FORCES MAKE A DIFFERENCE?

BY CAROL CUMMINGS

DR. MEL BORLAND, A PROFESSOR OF ECONOMICS AND A DISTINGUISHED PROFESSOR AT WESTERN KENTUCKY UNIVERSITY, IS A LEADING RESEARCHER IN THE AREA OF SCHOOL CHOICE AND COMPETITION AMONG SCHOOL SYSTEMS. WITH HIS COLLEAGUE AND FELLOW ECONOMIST DR. ROY HOWSEN, BORLAND HAS AUTHORED A NUMBER OF RESEARCH ARTICLES ABOUT MARKET COMPETITION AMONG SCHOOLS, OFTEN REFERRED TO AS SCHOOL CHOICE. BORLAND AND HOWSEN FIRST BECAME INTERESTED IN THIS TOPIC MORE THAN TEN YEARS AGO. THEY HAD CHILDREN CLOSE TO THE SAME AGE WHO WERE IN THE SAME PUBLIC ELEMENTARY SCHOOL, AT THE DAWNING OF THE KENTUCKY EDUCATION REFORM ACT (KERA) IN 1990. KERA WAS ONE OF THE

MOST COMPREHENSIVE EDUCATION REFORMS EVER INITIATED IN THE UNITED STATES. IT CALLED FOR TOP-DOWN AND BOTTOM-UP SYSTEMIC CHANGE IN FINANCE, GOVERNANCE, CURRICULUM, AND ASSESSMENT.

"I am an economist, and my specific area of interest is industrial organization," Borland said. "Our research focuses on whether or not an industry performs differently based upon the way in which it is organized. We simply applied this concern to the public school systems," he said.

In their research about competition between schools, Borland and Howsen considered the methods by which industries conduct operations and generate products.

Borland explained that industrial organization is a specific area of interest concerned with industrial structure, conduct, and performance. "Studies of industries, such as the airline industry and the steel industry, are common," he said. "Studies of the effect of structure on conduct and performance in education are relatively recent, but, nevertheless, consistent with studies of other industries and simply the result of the natural expansion of the application of economic analysis."

"Within the past several years, there has emerged a growing body of empirical evidence that suggests greater market competition among schools has resulted in higher student academic achievement," Borland states. "Market competition is dependent on the size distribution of firms, in general, and, for our work, on the size distribution of school districts within well defined market areas, in particular. For example, in an industry where one big firm dominates the market and there are several much smaller firms, there isn't much competition. The same thing applies to schools. Our goal is to look carefully at what determines student achievement so that school leaders can determine what factors can be manipulated for change."

Though much had been written about competition between public schools and private schools, Borland and Howsen were the first researchers to take this a step further to study how public school students benefit from market competition and school choice.

As they conducted their research, Borland and Howsen employed a statistical model of measured student achievement dependent on attendance rate, percentage of graduating students who go on to college, pupil/teacher ratio, measures of cognitive skill, average teacher salaries, the presence of teacher unions, and the rank earned by teachers. The study consisted of more than 33,000 individual student observations in 670 schools across Kentucky.

The results of the research suggest a relationship between student achievement and the degree of market competition. "The results confirm previous suggestions that policy-makers should encourage market competition among schools by signing "average daily attendance" agreements that allow students to cross previously restricted school district borders and allow the state

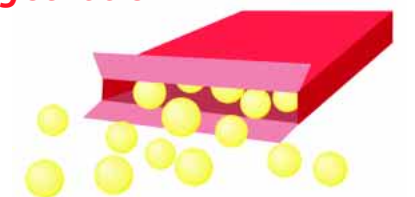
money allocated for those students to go to the district receiving the transfer students. Moreover, Borland and Howsen found no significant statistical adverse effects such as higher costs or lower performance from these differences in degrees of competition.

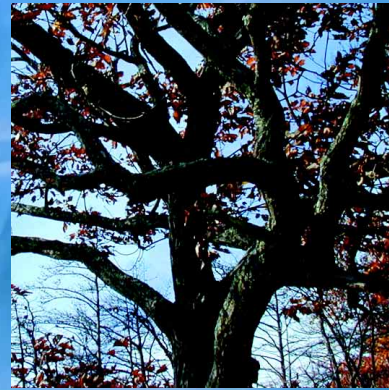
"The consistent result of our empirical work, which is now supported by the work of others, particularly by the work of Harvard University's Carolyn M. Hoxby, one of the nation's pre-eminent authorities on school choice, is that increases in the degree of educational market competition result in increases in student academic achievement for associated public school students," Borland said. "We made comparisons of the academic achievement of students of schools in educational markets that differ in the degree of market competitiveness, adjusting for influences of other variables over which policy-makers have no control.

Borland acknowledges that there are many variables over which public school officials have no control, such as parental interest and student cognitive skill levels. "Officials who seek to improve student academic achievement should identify those variables (such as expenditures per child and the existence of average daily attendance agreements) over which they have control that are, in fact, important in their effect on student achievement," he said. "Policy-makers who seek to cause improvement in student academic achievement should construct policies that encourage market competition between schools."

Borland received his B.A. from Centre College, and his M.A. and Ph.D. from Washington University in St. Louis. Howsen received his B.S. and his Ph.D. from the University of Arkansas. Their joint publications on the subject of school choice include, "Student Academic Achievement and the Degree of Market Concentration in Education," and "On the Determination of the Critical Level of Market Concentration in Education," both of which appeared in the *Economics of Education Review*. They are currently involved in the analysis of intra-school competition as related to size distribution of classes within schools. If there are three fifth grade classes in a school, will student achievement be higher than in schools with only one or two fifth grade classes? Borland and Howsen hope to find out, and when they do, they'll let you know.

"Within the past several years, there has emerged a growing body of empirical evidence that suggests greater market competition among schools has resulted in higher student academic achievement."





Up Front Geology

BY TOMMY NEWTON

AS ENVIRONMENTAL GEOLOGISTS, RESEARCHERS, AND CONCERNED CITIZENS, KEN KUEHN AND MIKE MAY AREN'T THE TYPES TO JUST SCRATCH THE SURFACE, WHETHER IT'S IN THE CLASSROOM, RESEARCH PROJECTS, COMMUNITY SERVICE, OR ELECTION CAMPAIGNS.

"As professional geologists we are concerned with sustainable development or what some have called intelligent development," Dr. May said. "In particular, we are interested in human interactions — good or bad; past, present, and future — with the geological environment which includes groundwater, surface water, air, rock, and soil."

Even though they've been called extremists, elitists, and environmentalists for their stance on development issues that affect the environment, the two members of Western's Department of Geography and Geology insist their main goal is education — both in the classroom and throughout the community.

Last November the pair appeared on the ballot as candidates for the Bowling Green City Commission. "It was a great opportunity to get our message out, to meet more of our neighbors, and to enjoy some attention from the media. Rarely have geologists stepped up like this, but rarely has so much been at stake," May said. "Although we

were not among the winners, we made the point that there are qualified people on the Hill who are willing and able to take on leadership roles in the larger community. It was all very worthwhile," according to May. "We're not going to settle for less than a transformation of this community, a transformation in thinking, decision-making, and action," Dr. Kuehn said.

Kuehn and May want their students, the public, and the community's decision-makers to know that anything above and below the ground is affected by what's done or built on it.

They have studied the proposed transpark in northern Warren County, plans for Interstate 66 through southcentral Kentucky, and the impacts of geohazards (earthquakes, floods, and landslides) across Kentucky. They also served on Bowling Green's Storm Water Advisory Committee that has developed plans over the past two years to help the community comply with the federal Clean Water Act.

"Our students are really thrilled when their professors are involved in ongoing, real-world activities," Kuehn said. "They feel there's relevance to what they are learning."

The 2002 catastrophic collapse of Dishman Lane, when a 150-foot by 130-foot sinkhole opened in the Bowling

Green road, was an example of a geohazard and a geological process that provided a valuable learning opportunity for many students in WKU's Ogden College of Science and Engineering, Kuehn said. "In this case, nature sent us a million dollar repair bill, but it was human activity on the surface that stimulated the collapse."

Geologic hazards, such as earthquakes and landslides, cause millions of dollars in losses in Kentucky each year. The types and severity of geologic hazards vary across the state, depending on the geology, topography, hydrology, and human activity.

According to the Kentucky Geological Survey, annual losses caused by earthquakes in Kentucky run about \$18.7 million. A large landslide at Hickman in far western Kentucky destroyed many houses and more than \$10 million has been spent to try to fix it.

The state's well-known karst hazards include sinkhole flooding, surface subsidence, sudden cover collapse, and leakage around dams. The estimated damage caused by these occurrences every year in Kentucky is between \$500,000 and \$1 million.

Since 2001, other roadway collapses have occurred on the Natcher Parkway between Bowling Green and

Morgantown, on the Audubon Parkway between Owensboro and Henderson, and on the Nunn Parkway near Somerset. Each of these cost more than \$1 million to repair.

As our existing infrastructure ages, the expanding economy and population are forcing new development in less desirable locations, which are more prone to geologic hazards and more likely to adversely impact the environment, May said. The Kentucky Geological Survey is striving to provide better information on geologic hazards in Kentucky, through technical research and assistance, as well as public education and awareness. (More information is available at <http://www.uky.edu/KGS/geologichazards/geologichazards.html>)

"Geology is the true environmental science because it looks at Earth as a system in which all subsystems interact and overlap," May said. "It's not just rocks, for example, but the interaction between rocks, water on the surface and underground, the atmosphere, life forms, and internal forces in the planet like plate tectonics."

In their research projects, the two geologists and their students use water data from the Environmental Protection Agency and Kentucky Division of Water; air quality

As our existing infrastructure ages, the expanding economy and population are forcing new development in less desirable locations, which are more prone to geologic hazards and more likely to adversely impact the environment.



PHOTO BY MARCUS DUKES

data from Mammoth Cave National Park and other sources; geologic and hydrogeology maps from the Kentucky Geological Survey and the U.S. Geological Survey; and soil maps and soil photos from the U.S. Department of Agriculture.

Their research also requires extensive fieldwork and direct observation including taking samples of rock and soil and documenting sites. Western's emerging GIS (geographic information systems) program can provide valuable mapping, data analysis, and risk assessment, Kuehn and May said. Faculty and students can provide services and expertise on issues like storm water drainage, mapping sinkholes or abandoned landfills, development on karst terrain, climate, air quality, and earthquake risk assessments.

"Our students definitely want to be part of the research process that can be applied to the planning and future development of our community," May said.



PHOTO BY LADONNA HARMON

While Kuehn and May have been called impediments to economic progress, they contend that costly environmental problems locally, regionally, and statewide could have been and could be avoided by seeking input from geologists in the early stages of development planning.

Bowling Green's storm water management plan could cost a minimum of \$1 million to \$2 million per year. Landfills and other environmental cleanup problems have cost the community millions of dollars over the past 20 years.

"We've gotten to the point where we have a lot of growing pains and we're going to have to take some kind of medicine for those," May said. "A lot of times people don't like to take medicine."

In selecting areas for industrial development, Kuehn and May believe that environmental risks and the reduction of prime farmland must be considered. "We're not talking about a no-build option," May said. "We're saying let's think about where we want to build and whether the presumed benefits outweigh the true costs."

"Our continued growth is important, but only if our quality of life and environment are protected for ourselves and others," he said. "This means there must be true economic gains not tied to hidden costs of leaky landfills, rivers and lakes unfit for swimming, or polluted storm water. This can be assured only if geologists are brought in as an integral part of the planning process, not just used in scenarios that involve cleaning up hazardous materials after the fact."

"We live in a world renowned karst area located adjacent to a national park," May said. "We want everyone to know this is a special place. We know we can't save every tree or every sinkhole, but we do know there is a good way and a bad way to plan and manage development projects."

Kuehn and May hope that Western, the community, and the decision-makers can work together to solve environmental and economic development issues.

"Real economic development embraces good planning," May said. "We want to avoid the type of planning that says build, build, build at all costs because it's going to make us better. It isn't. The thing that's going to make Bowling Green prosperous is not growth alone — it's education and workforce development."

"In the next 20 years, Warren County, Kentucky, has the potential to be a completely different place than it is right now," Kuehn said. "We are working to ensure a positive transformation."

Our continued growth is important, but only if our quality of life and environment are protected for ourselves and others.



Mike May (left) and Ken Kuehn (right)

PHOTO BY LADONNA HARMON

EVOLUTION OF THE CONCRETE CANOE TEAM



BY TOMMY NEWTON

IN THE PAST ELEVEN YEARS, THE CONCRETE CANOE HAS DONE MORE THAN FLOAT; IT HAS HELPED WESTERN'S CIVIL ENGINEERING PROGRAM RISE ABOVE REGIONAL COMPETITORS AND CRUISE TO NATIONAL PROMINENCE.

Western civil engineering students finished fourth in the 2002 National Concrete Canoe Competition, including a first-place finish in the event's academic portion. In the 2000 and 2001 national competitions, WKU finished tenth and eighth, respectively. The team advanced to the 2003 national event by winning its eighth straight Ohio Valley regional title this spring.

"Obviously a national championship would be nice, but that's not the goal," said Matthew Dettman, team adviser and the James D. Scott Professor of Civil Engineering. "I tell the students that when we've done everything we can

do to put the best product forward, we'll be successful regardless of how we finish."

Dettman's theory about the concrete canoe and other project-based learning experiences in WKU's Department of Engineering is simple. "This project is not about building a concrete canoe," he said. "It's about building engineers. The canoe project teaches problem solving, teamwork, and initiative."

Each year team captains learn that project management also requires people management, a key component for the team's success, Dettman said. "Managing, scheduling, and documenting the time and work can be difficult, but it provides one of the most important lessons — you can't just leave the details behind," he said.

Students who spend nine or ten months each year working on the concrete canoe agree.

"The main thing we learn out of this is problem solving," Scott Neighbors, co-captain of the 2001 canoe team, said after that year's competition. "At any point in time you can face a problem that must be solved before the project can continue."

"Building a concrete canoe is not something you'd do every day in the real world, but all the management techniques will be used daily," Neighbors said. "As the manager of a construction site, I'd have to manage people to get the job done."

During the 2001-02 year, students Clay Ellis of Beaver Dam and Deneatra Flener of Morgantown led the team that created the canoe named "Evolution," and were responsible for a ten month project that involved hours of planning, design, construction, concrete mixing, testing, project reports, display construction, and fund-raising.

"If you want to win, you've got to set your goal to be the best," Ellis said during the 2002 regional competition at Basil Griffin Park in Bowling Green.

Work on 2002's "Evolution" actually began on the trip back from the 2001 national competition in San Diego. When the 2001-02 academic year began in August, Dettman and students met to select team leaders and make plans for the canoe. "Evolution" was more than a name. It also described how far the concrete canoe team

had progressed in ten years and detailed the team's history in national competition.

"I always tell them that the only team they are competing against is the previous WKU team," Dettman said. "If they can take what was learned in the previous year and grow from there and continue to improve, then they will be successful. We cannot control what the other teams do. All we can do is learn from the past, improve, and turn in the best possible performance."

In August 2001, Ellis, Flener, and other team members began work on "Evolution" by dismantling the form used to build "Aquavette," the canoe that finished eighth in the nation.

"If you want to do well at nationals, you've got to start from scratch right here," said Ellis, who was part of the concrete canoe team for three years. He got his start by helping the rowers and moved up in responsibility each year, culminating in being co-captain.

While the students knew the canoe's basic look wouldn't change, they knew that design changes would improve speed and material changes would improve durability. Designs were drawn on a computer and smaller models — each with a slightly different design — were built and tested.

In October 2001, Ellis, Flener, and Matt Shockley of

Mount Washington covered the ten small models — which were made of foam, plywood, and fiberglass mesh — with a concrete mixture that included Portland cement, ceramic 714 and 1430 (small aggregates), microspheres, recyclospheres, glass bubbles, durafibers, structural fibers, acrylset, latex, and superplasticizer.

The key, Flener said, was keeping the concrete light-weight but strong.

For example, the glass bubbles provide strength without weight. ("Evolution" was 21 feet, 4 inches long and weighed 95 pounds.)

After the final design and concrete mixture were selected, the students built the form that gave "Evolution" its shape. The form was built of 97 wooden cross sections separated by 2-inch foam sections. Each cross section was a different size giving the form its shape from a wide middle to pointed ends.

The cross sections and foam were covered with drywall compound then sanded before the 36 hour process of pouring concrete in three, 1/8 inch layers. Once the concrete hardened, the form was removed and the canoe was sanded, painted, and prepared for competition.

In "Evolution" Ellis and his team were looking for a design that would provide additional speed in the straight-aways during the rowing competitions. "Aquavette" was fast in the turns but slow in the straight-aways. Ellis wanted "Evolution" to have both. "What we do is pick and choose and go off the rowers' feelings from last year," Ellis said.

The gut feelings and calculations proved correct as "Evolution" turned in the fastest times of any WKU concrete canoe. In the April 2002 regional, Ellis and Chris Bates paddled "Evolution" to a 1 minute, 13 second run on the lake at Basil Griffin Park.

"This is probably the best boat we've put in the water and I like to be able to make that comment each year," Dettman said after the 2002 regionals.

For the past eight years, WKU's concrete canoe team



The project is not about building a concrete canoe, it's about building engineers. The canoe project teaches problem solving, teamwork and initiative.

has won the Ohio Valley Regional and advanced to nationals. Both competitions include athletic portions (men's, women's, and co-ed races) and academic portions (display, design, paper and oral report).

At the 2002 national competition in Madison, Wisconsin, "Evolution" finished 3.5 points from second place among 25 schools that qualified from the more than 250 teams that entered regional competitions. The

fourth-place overall finish, the team's best ever, included a first-place finish in the academic portion.

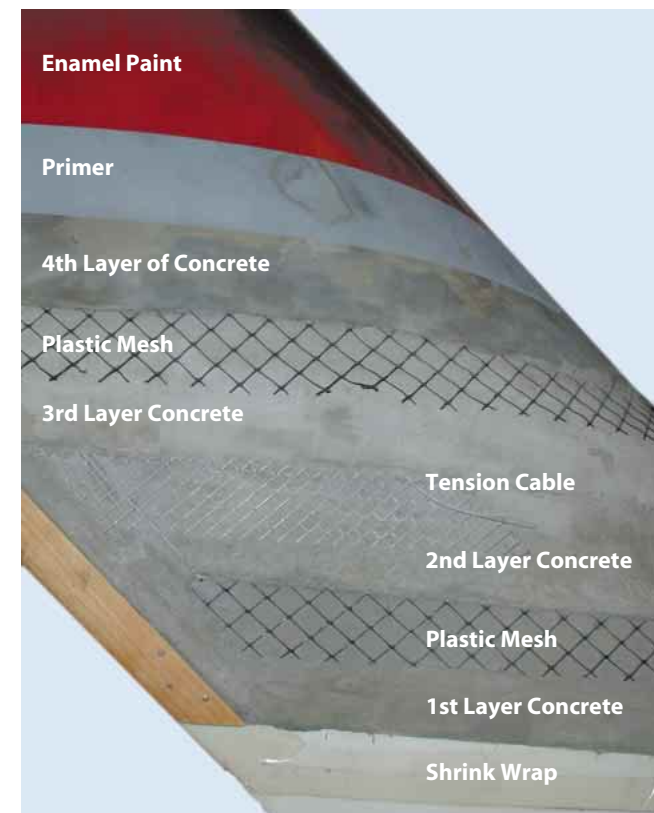
"To finish first in the nation in the academic portion is really an achievement for us," Dettman said. "The competition was tough and we were able to step up in the academics. For us to win the academics portion against master's and doctoral students is really an outstanding achievement."

The concrete canoe is one example of the WKU Engineering Department's focus on project-based learning. The department's mission is to produce graduates who are competent engineering practitioners with a foundation of basic science, math, and engineering knowledge combined with practical knowledge and experience in applying existing technology to contemporary problems.

Through project-based learning experiences, Western students are developing the engineering, communication, and teamwork skills needed in industry. Students from freshmen to upperclassmen work on projects, both inside and outside the classroom, that develop the skills necessary to become successful civil, mechanical, or electrical engineers.

This year freshman civil engineering students designed and built a concrete toboggan. "I'm sure we'll retain more students in engineering because we do projects in the freshman year," Dettman said.

"As I told the mother of a prospective student, our students learn to do things through project-based learning," Dettman said. "In projects like the concrete toboggan and canoe, they learn to take a project from concept to completion."



Cross-sections of "Aquavette" and "Evolution"

DARLENE APPLGATE LOVES TO DIG. IT DOESN'T MATTER IF IT'S DIGGING UP BONES, FRAGMENTS OF GLASS, OR SPEAR POINTS; A SHIVER OF EXCITEMENT PASSES THROUGH HER WHEN EVEN THE SMALLEST SHRED OF CERAMIC OR METAL IS UNCOVERED. "EVERY PIECE IS INFORMATION," DR. APPLGATE, ASSISTANT PROFESSOR OF ANTHROPOLOGY AT WESTERN KENTUCKY UNIVERSITY, SAID. "YOU DON'T HAVE TO GO TO EGYPT TO GET IT; THERE'S PLENTY TO DO HERE."

The majority of Applegate's archaeological work has been done in Western Kentucky. Three of her most recent projects included analyzing bones from Allen County, excavating artifacts near Hidden River Cave, and researching a pioneer family from Butler County. With several projects going on at any given time, Applegate's plate is always full, but having her students work with her on each project makes the work load lighter and the experience more valuable. "Every research project that I've worked on

since I've been here involves students," Applegate said. "My two reasons for doing so are both selfish and selfless. Selfish because the work gets done faster, and selfless because each project provides hands-on learning for the students."

Applegate shares her passion for archaeology with many of her students and tries to tailor class assignments and projects to what their interests are, and not just her own. One "hands-on" project with her students was at Hidden River Cave, where they excavated a site with historic and prehistoric components. They found concentrations of coal and slag indicating heating and black-smithing activities; historic bottle glass, window glass, dinner plates, marbles, ammunition, and coins indicating domestic and recreational activities; and spear points and chert flakes indicating hunting and stone tool manufacturing activities. The students set up a grid and each was responsible for one square of earth. They dug in

Can YOU Dig It?

BY BETH SEWELL



PHOTO BY LADONNA HARMON

five-centimeter increments, documenting and bagging their findings at each level. "It's so exciting to see them making those discoveries," Applegate said. "You hear a shout of 'I found one! I found one!' and everybody runs over to see — and it's a great feeling."

Applegate said the excitement continues in the lab when the artifacts are cleaned and analyzed. By measuring the thickness of a simple piece of window glass, a scientist can determine the period when a house was built. A fragment of a dinner plate can be traced by markings on the back. Each piece contributes to the bigger picture of what events took place in a particular area. And in the area of Hidden River Cave, tens of thousands of artifacts were found. "That's a very dense concentration so you can imagine how time-consuming it is to go back through it all," Applegate said.

While processing the data from Hidden River Cave, Applegate is also working with her students analyzing skeletal remains from a prehistoric burial site of Native Americans in Allen County. From the bones gathered at the site in the 1970s and 1980s, Applegate gave each



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PHOTO BY LADONNA HARMON

student in her forensic anthropology class a bag and told them to treat it as evidence from a crime scene. The students were responsible for telling her everything they could about the contents of the bag, such as how many people's remains they had, gender, age, diseases, cause of death, and what type of mortuary preparation was used on the bodies. In addition, Applegate has directed two student independent studies using the collection. She realizes that to people outside of her archaeological bubble, sifting through bones and researching dead people might seem odd, but to Applegate, the assignment is her way to ensure a bright future in her students' experience with archaeology. "We have a lot of students who want to go on to graduate work in forensic anthropology," Applegate said. "Hands-on experience working with skeletal collections, before they apply to graduate school, will increase students' chances of getting in."

With her baccalaureate degree from Miami of Ohio and master's and doctoral degrees from Ohio State University, Applegate has experienced first-hand how important it is to be well educated before venturing out in the field.

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For a recent project in Butler County, Applegate was immersed in another realm of archaeology — this time in the form of historic rather than prehistoric archaeology. The setting was an abandoned graveyard Applegate saw one day while walking her dogs. It was old and run down, and she decided to turn it into both a learning and service project. Last summer she taught a course in graveyard archaeology, which involved students in cleaning the graveyard, using archaeological methods to locate buried gravestones, and researching the people buried there. They found that the graveyard was filled with members of the Kuykendall family, who were among the first settlers of Butler County, Kentucky. Using historical documents, they were able to see pictures and read letters these family members wrote years ago. "I've always been a prehistoric archaeologist, working with remains of people who died before writing was invented," Applegate said. "And now to do historic work and be able to put a picture and a name and even handwriting with a grave, it's amazing — I think I have the bug."

Her students also got "the bug" during their summer of research. Applegate said her students began to treat the Kuykendall family as an adopted family. Many members of the Kuykendall family, especially those who died in

non-census years, had little or no formal historical documentation of their lives. This made the students even more determined and excited when they were able to reclaim the lives of these people who, before the class came, weren't known to exist because their gravestones were buried. "A huge benefit of having students out there is that they can see the practical applications to what they're learning in archaeology," Applegate said. "And that is so important." Although the class is over, Applegate hasn't seen the last of the Kuykendall family. She identified six other family graveyards within a five-mile radius of this Kuykendall plot. She plans on researching those sites as well. In addition, she and her students are excavating at a Kuykendall farmstead this summer.

The workload Applegate carries will never get lighter because she said she feels like she's not contributing to history if she's just sitting around. Her current field projects combined with the vast amount of un-analyzed artifacts at the Rock House on Western's campus will certainly keep her busy for the next ten years. "I'll never run out of things to do," Applegate said. "There's so much out there and so much to learn and discover. It's amazing. It's just an endless excitement for me."

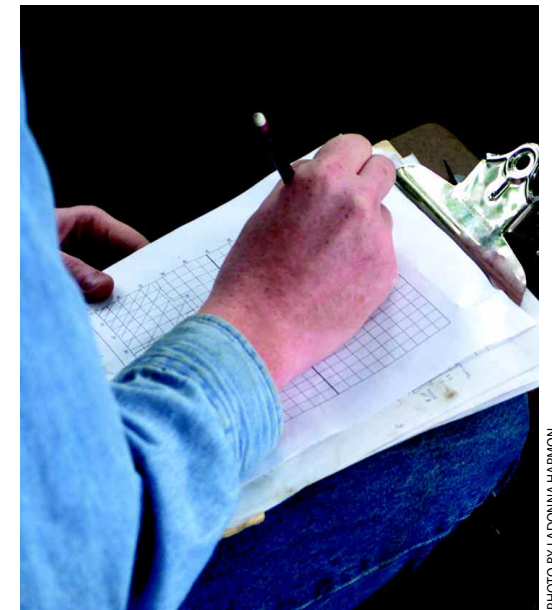


PHOTO BY LADONNA HARMON

RESEARCH BRIEFS

Researching *Rubus*

Dr. Larry Alice, Department of Biology, has received a National Science Foundation grant for \$211,592 entitled "Molecular Phylogenetics and Allopolyploidization in *Rubus*." To address questions concerning the evolution of plants, Alice will reconstruct the evolutionary history of the genus *Rubus*, a member of the Rose family. *Rubus* species are found in temperate regions on all continents except Antarctica. The genus is economically and ecologically important as fruit crops (raspberries, blackberries, cloudberries), ornamentals, food for wildlife and indigenous peoples, and as invasive weeds. *Rubus* is a challenging group with regard to species identification and classification due to hybridization, diversity in external form, and multiple sets of chromosomes. No comprehensive study of the species' diversity has been done for nearly a century. The outcome of the study will contribute valuable information to scientific, academic, and public communities.

The project has three principal goals. Alice will clarify the evolutionary relationships within *Rubus* and

elucidate the origins of the biologically complex subgroups including the economically important species. Hypotheses of plant speciation itself will be researched by examining the origins of several North American and European blackberry species. Alice's results will contribute information toward the classification of plants within an evolutionary framework. Finally, he and his students will construct a *Rubus* web site to disseminate the results of the works.

Three undergraduate students and

one graduate student are funded by the project and will participate in all of its phases. Their experiences will give them insights into scientific research methods and provide them with highly marketable molecular and bioinformatics (recording and analyzing biological data to facilitate transference) skills. The students will present their results at international and regional professional meetings. Their research with Alice will be useful to plant breeders, natural resource managers and field biologists.



Blackberries are considered a distinct subgenus of Rubus and readily form complex hybrids.

Educating EMTs

Lee Brown has received a grant for \$120,000 from the Kentucky Board of Emergency Medical Services to improve rural accessibility to hospitals. The grant will enable her team to assess overall learning needs and deficiencies of pre-hospital emergency care workers in medically underserved counties of Kentucky. It will then provide continuing education to enable a high level of pre-hospital care to victims by providing

paramedic education to certified Emergency Medical Technicians and degree completion courses to licensed Paramedics through the University's associate degree program. The grant provides administrative continuing education to Emergency Medical Service (EMS) directors.

The grant team developed a Learning Needs Assessment tool and administered it to random service directors, medical directors, and rank-

ing staff in identified counties. The project will provide continuing education courses in patient assessment, airway management, shock, general pharmacology, trauma, medical emergencies (respiratory, cardiovascular, nervous system), and obstetrics/gynecological/neonatal problems.

This project will provide a big boost for underserved medical personnel in our state and save lives.



Dr. Kinchel Doerner

Battling Bacteria

Dr. Kinchel Doerner, Department of Biology, has received a grant for \$51,222 from the National Institutes of Health through the University of Louisville Research Foundation to detect and track bacterial-resistant genetic elements in human sewage. The implications for our

environment are significant. Doerner will use modern molecular ecological methods to identify and track these germs. The project will employ undergraduate research students to retrieve samples for the Bowling Green sewage treatment plant, extract DNA, and analyze each sample for the

presence of all known bacteria. Doerner will analyze the samples using a Genetic Analyzer to identify the elements present, and will perform serial dilutions of the samples prior to DNA extraction.

Students will prepare the data and deliver oral and poster presentations at regional meetings, and they will write a manuscript for submission to a research

journal in applied and environmental microbiology under Doerner's editorship.

The outcome of the research will be to determine better methods of fighting a number of bacteria-related problems that face many of us. Some of these are urinary tract infections and neonatal sepsis. The research is made more important because there are no effective pharmaceuticals to neutralize vancomycin resistant enterococci (VRE). This project will clarify risks inherent in the movement of pathogens from farm to food to patient, and in so doing it will cut down on health costs. Funds from the project will enable Doerner to travel to microarray technology workshops at the University of Louisville to establish collaborations with the U of L team and become familiar with appropriate approaches to array design, data analysis, and corresponding hardware and software to increase research at Western.

Evaluating Education

After first-year funding of \$97,551, Drs. Tony Norman and Bill Pfohl have received a second year continuation grant of \$52,000 from the Mississippi Department of Education as part of a larger effort to develop observation instruments and training materials for an audit team that will be used during school visits to improve Mississippi public schools. This set of instruments will evaluate schools in the areas of personnel, school management, curriculum, school board operation, school community involvement, school resource allocation, safe and orderly school environment, and public relations. Norman and Pfohl are developing the safe and orderly schools evaluation instrument.

The first year has involved developing instruments and materials for use in training evaluators in observation, data collection, and analysis related to safe and orderly schools. Also, after initial training, evaluators have field tested this instrument, as well as the others created

at this time. Improvements have been made to instruments and training materials based on this initial testing.

The second year has included two days of training for the audit team leaders in team management and operation, and seven more days of training for audit team leaders and members in how to use

the data collection instruments and procedures. It has also included additional pilot testing in a sample of schools, analyzing collected data for instrument improvement, and setting standards through a standard-setting panel of 20 persons representing educators who will be affected by the standards. Completion of the grant will include scoring the instruments from participating schools and production of a final set of instruments that will make up the Mississippi Department of Education's Mississippi School Level Accountability System.



Dr. Tony Norman



Dr. Bill Pfohl

Technology Transfer and Commercialization Committee

To assist Western Kentucky University's faculty, staff, and students with inventions and copyrights resulting from their research and instructional endeavors, President Gary Ransdell established a Technology Transfer and Commercialization Committee (TTCC) beginning in the fall semester 2002. It is a small group that represents key areas of the campus from which technology and commercialization products are spawned; and its mission is to cut down the time period from disclosure to licensing. The TTCC exists as another service arm of the Office of Sponsored Programs.

The mission of the TTCC is to create appropriate policies and procedures to facilitate the movement of campus technology to the workplace and to commercialize the intellectual properties of WKU, through its agent, the Western Kentucky University Research Foundation, Inc., whenever and wherever possible.

The outcomes of the TTCC's activities benefit academic programs and provide financial assets for programmatic development. The TTCC educates industry about academic goals and values and, at the same time, enables industry to educate the University. The TTCC works through the Office of the President, the Division of Academic Affairs, the University Senate, and the colleges and other units to further the campus transformation.

Presently, the TTCC is planning to alert the campus about its mission while continuing to review intellectual property disclosures and to market

properties. An administrative database designed by Microcomputing and Sponsored Programs employees was successfully marketed to a nearby university; and a toolkit developed through the College of Education and Behavioral Sciences to prepare teachers for Education Professional Standards Board certification has been approved. Royalty payments help fund the creators, fiscal affairs, the originating

procedures, and incentives to effectively transfer technologies created in classrooms and labs to the marketplace. It recruits private sector collaborators to work with particular university programs to enhance technology transfer and commercialization.

The results of the committee's work will enable Western Kentucky University to fully realize the commercial value of research, instruction, and public service activities for the public good. The TTCC will help university inventors and industry to transform scientific progress into products and services. It will not only mine university research, but it can pursue patents, negotiate licenses, and market inventions. Technology transfer benefits the public by contributing to new product creation and new economic opportunities to attract and retain superior faculty.

TTCC faculty committee members are Michael Seidler, professor, Department of Philosophy and Religion; Blaine Ferrell, dean of the Ogden College of Science and Engineering; Shivendra Sahi, director of the Biotechnology Center; and Phil Womble, director of the Applied Physics Institute. In addition, WKU's patents and copyrights attorney, Laura Hagan of Kerrick, Grise, and Stivers, is a TTCC member.

The base document behind the TTCC is the WKU Intellectual Property Policy. The revised policy was recently approved by the Board of Regents. It can be found on the Web at http://www.wku.edu/Dept/Support/SponsPrg/grants/pols/ip_main.htm.



The Mobile Mercury Monitoring Laboratory, which monitors mercury emissions at regional coal-burning power plants, is a product of the Western Kentucky University Combustion Laboratory.

department or unit, and the WKURF. Several other properties have been disclosed, including a student property.

Funding may be available to support faculty, staff, and student creations. Depending on the completeness of the disclosure, the TTCC can make a decision within a month. The TTCC can advise about and fund copyright matters such as registering copyrights with the U.S. Patents and Copyrights Office.

Concurrent objectives of the TTCC are designed to market our intellectual property. The TTCC creates policies,