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On the Cover: The photo entitled "Variagated Fritillary" was taken by Dan Nelson from Pascagoula, MS (for more of his breath taking photographs visit his website at <http://www.riversedgephotography.com>). See page 198 for more information about the author from this wife Rhonda. Libby Hartfield from the Mississippi Museum of Natural Sciences has helped in identifying the flower and butterfly. She says the flower has many common names such as Plains coreopsis, golden tickseed, and calliopsis. The butterfly is a Variagated Fritillary...*Eutopia claudia*. The Academy would like to recognize Kyle Cunningham and Michael Schenk for all of their outstanding efforts in designing the covers for the Journal. Michael Schenk is the Director of Biomedical Illustration and Kyle is one of his top Medical Illustrators. They are located the Department of Biomedical Illustration Services at the University of Mississippi Medical Center. Special thanks to Dan McInnis, Manager of the Printing Department at the University of Mississippi Medical Center for all his extra effort in giving the Journal a new look.

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Corrections To Denitrification Measurements In Ochs And Milburn (2003), With A Revised View Of The Importance Of Denitrification To N-Loss From Agricultural Soils Of The Mississippi Delta.

**Clifford A. Ochs
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University of Mississippi**

In our evaluation of the effects of wintertime flooding on nitrogen and phosphorus cycling in soils from the Mississippi Delta (Ochs and Milburn 2003), we report data for denitrification rates in flooded and non-flooded agricultural soil cores. The results for denitrification shown in Figure 4a and 4b were reported in units of $\text{mg N}_2\text{O-N ha}^{-1} \text{ day}^{-1}$. This was an error. The correct units for denitrification in this figure should be $\text{grams N}_2\text{O-N ha}^{-1} \text{ day}^{-1}$ (see Figure 4a and 4b revised).

With this correction, we re-evaluate the importance of denitrification in this study. In Table 2 of the original study (Ochs and Milburn 2003) we provided estimates for the percent losses of nitrogen, relative to ambient total N pools, in cotton and soybean fields over the course of a 90-day winter period. In Table 2-revised, we correct these data. Applying the corrected measurements, at the maximum values of denitrification measured prior to soil drainage ($12\text{--}21 \text{ g N ha}^{-1} \text{ day}^{-1}$, depending on crop type and flooding regime), percentage losses of soil N, over a 90-day period, would be between 0.09 – 0.16%.

Our corrected values for denitrification help, but do not fully, explain the observed reductions in $\text{NO}_3\text{-N}$ in both flooded and non-flooded soybean soils, as shown in Fig. 2b of Ochs and Milburn (2003). Losses of $\text{NO}_3\text{-N}$ from flooded soils over the course of our 57-day experiment were $6.22 \text{ mg kg soil}^{-1}$ from cotton field soils, and $3.9 \text{ mg kg soil}^{-1}$ in soybean soils.

Applying our corrected average values of denitrification ($6 \text{ g N ha}^{-1} \text{ day}^{-1}$ in cotton field soils, $7\text{--}12 \text{ g N ha}^{-1} \text{ day}^{-1}$ in soybean soils depending on flooding regime), losses of $0.34 \text{ kg N ha}^{-1}$ and $0.40\text{--}0.68 \text{ kg N ha}^{-1}$ can be attributed to denitrification in cotton and soybean field soils, respectively, during this period. For a soil depth of 10 cm (average soil dry weight = $1.3 \times 10^6 \text{ kg ha}^{-1}$), these denitrification rates account for 4% of the observed decline of $\text{NO}_3\text{-N}$ in cotton soils and 8-13% of the observed decline in the soybean field soils. Clearly, although denitrification can't explain the magnitude of the decline in $\text{NO}_3\text{-N}$ in these soils, it is not an insignificant process.

Perhaps most importantly, is the role that denitrification may play in removing $\text{NO}_3\text{-N}$ that might otherwise be lost from the fields in runoff. This point was not fully considered in Ochs and Milburn (2003). At the average daily rates of denitrification we observed (see above), when extended over a 90-day winter period, losses of N by denitrification from these soils would exceed 0.5 kg N ha^{-1} for cotton field soils, and between $0.6\text{--}1.1 \text{ kg N ha}^{-1}$ for soybean field soils. Extrapolated over thousands of hectares, these results indicate soil N removal by denitrification on the order of hundreds or thousands of kilograms, even during winter. Actual rates of loss would be tightly correlated with temperature, and labile C content (Ochs and Milburn 2003).

Denitrification in removal of N from agricultural soils in the Mississippi Delta can be appreciable (c.f. Zwart et al.), but it

remains unclear how important it is as a mechanism of N-loss compared to erosion of soil particles, or runoff of soluble N. McDowell et al. (1989), for instance, report losses of N in solution and in soil particles from cotton soils near Clarksdale, MS exceeding 42 kg ha⁻¹ year⁻¹. The primary purpose of our research (Ochs and Milburn 2003) was to investigate extended seasonal flooding as a mechanism to reduce N losses both by reducing soil erosion and by promoting denitrification in flooded, temporarily anoxic soils. Although we did not discern differences in denitrification between continually flooded and non-flooded (but occasionally wetted) soils, it is evident from our results, and from Green (1998), that controlled seasonal flooding can greatly reduce erosional losses of soil particles and associated nutrients. We encourage this practice to be studied further.

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Table 2 - revised. Percent losses of nitrogen and carbon by denitrification and respiration relative to initial concentrations of total nitrogen and organic carbon in cotton (CT) and soybean (SOY) soils.

<i>Soil</i>	<i>TN^{a,b}</i> kg ha ⁻¹	<i>C^{a,b}</i> kg ha ⁻¹	<i>Denitrification^c</i> kg ha ⁻¹ 90 d ⁻¹	<i>Respiration^c</i> kg ha ⁻¹ 90 d ⁻¹	<i>%Denitrif^d</i>	<i>%Resp^d</i>
<i>CT-NF</i>	<i>1220</i>	<i>15300</i>	<i>1.17</i>	<i>17.4</i>	<i>0.09</i>	<i>0.11</i>
<i>CT-F</i>	<i>1220</i>	<i>14800</i>	<i>1.47</i>	<i>27.0</i>	<i>0.12</i>	<i>0.18</i>
SOY-NF	1220	15400	1.93	20.4	0.15	0.13
SOY-F	1250	14900	1.56	43.8	0.12	0.29

^aPre-flooding means of total N and organic C concentrations in soils.

^bSoil weight (dry) is 1.3 X 10⁶ kg ha⁻¹ for a soil depth of 10 cm.

^cMaximum mean values for the flooded period (all are from day 57).

^dPercent values are relative to pre-flooding concentrations in soils.

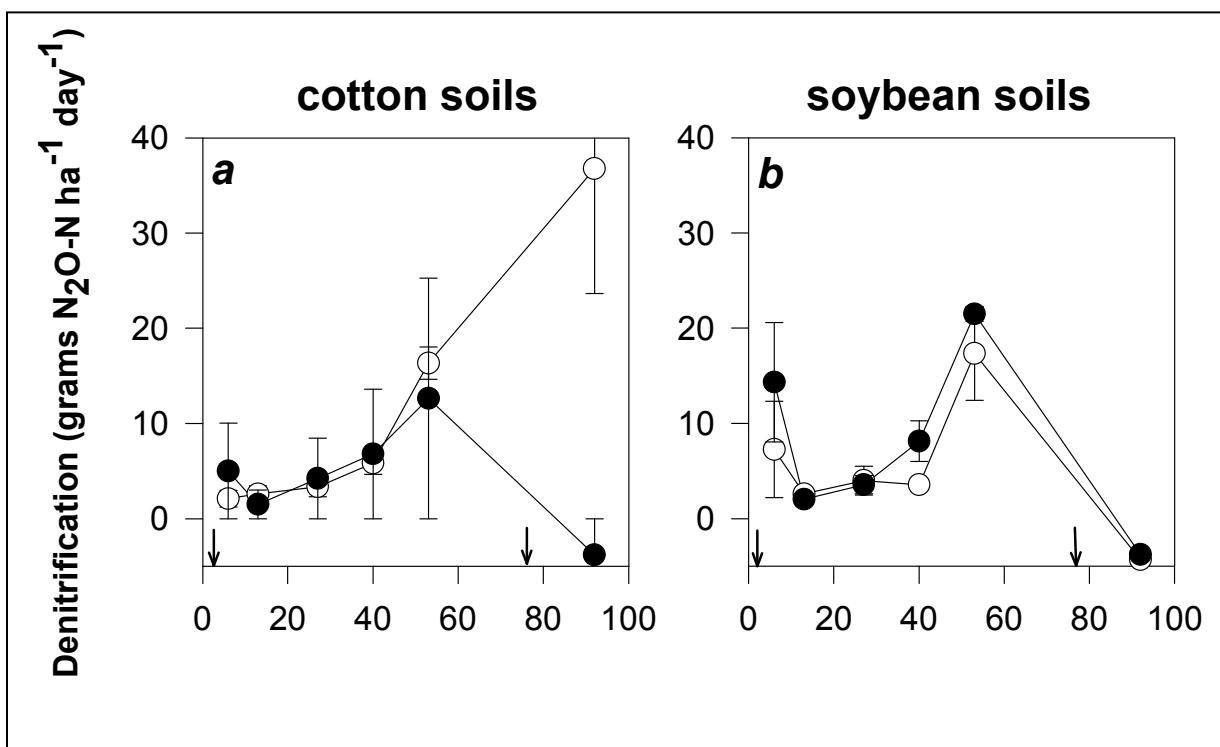


Figure 4 - revised. Rates of denitrification by time of flooded (○) and non-flooded (●) soils from cotton and soybean fields. Arrows indicate the first day of flooding (day 1) and the date of drainage (day 77). Error bars indicate the standard error ($n = 3$). (a) Denitrification in cotton soils; (b) Denitrification in soybean soils.

The Eastern Ant Cricket, *Myrmecophilus Pergandei* Bruner (Orthoptera: Myrmecophilidae), Reported From Mississippi, U. S. A.

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Four species of *Myrmecophilus* (Orthoptera: Myrmecophilidae) occur in the United States: *Myrmecophilus manni* Schimmer and *M. oregonensis* Bruner, both found west of the Rocky Mountains; *M. nebrascensis* Lugger, with a midwestern to southwestern distribution including Oklahoma and Texas; and *M. pergandei* Bruner, found in eastern United States (Capinera *et al.*, 2004). The known range of *M. pergandei* is given as eastern North American north to Illinois and Maryland (Blatchley, 1920; Capinera *et al.*, 2004) and in a range map provided by Capinera *et al.* (2004), much of eastern North America is shaded. However, this distribution is

somewhat misleading, as *M. pergandei* has not been reported previously from Alabama, Louisiana, or Mississippi.

Females in the genus *Myrmecophilus* can be recognized by their extremely small size (usually < 4.7 mm in overall length), convex and ovate body, lack of wings, and their greatly expanded hind femora. Males are similar to females but are more slender and smaller (Bruner, 1884). *Myrmecophilus pergandei* (Figure 1) can be separated from *M. nebrascensis*, its geographical neighbor, by the number of spines on the dorso-internal margin of the hind tibia, with *M. pergandei* having four and *M. nebrascensis* having only three (Hebard, 1920).

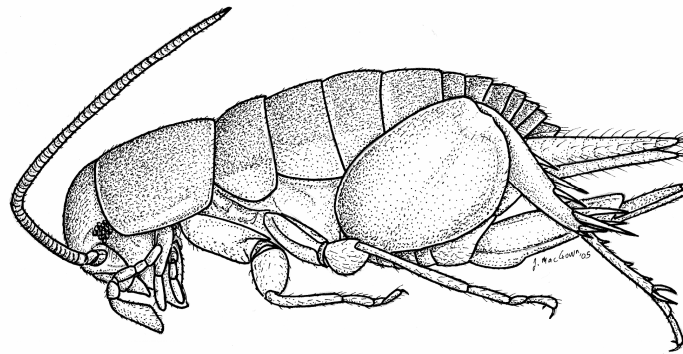


Figure 1. The Eastern ant cricket, *Myrmecophilus pergandei* Bruner, lateral view of a female. Scale bar = 3.0 mm.

North American *Myrmecophilus* species are inquilines that inhabit the nests of many ant species (Henderson and Akre, 1986). *Myrmecophilus pergandei* has been reported to be associated with various ant species including *Lasius umbratus* (Nylander), *Camponotus castaneus* (Latreille), *C. chromaiodes* Bolton, *C. herculeanus* L., *C. novoborocensis* Fitch, *Formica obscuriventris* Mayr, *F. pallidefulva* Latreille, *F. subsericea* Say, *Aphaenogaster treatae* Forel, and *Crematogaster lineolata* (Say) (Hebard, 1920), many of which occur in Mississippi. *Myrmecophilus* species are known to strigilate their hosts, supposedly to gain nourishment from oily secretions of the body (Wheeler, 1900), and also to engage their hosts in trophallaxis (Henderson and Akre, 1986). Henderson and Akre (1986), who reported on the biology of *M. manni* from the western United States, stated that the host ants were always aggressive toward the crickets, unless they were more than 4 mm away. However, when crickets were attacked they could usually escape by means of their speed and jumping ability. Despite the truculent nature of the ants, the crickets could approach an ant, usually from the rear, while the ant was engaged in grooming or trophallaxis with another conspecific ant. While the ant was busy in one of these activities, the cricket used its antennae to contact the ant, mimicking mutual grooming and trophallaxis behavior. If the ant did not act aggressively, the cricket typically moved closer to strigilate or take part in trophallaxis with the ant (Henderson and Akre, 1986).

Four specimens of *M. pergandei* have been collected in Mississippi. A single adult female was collected in Oktibbeha County at Noxubee National Wildlife Refuge on 17 July 1981 by R. L. Brown. No habitat or biological information is available for this specimen. Another single adult female was collected in Marshall County at Wall Doxey

State Park, 34°39'54"N 89°27'58"W, on 23 June 2005 by J. A. MacGown. This specimen was collected in a Berlese litter sample from the base of a large *Pinus taeda* L. (Pinaceae). It is not known what ants were used as hosts, but only one species of ant, *Solenopsis* sp. cf. *molesta* (Say), was found in the sample with the cricket. One specimen of *M. pergandei*, a nymph, was collected in Wilkinson County at Clark Creek Natural Area, 31°04'17"N 91°30'41"W, on 7 July 2005 by J. G. Hill and J. A. MacGown. This specimen was collected in leaf litter in a mixed forest. One additional adult female was collected by Lucas Majure in Newton County 2 miles southeast of Dacatur at 32°26'05"N 89°04'29"W on 4 February 2006 in a rotting *Pinus taeda* L. log in a mixed pine-deciduous forest. A colony of an undetermined species of ant was present in the log, but no specimens were collected. These are the first reported collections of Myrmecophilidae in Mississippi.

ACKNOWLEDGMENTS

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Field Observations of *Pheidole pilifera* (Roger) and *Paratrechina arenivaga* (Wheeler) (Hymenoptera: Formicidae) In A Black Belt Prairie Remnant In Mississippi

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ABSTRACT

Observations of foraging behavior, a preference for *Panicum virgatum* seeds, and nesting site information of *Pheidole pilifera* in a Black Belt Prairie remnant in Mississippi are presented. Aggressive interactions of *Paratrechina arenivaga* and *P. pilifera* involving insect carcasses are also noted.

INTRODUCTION

Pheidole pilifera (Roger), like most *Pheidole* species, has a dimorphic worker caste. The small minor workers do most of the foraging, whereas the larger major workers primarily dehusk seeds and defend the colony. The minors of *P. pilifera* are dark reddish brown, approximately 1-1.50 mm long with a head width of about 0.54 mm and head length of about 0.60 mm, whereas the majors are a lighter reddish brown, approximately 3-3.50 mm long and have a strikingly large head with a width of about 1.60 mm and a head length of about 1.72 mm (Wilson, 2003). *Pheidole pilifera* is reported to primarily be a seed harvester and to excavate crater nests (Smith, 1924; Gregg, 1963; Smith, 1979; Wilson, 2003). It is the most geographically widespread species of Nearctic *Pheidole*. This species can be found throughout the United States, with the exception of Florida, southern Texas and the Pacific Northwest (Wilson, 2003). In Colorado, Gregg (1963) found *P. pilifera* nesting from 1,524 to 2,591 m above sea level in gravel, alluvium, clay, loam, and under rocks. Whereas in south central Ohio, Wesson and Wesson (1940) found it to be

very common in both dry and moist fields and meadows, with one colony found in the woods, and in the southeastern portion of its range, *P. pilifera* is known to inhabit open, grassy areas, especially those with sandy soils containing little clay (Wilson, 2003 citing S. Cover pers. comm.). In his list of ants of Mississippi, M. R. Smith (1924) considered this species to be uncommon in Mississippi, nesting in pastures or grassy fields, and to have a more northern distribution. Surveys for ants throughout Mississippi from 2002 to 2005 by the Mississippi Entomological Museum (MEM), this species was found only in Black Belt Prairie remnants.

Paratrechina arenivaga (Wheeler) is a yellow formicine ant measuring about 1.92-2.75 mm in total length. This species has been reported to create small crater nests almost exclusively in highly drained sands of low nutrient content with well spaced vegetation (with the exception of one collection from loess bluffs along the Missouri River in Iowa) and to forage strictly nocturnally on honeydew and insect carcasses (Smith, 1928; Trager, 1984). Populations of *P. arenivaga* are usually present only where its habitat is in a relatively natural condition, although this species often inhabits the more disturbed

areas of it, such as those swept by fire, fire lanes, foot paths, primitive road beds, dune blowouts, and openings between vegetation (Trager, 1984). This species can be found from New Jersey to Nebraska and south to Florida and eastern Texas but is apparently absent from the Appalachian region (Trager, 1984).

OBSERVATIONS

Observations of these *P. pilifera* and *P. arenivaga* were made at a Black Belt Prairie remnant in the Tombigbee National Forest in Chickasaw County, Mississippi (33°55'35"N 88°51'13"W) on 15 November 2004. During the day of observation the weather conditions were partly cloudy with a temperature of approximately 24.4 °C; there had been windy thunderstorms the previous day. The soil texture from the site was analyzed by the Mississippi State University Soil Testing Laboratory and was classified as loam, being a mixture containing 7.5% clay, 42.25% silt, and 50.25% sand. The soil had a pH of 8.0.

From approximately 2:30 to 5:30 P.M., several foraging minor workers of *P. pilifera* were followed back to their colony. The only noticeable evidence of the nest site was a small hole in the ground, approximately 3 mm in diameter. The ground cover surrounding the colony was visually estimated to be 20%, and was comprised of several small clumps of *Schizachyrium scoparium* (Michx.) (Poaceae) that were 15 cm tall. Foraging minors exited the colony and either headed north or west. The group of minors that went due west were followed for further observation. After approximately 1.5 m, these minors split up with some individuals going north and others continuing west. Again, the minors that headed west were followed, and after another two meters this group of minors branched into individuals

that appeared to be searching randomly. One of these workers was followed for 10 meters away from the nest, and then visual contact with the ant was lost. All of the returning workers appeared to be carrying the seeds of *Panicum virgatum* L. (Poaceae). No *P. pilifera* were found on the seed heads of *P. virgatum* in the immediate foraging area or in spider webs in several of those seed heads. It was not clear where the minors were finding the seeds, but they may have been taking advantage of the previous day's storm, which probably knocked down many seeds, negating the need for the ants to go up into the grass to harvest the seeds.

A small feeding trial was made by placing piles of seeds from various species of plants from the surrounding area along the foraging trail, starting 20 cm away from the colony entrance. Seeds were placed in the following order heading away from the colony: *Ratibida pinnata* (Vent) (Asteraceae), *Erigeron* sp. (Asteraceae), *Aster patens* Ait. (Asteraceae), *Liatris squarrosa* (L.) (Asteraceae), *Schizachyrium scoparium*, *Sorghastrum nutans* (L.) (Poaceae), *Silphium laciniatum* (L.) (Asteraceae), and *Panicum virgatum*. Minor workers quickly selected the *P. virgatum* seeds from the pile and carried them into the nest. The other seeds were ignored except for four *S. nutans* seeds and one *S. scoparium* seed which were carried from the pile but, with the exception of one *S. nutans* seed, were abandoned after several minutes and not taken into the colony. This was possibly due to the larger size of the *S. scoparium* and *S. nutans* seeds, as the minors appeared to have trouble transporting them. During this time several workers of *Paratrechina arenivaga* were observed moving freely through the *P. pilifera* foraging trail and around the nest entrance.

Approximately one hour after the seeds were presented, a dead mosquito (Diptera: Culicidae) was placed between the

S. nutans and *S. scoparium* seed piles. Several *P. pilifera* minors began to transport the dead insect as a group and managed to move it about eight cm before a single *P. arenivaga* worker quickly took it from them. After this, whenever a *P. pilifera* minor, usually carrying a seed, approached the mosquito, which was still on the *P. pilifera* trail, the *P. arenivaga* worker attacked the *P. pilifera* minors. The *P. arenivaga* worker pounced on top of individual *P. pilifera* minor, faced the rear of the body, and then held it down for several seconds while curling its gaster under, presumably spraying the *P. pilifera* in the face with formic acid. Upon release, the *P. pilifera* minors staggered away while leaving their seeds behind. Next, a hind femur of *Amblytropidia mysteca* (Saussure) (Orthoptera: Acrididae) was placed adjacent to the entrance of the *P. pilifera* colony. A major *P. pilifera* worker, the first one seen during this observation, quickly picked up the leg and dragged it into the colony. After the leg was taken into the nest, the influx of *P. virgatum* seeds began to fill up the nest entrance, until a small pile had accumulated on top of it. This suggests that the grasshopper leg might have become stuck at some point or the major was progressing into the colony slower than the minors were bringing in seeds. Six *P. arenivaga* workers were observed moving rapidly around the *P. pilifera* colony entrance. They began removing the accumulation of seeds from the nest entrance, while continuously warding off the addition of new seeds that were being added by the *P. pilifera* minors. After they cleared the entrance, the *P. arenivaga* workers entered the *P. pilifera* nest. After about thirty minutes the *P. arenivaga* were visible again and they were attempting to remove the grasshopper leg from the nest. Meanwhile, the returning *P. pilifera* minors would either drop their seeds into, or just outside of the nest entrance,

which seemingly made it more difficult for the *P. arenivaga* to remove the grasshopper leg. It was not clear whether or not the *P. pilifera* minor was still attempting to pull the leg into the nest, but based on the movements of the *P. arenivaga* workers it seemed to be the case. These observations went on for about one hour and thirty minutes with the *P. arenivaga* pulling the leg near the entrance whereupon the leg would disappear back down into the nest, apparently being pulled by workers of *P. pilifera*. After thirty minutes and with darkness approaching, the grasshopper leg was removed with forceps from the nest. The *P. arenivaga* left the area soon thereafter.

DISCUSSION

These observations present several interesting aspects of the behavior of these two species. During their encounter, the *P. pilifera* workers never showed any aggressive action towards the *P. arenivaga*. The strong preference of *P. pilifera* for *P. virgatum* seeds should be of interest to land managers that try to restore or manage Black Belt prairies as *P. pilifera* seems to be an “indicator” of undisturbed or a healthy prairie. (J.G. Hill pers. obs.) The lack of a crater surrounding the nest entrance of the *P. pilifera* colony differed from other authors’ accounts of this species (Smith, 1924; Gregg, 1963; Smith, 1979; Wilson, 2003). Also, the diurnal activity and foraging of *P. arenivaga* is contrary to Trager’s (1984) assertion that it is strictly a nocturnal species. Voucher specimens, with the identity of *P. arenivaga* verified by J. MacGown, have been deposited in the MEM collection.

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Health Policies Addressing America's Newcomers

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ABSTRACT

US Immigration and Naturalization Services estimates that 77 million illegal immigrants currently live in the country. Lack of health insurance is a major issue facing the immigrant population. Recently, there has been much debate and controversy over immigrant's rights. In the wake of Hurricane Katrina, Mississippi will likely be challenged with an influx of undocumented workers. As the number of undocumented immigrants in the United States increases, health policy issues must be addressed at the local, state and federal levels. The purpose of this article is to explore the socioeconomic impact these undocumented individuals have on our society and discuss health policy issues that may influence their access to health care.

INTRODUCTION

According to U.S. Census Bureau statistics, the number of uninsured in America has reached over 41 million people. This figure is expected to escalate over the next several years to greater than 60 million people. In 2000, there were over 32 million foreign born residents in the United States totaling 11 percent of the population (U.S. Census Bureau, 2004). Data from the Kaiser Family Foundation (2004) indicates that 27 percent of immigrants are in the United States illegally. There are six states that account for the largest populations of immigrants: California was home to almost a third of all immigrants and another 40 percent were from New York, Florida, Texas, Illinois, and New Jersey. Future predictions indicate that immigrants will migrate to other areas of the country and will become more dispersed in populations across the United States. The Hispanic

ethnic group is now considered the largest minority group in the United States surpassing African Americans.

The impact of illegal immigration in Mississippi has considerable social and economic consequences. In 2004, the Census Bureau estimated that Mississippi's population was 2,902,966 (U.S. Census Bureau). According to U.S. Immigration and Naturalization Service, (INS) data, it is estimated that the illegal immigrant population of Mississippi was approximately 8,000 residents in 2000 which was double that of the last previous INS estimate in 1996 (U.S. Immigration and Naturalization Service, 2003). As a result of the Hurricane Katrina, these numbers have likely significantly increased. It is estimated that the annual fiscal costs to Mississippi Taxpayers for emergency medical care, education, and incarceration from illegal or "guest" workers are approximately \$32 million dollars a year. It is projected to

escalate to over \$54 million in 2010 and 94 million in 2020 (U.S. Immigration and Naturalization Service).

There are few articles with reference to health policies and Hispanic immigrants. Barriers to access of care that are common among this minority group include language barriers, high rates of uninsurance, and low income levels (Bell, 2004; Smith, 2001). These barriers leave the Hispanic population in need of new health policies that will ensure the wellbeing of the individuals and the communities in which they live. This literature synthesis will examine the social, economic, ethical, legal and political factors surrounding undocumented Hispanic immigrants and their health care disparities.

Economic Factors

The effects of uninsurance are well documented and have been shown to produce profound negative outcomes for individuals, communities, and populations. Hispanic immigrants are a large and growing segment of American society and are considered disproportionately low income and uninsured. Hispanics continue to be the lowest insured of any ethnic group (Tieman, 2004). Recent immigrants have the highest uninsurance rate at 46 percent (Institutes of Medicine [IOM], 2001). Increasingly, hospitals across the nation are seeing similarly increasing numbers in uncompensated care for uninsured immigrants. The money from this uncompensated care comes from the government, philanthropic sources, as well as by funds generated from insured patients. The economic effects on communities with relatively high numbers of uninsured individuals ultimately results in raising taxes, higher costs for health services, and loss of philanthropic dollars for other purposes. Thus, health policies at the state and federal level addressing healthcare access of uninsured immigrants will have significant economic effects on American

communities.

In 1996 the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) restricted federal and state benefits available to immigrants. PRWORA legislation excludes immigrants arriving in the United States after August 1996 from receiving benefits for the first five years upon arriving in the United States. Although PRWORA's provisions were intended to allow families to maintain health coverage after cash benefits ended, separate enrollment processes and confusion led to reduced enrollment in Medicaid programs (Smith, 2001). Changes in legislation from PRWORA have resulted in more difficulty for immigrants to obtain services. Moreover, states that wish to provide benefits to undocumented illegals must pass specific laws to do so (Berk, Schur, Chaves & Frankel, 2000). Most uninsured adults, 85%, either work or live in families where someone works at least part time (Thrall & Scalise, 2002). The high uninsured rate for Hispanics reflects the fact that Hispanic wage earners are much less likely than average to be offered employment based coverage. Minority and immigrant populations work at jobs that do not offer health insurance and have lower wage jobs that prevent them from purchasing insurance (Thrall & Scalise, 2002). Adults with lower incomes and level of education use fewer health services, are more likely to be uninsured, and have worse health outcomes than do better educated and higher income adults (IOM, 2002).

It has been argued that health and social services are an incentive for immigration. It has been proposed that if services were eliminated, fewer immigrants would come to the United States, thereby removing the burden imposed on the health care delivery system. Promoting legislation that would deny access services to undocumented immigrants, policymakers

may hope to decrease immigration. However, according to Berk et al. (2000) excluding immigrants from government health care services is unlikely to effect immigration. In a study of immigrants who applied for legal status under the 1986 Immigration Reform and Control Act, ninety four percent (94%) of respondents cited economic reasons for immigration. Similarly, Berk et al. found that social services did not influence Hispanic immigrants' intentions to remain in the United States. It appears that only substantial changes in economic opportunity on either side of the border will influence the flow of persons crossing to the United States.

Ethical Factors

Under current policy, access to emergency services is afforded to all persons who are within the United States borders. The United States does not guarantee its citizens or residents access to personal healthcare services beyond treatment to stabilize an emergency condition and care at childbirth. Minimum national standards of access to health services was established by the federal Emergency Medical Treatment and Active Labor Act (EMTALA), a provision of the Omnibus Budget Reconciliation Act of 1986. Medical screening, stabilization of an acute or life threatening condition and transfer are guaranteed universally by the EMTALA act (Bilchik, 2001). The promise of EMTALA that an uninsured person will at least be seen and medically stabilized, and the generally high quality of acute care and it's around the clock accessibility, make the hospital emergency department a logical choice for uninsured persons. However, uninsured persons with traumatic injuries are less likely to be admitted to the hospital, receive fewer services when admitted, and are more likely to die than insured trauma victims (IOM, 2002a). The gap in emergency care is

particularly relevant because current federal policy allows noncitizen immigrants, including undocumented illegals to receive emergency Medicaid services, even if they are ineligible for full coverage. Findings from Berk et al. suggest that current policies are not effective and that states could do more to facilitate emergency Medicaid access for immigrants

How would providing care to the uninsured beyond emergency care improve their outcomes: 1) the uninsured would use more health care services; 2) the uninsured would receive more appropriate preventative care; and 3) the uninsured would better manage their chronic conditions? Most importantly if adults who now lack health insurance were to be insured on a stable and ongoing basis, their health status would likely be better than it would be without health insurance and their risk of dying prematurely could be reduced (IOM, 2002b). Health insurance is associated with better health outcomes for adults and with their receipt of appropriate care across a range of preventative, chronic, and acute care services. Adults without health insurance coverage die sooner and experience greater declines in health status over time than do adults with continuous coverage. Population groups that most often lack stable health insurance coverage and that have worse health status include racial and ethnic groups and lower income adults. These groups of people would benefit most from increased health insurance coverage. Increased coverage would likely reduce some of the racial and ethnic disparities in the utilization of appropriate health care services and may also reduce disparities in morbidity and mortality among ethnic groups.

Legal Factors

The legal duty of hospital Emergency Department's and trauma units to screen and medically stabilize all patients

regardless of the ability to pay for services is one source of financial and legal liability for hospitals. A high uninsured rate over time or an increase in the number of uninsured patients is likely to reduce a hospital's financial margin or even result in losses. A significant source of stress on regional trauma centers is related to the high proportion of uninsured patients that they serve. In response hospitals may decline to open a trauma center or may decide to close an existing trauma center in response to the financial stress and legal liabilities associated with treating trauma victims (Berk, et al.; Ku & Matani). The Medicare Modernization Act of 2003 included a new reimbursement program for the cost of emergency health services for illegal immigrants. Section 1011 reimburses health care providers up to \$250 million per year for years 2005-2008 and the highest amounts will be forwarded to the states with the most immigrants (Centers for Medicare and Medicaid Services, 2003).

The Civil Rights Act of 1964 prohibits groups and individuals receiving federal funds from discriminating based on national origin. Non-English speaking people who are seeing providers that receive federal funds such as Medicare and Medicaid must be provided access to an interpreter. Lawsuits have been filed over care administered to non-English speaking patients without an interpreter. Legally, medical treatment rendered to non-English speaking patients must be explained by an interpreter. With a growing population of Spanish speaking people in the United States, increased burden is placed on the healthcare facility to provide an interpreter for this patient population. A facility may be providing uncompensated care in addition to paying for an interpreter. In many cases, the cost of providing an interpreter may be higher than the reimbursement rate for the healthcare

provider (Kaiser Family Foundation, 2003; Bell).

Social factors

The facilities of states, counties, and municipalities are, often by default, providers of last resort of patients without the financial means to pay for their own care. Local agencies are more likely than state programs to be involved in the delivery of health services. For newcomers, difficulties with access to care include the pressures of diminishing state care budgets, infrastructure demands, and funding uncertainties that haunt policymakers (Smith). Without a source of public or private funds to cover the costs of uncompensated care for uninsured immigrants, hospitals may trim the hours and availability of services or close some or all of their operations entirely, leaving all residents to seek services elsewhere. Reimbursement for uncompensated care is provided differently across the nation. Some states reimburse local health departments, public hospitals, or clinics for the direct provision of care; some reimburse all hospitals in the state for a percentage of their expenditures; some finance state and county catastrophic care funds; and others subsidize packages of services that resemble an insurance plan (IOM, 2003). Some states explicitly assign responsibility for this role in their constitutions or by statute, while others acknowledge the obligation implicitly through annual budgetary appropriations for personal health care services. Although regulations about immigration are federal policy issues, health policies regarding payment for care afforded to uninsured immigrants are at the state and local level.

How does uninsurance affect the health services in the community? How does uninsurance within a community affect the availability of local health services? Any community resident may experience the results of decisions made about care for

those without health insurance when they encounter the local public health infrastructure. Although insured and uninsured members of a community are likely to be adversely affected, members of medically underserved groups are particularly likely to suffer. These groups have fewer options for obtaining health services except for emergency departments who are required to see patients regardless of insurance (IOM, 2003). A high or rising uninsured rate within a community may result in allocation of public funds and staff resources away from public health programs that serve all members of the community and toward direct services delivery urgently needed by low income uninsured persons. The redeployment of public health agency resources away from population health activities to provide personal health care services to uninsured residents, along with the general underutilization of and limited access to care by uninsured members of the community can fuel the spread of disease and undermine communicable disease control efforts, prevention activities, such as immunizations programs. It is both mistaken and dangerous to assume that uninsurance affects only those who are uninsured. Further research is needed to adopt health policies that will address uninsurance due to its affects on all of the community population.

Political factors

Hispanics who identified themselves as noncitizens are more than twice as likely to go without health insurance (IOM, 2001). Being a noncitizen adult or the child of a noncitizen parent reduces access to ambulatory medical care and emergency room care, after factors such as health status, income, and race/ethnicity are controlled for (Ku & Matani, 2001). Noncitizen immigrants have large gaps in their health insurance coverage and access to health care, even when children are citizens

(Bell, 2004). A review of the literature by Castle, Timbie, Sendersky, Curtis & Feather (2003), on the interaction of race, ethnicity, and socioeconomic status with health insurance, concluded that health insurance makes a positive contribution to the likelihood of receiving appropriate screening services, although racial and ethnic disparities persist independent of health insurance status. Approximately one-half of uninsured adults are non-Hispanic whites, more than a quarter are Hispanic and one out of six are African American. Almost 2/3 of uninsured fall below the federal poverty level.

From a policy perspective, immigrants' access and coverage disparities stem in part from specific policy changes that treat new legal immigrants differently from both existing immigrants and citizens when determining eligibility for Medicaid and public benefits. Even for immigrants who remain eligible for Medicaid benefits, fear and confusion create barriers to enrollment for fear and concern about becoming a public charge and thus ineligible for citizenship. The most recent immigration policy, proposed in January 2004 by President George W. Bush, allows more freely open borders for temporary workers in the United States. However, the healthcare of these new members of American society is not specified at the state level by the administration. Current policy denies government healthcare coverage benefits for the first five years immigrants are in the country. The jobs that the temporary workers may fill are usually low paying and are without insurance benefits. There may be advantages to having immigrants fill jobs that are unwanted by citizens of the United States but when they become ill or are in an accident the burden of care is placed on the local communities. With a prediction for even greater numbers of immigrants in more diverse populations

across the nation, it is time for policy decisions to be made to account for the healthcare of immigrants. An increase in immigration to an area can raise the healthcare needs and costs to all in the community. Broad based health insurance strategies across the entire uninsured population would be more likely to produce benefits than would healthcare coverage provided only for trauma or Emergency care.

SUMMARY

The background of issues related to healthcare access has identified social, economical, ethical, legal and political aspects related to providing care for undocumented Hispanic immigrants. Stakeholders that would be affected by new health policies could be ethnic immigrants of any origin, members of communities where they reside and healthcare providers in those communities. Healthcare providers could benefit from health policies to address immigrants because they are currently treating many immigrants with no reimbursement resulting in economic hardship. Immigrants may benefit from health policies because it may improve their access to healthcare and diminish disparities in care to minorities. Communities would benefit from health policies because the individuals of the community may be in better health and may be more productive community members. Other stakeholders may include large corporations who are employing an increasing numbers of immigrants. Political policies may be needed to make them accountable for the provision health insurance coverage as part of their employment agreement obligations. Immigrants contribute to our American society in a number of ways. Because cultural diversity has been invaluable for the growth of this country, health care providers must approach newcomers with great

respect and encouragement-versus disgust and authoritarianism (Smith, 2001). The nation was founded on beliefs of opportunity for all members. However, the current health policies are lacking in number and effectiveness because Hispanics immigrants are the most uninsured members of American society with poor health outcomes. If America continues to grow with large numbers of immigrants then we must research and begin to plan for the future growth.

Mississippi has an enormous stake in the provision of healthcare for Hispanic immigrants. In the wake of Hurricane Katrina and the rebuilding of large coastal communities, the influx of illegal and migrant workers has increased exponentially. The current price tag for this disaster in health care cost is projected to reach over \$54 million within the next four years.

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**2006 Abstracts presented at
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**Plate Fixation of Unstable Distal
Clavicle Fractures**

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Material and Methods

From 10/2003 to 11/2004, 10 patients with unstable distal clavicle fractures, classified as Neer Type II were identified. Seven represented acute fractures and 3 were non-unions from failed conservative management. They were treated with open reduction and internal fixation of the fracture using an anatomically-contoured, low-profile distal clavicle plate and coracoclavicular ligament augmentation with a coracoclavicular cerclage. Six fractures initially occurred via MVC and 4 via a direct fall onto the shoulder. Average age was 45 years with a range from 19 to 70. They were all examined retrospectively for healing, return to activity, and complications – specifically hardware prominence. This

paper represents, to our knowledge, the largest series of plate fixation of unstable distal clavicle fractures.

Results

All patients healed with full range of motion and were able to return to prior activity or work at 2 months. One patient complained of tenderness around the scar (not placed over the plate) and one patient with preexisting shoulder pain had plate removal at the time of arthroscopy for impingement. There were no major complications.

Conclusion

Open reduction and internal fixation with an anatomically-contoured, low-profile distal clavicle plate with coracoclavicular cerclage is a reliable method for treatment of unstable Neer Type II distal clavicle fractures. Patients were able to begin early rehabilitation and return to work and normal activities earlier and more reliably than via non-operative treatment. In our series only one patient required hardware removal for irritation about the plate, but this is less than many other series using K-wires and screws.

**Morbid Obesity: Is Operative Treatment of
Displaced
Acetabular Fractures Worth the Risk?**

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PURPOSE: Displaced acetabular fractures require operative intervention for optimal results. Obesity and morbid obesity is becoming more prevalent. Morbid obesity is defined as a body-mass index (BMI) ≥ 40 . The purpose of this investigation is to

evaluate the early results of operative treatment of acetabular fractures in morbidly obese patients.

METHODS: A prospectively gathered database demonstrated 349 patients who underwent ORIF for acetabular fractures over a 60 month period. Of those patients, 39 were morbidly obese. Patient weights were self reported. There were 15 posterior wall (OTA 62-A1), 10 transverse/posterior wall (OTA 62-B1), 5 T-type (OTA 62-B2), 3 transverse (OTA 62-B1), 3 anterior column/posterior hemi-transverse (OTA 62-B3), 1 anterior column (OTA 62-A3), 1 posterior column/posterior wall (OTA 62-A2), and 1 both column (OTA 62-C3) fractures. Early results of morbidly obese patients (Group 1) were reviewed. Perioperative complications were compared to patients with BMI < 40 (Group 2). Factors evaluated were: estimated blood loss, operative time, length of hospital stay, and overall complication rate (as defined by wound complications or heterotopic ossification requiring subsequent surgery, failure of fixation, nerve palsy, death).

RESULTS: Follow up ranged from 6-48 months. Fracture reductions were perfect in 23, imperfect in 10, and poor in 6. Fixation failure was noted in 9 patients and typically associated with comminuted posterior wall fractures. Eight patients developed deep infections necessitating debridements. Nine patients required secondary surgery for wound healing problems. Of those, 6 required one additional surgery, three required 2, two required 3, one required 5, and one required 12 additional surgeries. Six patients proceeded to THA and two of those required revisions.

The average EBL was 903cc in group 1 versus 630cc in group 2 ($p < 0.044$). Operative time averaged 293 minutes in group 1 versus 250 in group 2 ($p < 0.008$).

Hospital stay for group 1 averaged 26 days versus 15 days in group 2 ($p < 0.008$). Complication rate for group 1 was 67% versus 16% in group 2.

CONCLUSION AND SIGNIFICANCE: This data shows that there is a significant increase in estimated blood loss, operative time, and length of hospital stay. Moreover, the risk of complications should be heavily weighed prior to operative intervention.

Technique for Sacroiliac Joint Arthrodesis: Literature Review and Case Reports

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Primary low back pain can result in significant disability and loss of a productive lifestyle. The etiology of this problem can arise from the disc space, facet joint, and soft tissues about the lumbosacral region. One area often overlooked as a potential pain generator, the sacroiliac joint, has been shown to cause primary low back and/or lower extremity pain in up to 15% of patients with low back pain (Maigne, Schwarzer). Most painful conditions in which the sacroiliac joint is the cause of pain can be treated successfully without surgical intervention. The diagnosis of the sacroiliac joint as the cause of pain, requires fluoroscopically guided injections with improvement of symptoms. Occasionally, surgical arthrodesis of the joint is required to alleviate pain and improve patient function. The authors present a technique that can be used for nontraumatic causes of sacroiliac dysfunction which necessitate fusion.

Compression Plating of Midshaft Clavicle Fractures: Short-term Results of the Acumed Precontoured Clavicle Plate

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Purpose of Research

To prospectively study the efficacy of compression plating of midshaft clavicle fractures with the new Acumed precontoured clavicle plating system.

Relevant Background and Rationale for Research

Midshaft clavicle fractures have an excellent healing potential with non-operative treatment; however, certain indications exist for open reduction and internal fixation. In the past, compression plating has been achieved with the use of various plating systems, each with certain drawbacks. Biomechanically, the middle third of the clavicle is subjected to significant axial, bending, and torsional stresses. Previous studies have shown that the optimal plate position to overcome these stresses is the superior surface. Traditionally, the most rigid plating system of reasonable size to fit the bone has been the 3.5 DCP plate. Due to the contour of the superior surface of the clavicle, bending of this plate is challenging for surgeons of all skill levels. Bending a plate of that magnitude is a struggle with any instrumentation.

The Acumed precontoured clavicle plate is a

breakthrough in the evolution of compression plating of the clavicle. The anatomic fit on the superior surface of the clavicle saves operative time and makes reduction maneuvers simpler.

The rigidity of the plate still allows for the significant forces applied to the clavicle to be neutralized during the healing phase, and allows for early motion. No study has been done to evaluate this method of fixation to date.

Experimental design and Methodology

Patients who present to the University of Mississippi Medical Center and other participating Mississippi Orthopedists who meet the appropriate indications for operative treatment will be enrolled in the study. After fixation, patients will be evaluated for follow-up at approximately 1 week, 6 weeks, 3 months and 6 months. After 6 months, the Constant score will be used as an objective measure of patient outcome. Healing and complications will be recorded.

Use of Carbon Dioxide Insufflation for Anterior Thoracoscopic Release and Fusion

Haber Lawrence , Islam Saleem

Purpose: The purpose of this study was to evaluate CO₂ insufflation as an aid to deflate and retract the lung during thoracoscopic anterior release and fusion in the prone position. Dual lumen intubation had been the standard method for this, but adds significant time to the case. Laryngeal trauma is a significant risk. Some feel simple prone positioning eliminates the need for deflation of the lung, but difficulty with lung retraction still exists. The purpose of

this study was to evaluate prone positioning combined with the use of CO₂ insufflation in children undergoing anterior/posterior spinal fusion using thoracoscopy.

Materials and Methods

Eleven patients with idiopathic scoliosis were retrospectively reviewed. All patients underwent anterior thoroscopic release and fusion as part of an anterior/posterior spinal fusion for idiopathic scoliosis. The anterior release was for severe/stiff curves in eight patients and due to skeletal immaturity in three. All cases were done in the prone position. CO₂ insufflation was used on all cases during the thoroscopic procedure to collapse the lung and allow visualization of the spine. Results are compared to a control group treated at our institution by the same surgeons using dual lumen intubation and lateral positioning.

Results: Insufflation was successfully used in all cases. Excellent visualization of the anterior spine was attained. There was no need for dual lumen intubation or retractors. Average curve correction was 81%. Average OR time was 338 (248-435) minutes for the entire anterior and posterior procedure. This compares to 546 (447-646) in our control group using lateral positioning and dual lumen intubations.

Conclusions

CO₂ insufflation is a safe technique to aid in anterior thoroscopic release and fusion. It gives excellent visualization while in the prone position. There were no problems with CO₂ retention or oxygenation. Currently manufactured ports provide a good seal, enabling the surgeon to introduce instruments as needed without losing pressure in the chest. Insufflation dramatically reduced operative times as there is no need for reintubation,

repositioning or retraction. Risks of laryngeal trauma due to a large dual lumen tube are eliminated. In several cases, we released insufflation to compare the results to prone positioning alone. In our opinion, use of insufflation provided superior exposure of the spine compared to prone positioning without insufflation. There were no complications related to the insufflation.

Long Term Outcomes of Atlantaxial Fusion with Transarticular Screw Fixation

McGuire RA, Haber LL, Ferguson CA

Purpose: To evaluate the long term results of atlantoaxial transarticular screw fixation.

Methods: Fifty one patients treated between 1991 and 1998 were previously reviewed at 2 year follow up and found to have good results after atlantoaxial transarticular screw fixation. Five of these were deceased and four were lost to follow up, leaving 42 patients available to review long term results. These patients returned for examination to assess cervical range of motion, neurologic status and clinical function. Radiographs of the spine in flexion and extension were taken to assess fusion status and adjacent segment abnormalities.

Results: Average follow up was 6.5 years (3-10). There were 28 males and 14 females with an average age at fusion of 34.5(18-76). All were treated with transarticular screw fixation with iliac crest bone grafting. The original instability resulted from rheumatoid arthritis in nine, os odontoideum in five, Type II nonunions in eight, unstable bursts in seven, transverse ligament rupture in six, Type III odontoid fractures in five. Two were treated for painful degenerative conditions. Three patients had a neurologic deficit prior to fusion.

In the early (two year) follow up, three patients had malpositioned screws (7%). Two of these patients required repeat surgery for screw repositioning and all healed without sequelae. One patient had a vertebral artery injury (2.4%) without sequelae. There was one guide wire breakage that required a transoral approach in an attempt to retrieve the wire. The fusion rate at 2 years was 100%.

Late follow up revealed two nonunions (4.8%), both in rheumatoid arthritis patients. These were painless and required no further surgery. This gave a 23% (2/9) nonunion rate in the Rheumatoid population. One patient was noted to have screw breakage (2.4%). Mild C2-3 disc space narrowing was seen in four patients (9.5%). There was no evidence of instability and none required further surgery. Range of motion of the cervical spine averaged 40 degrees of flexion, 25 extension and 40 degrees

rotation both ways. None of the patients suffered any changes in their daily activities from restricted motion. Eight (19%) utilized NSAIDS or non-narcotic analgesic for intermittent neck pain.

Conclusion: This study reveals good long term results for atlantoaxial transarticular screw fixation. Nonunion rate was 4.8% and occurred only in the rheumatoid population. Screw breakage was 2.4%. No further surgery was required and these patients were asymptomatic. It is felt that the enhanced biomechanical stability provided by the transarticular construct was the reason for the late finding of the nonunions. Adjacent segment degeneration was 9.5%, but none required further surgical treatment. The decreased range of motion from the fusion does not significantly alter lifestyles in this patient population.

The Arthritis Foundation, MS Chapter supports your commitment to excellence in medical education in Mississippi



**About The Photographer:
By Rhonda Nelson**

My husband has only been a photographer for four years, he is self taught, reads a lot, is on the internet for hours and talks to other photographers. But, Dan has a true passion; you can see this in his work.

Being married to a photographer requires patience and understanding, getting up at 4 a.m. so he can catch the sunlight just right. Now, when my husband says he needs a new camera or a new lens I just say "HOW MUCH"!!! But after seeing his work I hope that you will come to share his love for what nature has given us and take the time to enjoy.

President 2005-2006



As I relinquish the duties of President of the Mississippi Academy of Sciences, I wish to take this opportunity to affirm publicly what I have already expressed to many of you, Thanks! There are so many people that I need to thank for this time that I have spent leading the Academy. Above all, the individual members that make up the Academy are to be congratulated for a wonderful show of spirit and support. I have attempted, and I hope you will agree, to provide a quality of leadership that equals what the Academy has enjoyed over time, and I have tried to address the concerns and issues that many of you raised. I know that the new leadership will do an exceptional job because of the time, support, and effort of the membership.

Changes are occurring in the Academy. The journal has taken on a new appearance thanks to the efforts of our new editor Dr. Michelle Tucci. The incoming President, Dr. Juan Silva, is developing plans for the next annual meeting. Several initiatives are underway that will benefit the membership. While some changes were needed to revitalize our organization, we have made an effort to keep the membership informed and involved. This is an exciting time for the Academy.

I started this column by saying there are many people to thank. While it is not possible to acknowledge every individual, there are two people that I must single out. First is Ms. Cynthia Huff the Administrative Assistant of the Academy. I wish to thank her for all of her efforts on my behalf and that of the Academy. Cynthia makes everything work, as it should. Second, I want to thank Dr. Olga McDaniel, my wife, who has been actively involved with the Health Sciences division for several years, recruited individuals to serve the Academy when needed, and supported my efforts as President of the Academy. Again, I want to express my appreciation to the membership for the support during this past year. I look forward to a fantastic year ahead.

– **Larry S. McDaniel**

MAS President 2006-2007



Dr. Juan L. Silva

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Address: Box 9805, Mississippi State, MS 39762

Email: jls@ra.msstate.edu

Phone: 662/325-3200

Fax: 662/325-8728

Homepage: <http://www2.msstate.edu/~jls/>

Research group page:

<http://www.msstate.edu/org/silvalab/>

Current

- Present: Professor and Researcher, Department of Food Science, Nutrition and Health Promotion (formerly Department of Food Science and Technology) and Adjunct Professor, Swalm School of Chemical Engineering, MSU
- **Research Interests**
 - Processing and Quality Evaluation and Optimization of Foods
 - Food Safety Systems Development and Evaluation
 - Food Products Functionality
 - Byproducts Utilization: food, feed, energy sources
 - Aquaculture foods, fruits and vegetables, others

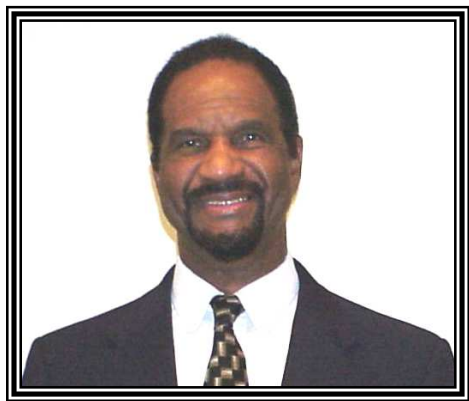
Publications: Over 200 presentations at scientific, trade, and association meetings/conferences in U.S. and abroad. Over 110 publications in scientific journals, trade magazines, bulletins, and proceedings and about 12 more submitted, in review, accepted, or to be contributed. Directed 11 Ph.D. and 30 M.S. Theses

What would you contribute to MAS as an officer?

The Mississippi Academy of Sciences is an entity with a lot of potential that can represent the academic community with our political leadership and serve as an advisory board to decision makers. I believe that we should be more active, increase our exposure, and help in the development of policy to increase science knowledge in our schools. We should also increase our meeting attendance and participation by working hard to recruit members and find ways to bring more students to our meetings. One thing could be the sponsoring of one student (at least) by each of the divisions. In short, if elected, I will be there to serve the society and increase its visibility

MAS President Elect 2007-2008

MAS President Elect 2007-2008



Dr. Joseph A. Cameron
Department of Biology, Jackson State University

Professor and Director of Graduate Program
Former Director of Minority Institutional Research Training Program
Former Director of Community Mobilization, Jackson Heart Study
Director of the Bridges to the Baccalaureate Degree Program
Coordinator of the Bridges to the Doctorate Program with Indiana University Purdue University at Indianapolis
President Elect, Mississippi Academy of Sciences

Dr. Joseph A. Cameron received the Ph.D degree from Michigan State University in 1973. He currently holds the position of Professor of Biology at Jackson State University and has held this position since 1978. During his tenure at Jackson State University, Dr. Cameron has developed many graduate and undergraduate courses and has served as coordinator of the graduate program since 1979. He has also served as Interim Dean, School of Science and Technology. Dr. Cameron's greatest contribution to Jackson State University is his desire to enhance and generate an interest in science throughout the educational pipeline, i.e. high school, junior college, college and doctoral degree levels. The Department of Education and the NIH have funded Dr. Cameron since 1979 to encourage students at these various levels. He served as Director of the Biomedical Sciences Program and the Minority Institutional Research Training Program at Jackson State University for 5 and 15 years, respectively. The programs were sponsored by the Education Department and the National Heart, Lung, and Blood Institute with annual average budgets of 200,000 dollars each. The Biomedical Sciences Program was a collaborative educational training program for junior and senior high students in Jackson and surrounding communities. The Minority Institutional Research Training Program was a cooperative research-training project between Jackson State University and the University of Mississippi Medical Center. The primary purpose of the program was to identify, motivate, and train talented minority institutional pre-doctoral students. Dr. Cameron is also the former Director and Chief Administrator for the Community Mobilization component of the Jackson Heart Study. The program is sponsored by the National Heart Lung and Blood Institute in conjunction with the National Center for Minority Health Disparities. The program is a cooperative, interinstitutional, epidemiological study of cardiovascular disease between Jackson State University, Tougaloo College and the University of Mississippi Medical Center. Dr. Cameron also currently serves as Coordinator of the Bridges to the Doctorate Degree Program with Indiana University Purdue University at Indianapolis and Director of the Baccalaureate Degree Program at Jackson State University. The programs are sponsored by the National Institute of General Medical Sciences and have annual budgets of 200,000 dollars. The program is a cooperative research-training project between Jackson State University and Hinds Community College involving the Departments of Biology, Chemistry, Computer Science, and Mathematics. The program encourages Community College minority students to seek B. S and higher degrees. These are just a few of the many federally funded programs for which Dr. Cameron has served as director. Dr. Cameron is well respected at NIH and has served as Chair/Member of many Special Emphasis Panels at the National Heart, Lung and Blood Institute, National Institutes of Health, as well as Member of many Special Emphasis Panels at the National Center for Minority Health Disparities, National Institutes of Health. Dr. Cameron was recently appointed to serve on the membership committee of the Endocrine Society and reelected as President to the Bridges Program Directors Organization. Dr. Cameron has also found time to publish as well as mentor students. He is well published and has directed or served on over 40 Master level students thesis research projects. Dr. Cameron's goal is to serve his community through education.

MISSISSIPPI ACADEMY OF SCIENCES ABSTRACT FORM/MEMBERSHIP FORM

ABSTRACT INFORMATION

Abstract title: _____

Name of Presenting Author(s): _____

(Presenter must be current (i.e., 2007 membership dues must be paid), student member, regular member or life member of the MAS)

Telephone _____ Email _____

Check the division in which you are presenting

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| <input type="checkbox"/> Agriculture and Plant Science | <input type="checkbox"/> Health Sciences | <input type="checkbox"/> Physics and Engineering |
| <input type="checkbox"/> Cellular, Molecular, and Dev. Biol | <input type="checkbox"/> History and Philosophy of Sciences | <input type="checkbox"/> Psychology and Social Sciences |
| <input type="checkbox"/> Chemistry and Chem. Engineering | <input type="checkbox"/> Math., Computer Sci and Statistics | <input type="checkbox"/> Science Education |
| <input type="checkbox"/> Ecology and Evolutionary Biology | <input type="checkbox"/> Marine and Atmospheric Sciences | <input type="checkbox"/> Zoology and Entomology |
| <input type="checkbox"/> Geology and Geography | | |

Type of presentation

☐ **Poster presentation** ☐ **Workshop** ☐ **Lecture presentation** ☐ **Invited Symposium**

If the presenting author for this paper will also present in another division, please list the other division _____

Audiovisual Equipment needs:

☐ 2" X 2" slide projector ☐ Powerpoint ☐ Overhead projector

MEMBERSHIP INFORMATION

New _____ Renewal _____

Mr. Ms. Dr. _____

Address _____

City, State, Zip _____

School or Firm _____

Telephone _____ Email _____

PLEASE INDICATE DIVISION YOU WISH TO BE AFFILIATED _____

Regular Member \$25

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Educational Member \$150

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CHECKLIST

Please complete the following:

- ☐ Enclose copy of abstract (even if abstract has been submitted electronically)
- ☐ Complete and enclose abstract/membership form (this form)
- ☐ Enclose the following payments (Make checks payable to Mississippi Academy of Sciences)
 - ☐ \$25 per abstract
 - ☐ \$25 regular membership fee OR \$5 student membership fee (2007 membership must be paid for abstract to be accepted)
- ☐ You must supply a check # _____ or P.O. # _____ (credit cards are not accepted)

In addition, you MAY preregister at this time to take advantage of the saving

- ☐ Enclose the following payments:

<input type="checkbox"/> \$30 regular member (after 23 Jan)	<input type="checkbox"/> \$20 regular member (Preregistration before Jan 23)
<input type="checkbox"/> \$15 student member (after 23 Jan)	<input type="checkbox"/> \$10 student member (Preregistration before Jan 23)
<input type="checkbox"/> \$65 nonmember (after 23 Jan)	<input type="checkbox"/> \$55 nonmember (Preregistration before Jan 23)

Note: Abstracts that are resubmitted for changes will incur a \$10 resubmission fee. Late abstracts will be accepted with a \$10 late fee during November increased to \$25 after that. Late abstracts will be accepted only if there is room in the appropriate division. They will be published in the April issue of the MAS JOURNAL.

MISSISSIPPI ACADEMY OF SCIENCES—ABSTRACT INSTRUCTIONS
PLEASE READ ALL INSTRUCTIONS BEFORE YOU SUBMIT YOUR ABSTRACT

- Your paper may be presented orally or as a poster. Oral presentations are generally 15 minutes. The speaker should limit the presentation to 10-12 minutes to allow time for discussion; longer presentations should be limited accordingly. Instructions for poster presentations are linked [here](#).
- Enclose a personal check, money order, institutional check, or purchase order for \$25 publication charge for each abstract to be published, payable to the Mississippi Academy of Sciences. The publication charge will be refunded if the abstract is not accepted.
- The presenting author must be a member of the Academy at the time the paper/poster is presented. Payment for membership of one author must be sent for the abstract to be accepted.
- Attendance and participation at all sessions requires payment of registration.
- Note that three separate fees are associated with submitting and presenting a paper at the annual meeting of the Mississippi Academy of Sciences.
 1. An abstract fee is assessed to defray the cost of publishing abstracts and
 2. a membership fee is assessed to defray the costs of running the Academy.
 3. Preregistration payment (\$20 regular; \$10 student) may accompany the abstract, or you may elect to pay this fee before February 1, or pay full registration fees at the meeting.
- Abstracts may be submitted by e-mail or entered directly through the MAS website. The URL is <http://www.msacad.org/index.html> (case sensitive). This abstract submission form and the appropriate fees should be sent by US mail even if the abstract has been submitted electronically.
- **Abstracts that are resubmitted for changes will incur a \$10 resubmission fee.**
- **Late abstracts will be accepted with a \$10 late fee during November increased to \$25 after that. Late abstracts will be accepted only if there is room in the appropriate division. They will be published in the April issue of the MAS JOURNAL.**
- Submit your abstract and appropriate fees to the Abstracts' Editor, John Boyle, TO BE RECEIVED NO LATER THAN NOVEMBER 1, 2006.

Dr. John Boyle
Mississippi State University
Dept. of Biochemistry
P.O. Drawer 9650
Mississippi State, MS 39762

jab@ra.msstate.edu

FORMAT FOR ABSTRACT

- Your abstract should be informative, containing: (a) a sentence statement of the study's specific objectives, unless this is given in the title; (b) brief statement of methods, if pertinent; (c) summary of the results obtained; (d) statement of the conclusions. It is not satisfactory to state, "The results will be discussed."
- Your abstract, including a concise, descriptive title, author(s), location where work was done, text and acknowledgment, may not exceed 250 words. **Excessively long abstracts will be truncated.**
- The title should be all capital letters. Use significant words descriptive of subject content.
- Authors' names start a new line.
- The institution where your research was done should include city, state, and zip code. Do not include institutional subdivisions such as department.
- The abstract should be one paragraph, single spaced, starting with a 3-space indentation.

Mississippi Academy of Sciences 2007

Mississippi State
UNIVERSITY



Ringin' in school spirit.

The seventy-first annual meeting of

MISSISSIPPI ACADEMY OF SCIENCES

Will be held on
Thursday and Friday
February 22 and 23, 2007

Mississippi State University
Starkville, Mississippi

- Use standard abbreviations for common units of measure. Other words to be abbreviated, such as chemical names, should be spelled out in full for the first use, followed by the abbreviation in parenthesis. Do not abbreviate in the abstract title.
- Special symbols not on your printer or typewriter must be in black ink.
- Use italics for scientific names of organisms.
- Begin authors' names on a new line. Place an asterisk (*) after the presenter(s), if there are multiple authors.
- Use superscripts for institutional affiliations where necessary to avoid ambiguity.
- Refer to these examples as guides.

EXAMPLES OF TITLES AND AUTHORS:

[single author, no ambiguity about designated speaker or affiliation]

AN EXPERIMENTAL MODEL FOR CHEMOTHERAPY ON DORMANT TUBERCULOUS INFECTION WITH PARTICULAR REFERENCE TO RIFAMPICIN

Joe E. Jones, Mississippi State University, Mississippi State, MS 39762

Abstract body starts here . . .

[two authors, one designated speaker, different affiliations, but no ambiguity]

AN EXPERIMENTAL MODEL FOR CHEMOTHERAPY ON DORMANT TUBERCULOUS INFECTION WITH PARTICULAR REFERENCE TO RIFAMPICIN

Joe E. Jones and Ralph A. Smith*, Mississippi State University, Mississippi State, MS 39762, and University of Mississippi Medical Center, Jackson, MS 39216

Abstract body starts here . . .

[two authors, both designated as speakers, different affiliations, but no ambiguity]

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Joe E. Jones¹, Ralph A. Smith^{1*}, and Alice D. Doe², ¹Mississippi State University, Mississippi State, MS 39762, and ²University of Mississippi Medical Center, Jackson, MS 39216

Abstract body starts here . . .

GUIDELINES FOR POSTER PRESENTATIONS

- The Academy provides poster backboards. Each backboard is 34" high by 5' wide. Mount the poster on the board assigned to you by your Division Chairperson. Please do not draw, write, or use adhesive material on the boards. You must provide your own thumb tacks.
- Lettering for your poster title should be at least 1" high and follow the format for your abstract. Lettering for your poster text should be at least 3/8" high.
- Posters should be on display during the entire day during which their divisional poster session is scheduled. They must be removed at the end of that day.
- Authors must be present with their poster to discuss their work at the time indicated in the program.

2006 Mississippi Junior Academy of Science Poster Session Workshop and Poster Competition



University of Mississippi

April 18, 2006



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Mississippi School for Mathematics and Science
Starkville Academy
Richland High School
Presbyterian Christian School
Oxford High School
Oxford Middle School
Byhalia High School

Poster Competition Participants

Matt Messer
Asanka Nanayakkara
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BRIDGES TO THE BACCALAUREATE DEGREE PROGRAM (BBDP)

A Biomedical Research Training Program offered by the Department of Biology at Jackson State University in collaboration with the Biology Department at Hinds Community College and the University of Mississippi Medical Center Mentors.

Sponsored by the National Institute of General Medical Sciences, National Institutes of Health

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Hilda Wells, Co-coordinator
Hinds Community College Jackson, MS

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