

# College of Arts & Sciences

## USA Psychologist Explores How Animals Perceive Human Speech in Hopes of Better Understanding Human Language Development



Dr. Joan Sinnott

On a gorgeous fall Friday afternoon, Dr. Joan Sinnott is deep in her psychology research — not on campus, but at the Mobile Zoo in Wilmer, Ala.

The moment she arrives, the four big monkeys — Mojo, Chico, Bubba and Marcel — start rushing around, chattering with delight, trying to get her attention in hopes of being the first one out to play. Their game is her research project.

With the help of graduate student Lindsay Weaver, almost grad student Stephanie Jett, and computer expert Kelly Mosteller, Sinnott is working to demonstrate that monkeys can understand some elements of human speech. When she was a graduate student at the University of Michigan, Sinnott demonstrated that monkeys could hear the difference between the human "ba" and "da" sounds.

Now an associate professor of psychology at the University of South Alabama, with an endowed position managed by the USA Foundation, she's teaching zoo monkeys to listen to a cue — "oo"

boy, Mojo!"). If they go the wrong way, they get commiseration ("No, Mojo") and a chance to try again. And every time they try, they get a grape for the effort.

She started working with Mojo and Chico, the Japanese macaques, last spring, and they're at the head of the class. Mojo picks the correct direction about 95 percent of the time, closely followed by Chico at 90 percent correct.

Bubba, a rhesus macaque, is new to the project. He's been working only since early fall, but is quickly catching up with Chico.

And Marcel, a beautiful grey-cheeked mangabey who was only recently added to the project, is still trying to master the easiest steps.

During these early stages, there are plenty of extra clues to help the monkeys succeed. Weaver, making the "oo" sound, sits on the monkey's left and calls the sound — louder and louder if the monkey begins to head off in the wrong direction. Jett, making the "ee" sound, sits to the right.

Each monkey has 24 trials to earn a peanut. Mojo's instructions will take him to the left four times, then to the right four times and so on. Chico and

Bubba switch directions every six times and Marcel, the newcomer, goes to the left 12 times and then to the right 12 times. When they

get at least 90 percent correct in any given test session, the direction changes get more frequent in the next session.

On this particular Friday, Sinnott has an academic audience and explains the fundamentals of her project.

Since her graduate school days, she has known that monkeys have the necessary auditory discrimination abilities to distinguish basic meaningless phonemes — e.g. "ba" from "da." Now she wants to demonstrate that animals can accurately and reliably recognize and understand human words, a relatively new area of animal psychology.

Some researchers have claimed that various primates, such as chimps, can communicate in sign language, but, like many of her colleagues, Sinnott is skeptical. After all, signing is so individualized that it's hard to judge how accurate the animals are. But she believes that some degree of word recognition is not only possible, but likely.

To simplify the word recognition process for the monkeys, she has chosen the two simple vowel sounds, "oo" and "ee," because they are the most spectrally distinct sounds in English, she explains.

After her audience has watched the demonstration, she explains the next steps — the steps she hopes will show just how much the monkeys can learn.

**"Seeing semi-wild animals who look forward to seeing you — that's exciting," said Mosteller.**

for left and "ee" for right — and go in the appropriate direction. If they make the right choice, they get a peanut and praise ("Good



**USA Psychologist Explores How Animals Perceive Human Speech...**  
continued

Up to this point, the monkeys have had many clues of which way to turn — not just the sounds, but also the direction of the speaker’s voice, the repetitive pattern, and the increasing volume if they head off the wrong way.

Once they master these multi-clue steps, she will change to a random pattern of “oo” and “ee.” Then she will change the human speakers so the monkeys can key only on the vowels and not the origin of the sound. Then she plans to introduce objects whose names contain the vowels — a “boot” and a “beet,” for example. And eventually, she would like to work up to more complex two-word phrases — choosing between a red ball and a blue ball, for example.



USA associate professor of psychology Dr. Joan Sinnott, center, talks with the College of Arts and Sciences’ dean Dr. G. David Johnson, left, and associate dean Dr. Lois Wims during a recent visit to the Mobile Zoo, where she is studying how animals perceive human speech. Zoo director John Hightower, second from right, has been very supportive of the project that could help researchers understand more about how humans develop language skills. Sinnott hopes that her research might one day lead to help for young children who are having difficulty developing normal adult language skills.

So far, the monkeys are learning quickly. Mojo mastered the basics during last spring semester. The others started this fall and are not far behind. “Neither I nor my monkeys work during the summer,” Sinnott quipped.

A recognized expert in her field, Sinnott has consistently won National Institutes of Health research funding since her postdoctoral days at Johns Hopkins University in the late 1970s. Her current grant from the National Institute on Deafness and Communication Disorders has two more years, and she hopes to win a new grant for the new project.

Dr. G. David Johnson, dean of the College of Arts and Sciences, believes that Sinnott’s work provides a wonderful opportunity for USA

students to work with an experienced researcher who has consistently won NIH funding.

“Dr. Sinnott’s work has received funding from the National Institutes of Health for many years — which demonstrates that the high quality of her research is recognized nationally,” Johnson said. “Her comparative psychology research program adds an important component to our psychology department. Each semester, undergraduate and graduate students get a great opportunity to learn about the significance of animal models for understanding human psychology. Also, they get to participate with her in research with animals for extended periods of time. This is a tremendous opportunity for our students that adds an important dimension to their education at USA.”

Sinnott’s research team members appreciate the value of the opportunity, but they also enjoy the opportunity to get to know the monkeys.

“I like the relationship you build with them if you work here enough,” said Weaver.

“They love the interaction with us,” said Jett.

“Seeing semi-wild animals who look forward to seeing you — that’s exciting,” said Mosteller. “Their success is your success.”

Weaver is still planning her master’s thesis, but she definitely intends to continue working with animal communication — probably using other non-dangerous species that make a home at the zoo — perhaps the pigs, a pony and a Patagonian cavy.

She hopes to use her graduate credentials to get a job training marine mammals.

In fact, marine mammals awakened her first interest in animal communication, she said. She went to a SeaWorld show when she was a child, and the whales didn’t want to perform. The trainer took the stage, Weaver recalled, and explained that the big mammals were always given a choice whether to perform and were never forced to do so. Then he and other trainers went backstage to spend time with the animals. A few minutes later, the whales came out and did their show.

After the show, Weaver went backstage and watched the trainers praising the whales and celebrating their success. Weaver was stunned that humans “can build a relationship” with a whale and picked her career path that minute. “This is my calling,” she said.

In the meantime, she’s deeply involved in Sinnott’s monkey communication research and planning her own adaptation of the work for other zoo animals.

Like the rest of her team, Sinnott, is charmed by the monkeys. “They’re so cute,” Sinnott said. “Each has his own personality. They’re so smart.”

How smart? “I’m sure they’re not going to be understanding long complicated sentences,” she quipped. But she is confident that they can learn to understand simple nouns, verbs and maybe more.

Sinnott hopes that research studying how animals learn to respond to human speech can help us understand how human infants learn similar skills. The skills of human infants quickly outstrip the animals,

**USA Psychologist Explores How Animals Perceive Human Speech...**  
continued

but the comparison is useful for infants still in preverbal stages. She hopes her research might one day lead to help for young children who are having difficulty developing normal adult language skills.

“Animals are a model for human behavior,” said Johnson, adding that the more we understand them, the more we understand humans.

On Thursdays and Fridays, when Sinnott and company work with the monkeys, zoo director John Hightower — who usually encourages zoo visitors to offer healthy treats like peanuts to the animals — posts a sign, asking visitors not to provide extra treats.

And there are plenty of distractions. Big animals are only 50 feet away. And humans wander by any time of the day.

Occasionally, zoo visitors wander by during the studies. It’s not a problem when adults stop to watch, Sinnott said, but young children can be rowdy, distracting the monkeys and skewing her results.

A larger zoo might create more problems, but the Mobile Zoo is relatively small with a limited number of visitors. And Hightower is very supportive of Sinnott’s work. Although it’s definitely not an animal show, his zoo visitors find it interesting and so does he. And if, one day, the monkeys can do all the things Sinnott expects, it might lend itself to a performance that he and his visitors would love.

Sinnott wouldn’t be surprised if the monkeys loved it, too.



Mojo, a Japanese macaques, is one of four monkeys Sinnott is working with to demonstrate that primates can understand some elements of human speech.

**USA Essay Selected for Prestigious Anthology**

By: Leigh Patton

An essay by a University of South Alabama professor has been selected for the anthology “The Best American Political Writing of 2007.” Dr. Ethan Fishman, professor of political science at USA, originally wrote “Not Compassionate, Not Conservative” for the winter 2007 edition of “The American Scholar.”

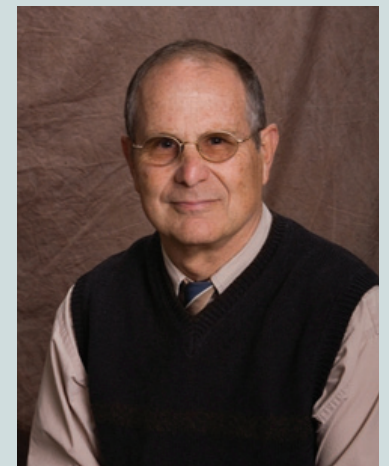
In this essay, Fishman describes the conservatism of the Bush administration as a form of pseudo-conservatism. He concludes in his article that as long as Americans fear attacks from powerful enemies and remain fearful of their status in society, pseudo-conservatism will persist in American politics. The article was based on a 1954 “The American Scholar” article about McCarthyism written by Richard Hofstadter.

“The American Scholar” is a quarterly magazine of literature, science, history, public affairs and culture published by the Phi Beta Kappa society.

Fishman has published another article in “The American Scholar” titled “Unto Caesar.” Published in the autumn 2007 issue, it “examines

traditional American attitudes regarding the relationship between church and state,” according to Fishman.

Fishman has taught at USA since 1980. He earned his bachelor’s degree at Harpur College, his master’s degree at SUNY-Binghamton, and his Ph.D. at Duke University.



## USA Senior Receives Caldwell Scholarship



University of South Alabama history major and senior Holly Gafford has received the highly competitive Caldwell Scholarship, which allows students in the College of Arts and Sciences to participate in a study abroad program.

Gafford used her scholarship to attend classes in London. The Mobilian selected England because she was intrigued with the history of World War II.

"I learned about World War II from a perspective that I could not have gained taking a course on the same material in the states, considering the actual impact of that war on London," Gafford said.

With plans to graduate with a bachelor's degree in history this spring, the 21-year-old says she will attend graduate school to major in history or law school.

Although London overwhelmed her at first, Gafford felt more comfortable as time passed.

"It was a fairly stark contrast to my experience here in Mobile, and not an unwelcome one," she said.

Gafford began to appreciate the "higher level of cultural diversity and tolerance in conjunction with the high population density of the city."

Since 1994, the James and Ivel Caldwell Scholarship has assisted many students at USA to achieve international training for future careers. The late Dr. Caldwell, who served as vice president during USA's early years, was also an acclaimed educator in Alabama and in foreign countries, including Indonesia, Iraq and Jordan. The Caldwell Endowment gives scholarships annually to students.

Dr. Stephen Morris, political science professor, said the study abroad program benefits students at USA, allowing them to become more aware of the world.

"International experience enriches a student's understanding of the world, their society and themselves. The U.S. is just beginning to wake up to the need to broaden students' international understanding," Morris said. "Over the years a number of our students have been able to participate in study abroad programs thanks to the contributions by friends and family of James and Ivel Caldwell. Hopefully, more can be done in the future to send more of our students on these journeys abroad."

## USA Physicist Wins Research Award

By: Stephanie A. Hudson

University of South Alabama assistant professor of physics, Dr. Albert A. Gapud, has received a \$43,800 Cottrell College Science Award from the Research Corporation for a two-year physics project.

The project, entitled "Effects of Size and Electronic Structure of Vortex Cores on the Dynamics of Superconducting Vortices," will research still-unexplained electromagnetic phenomena in various superconducting materials. The project will create research opportunities for USA physics students as well as foster collaborative relationships with national research laboratories.

"This project also enables acquisition of equipment and resources that provide new research capabilities, thus opening up other, longer-term research directions," Gapud said.

Gapud received his doctorate in 1999 from the University of Kansas. He joined the USA faculty in 2005. His research topics include superconductivity, dynamics of superconducting vortices, transport properties of nanowires, self-assembly and growth of film and nanostructures.

The USA physics faculty actively collaborate with physicists worldwide, including the European Organization for Nuclear Research, Fermi National Accelerator Laboratory, Jet Propulsion Laboratory, National High Magnetic Field Laboratory, Oak Ridge National Laboratory, Stanford Linear Accelerator Center, UK Science and Technology Facilities Council, Auburn University, Kansas State University, Ohio State University, University of Kansas, University of Mississippi, University of Southern Mississippi, University of Tennessee, University of Virginia, as well as other institutions.

Research Corporation is a private operating foundation that aids basic research in the physical sciences (mainly astronomy, chemistry and physics) at U.S. and Canadian colleges and universities. It supports ideas independently proposed by college and university faculty members and carries on activities related to science advancement.

## Foreign Film Crew Follows Work of USA Professor

By: Eric E. Smith

A French film crew recently documented the work of University of South Alabama professor Dr. Anne Boettcher during a joint research trip between the USA biology department and Texas A&M biology department.

During the expedition, Boettcher and her team studied the effects of environmental contaminants on the reproductive fitness of Gulf pipefish.

Mona Lisa Productions filmed both field and laboratory research concerning sentinel species, such as the pipefish. The research will determine if any species has been contaminated by environmental factors. The film is expected to be completed by December 2008, and it will initially be released in Europe.

The expedition, one of several in a long-term research project between USA and Texas A&M, is funded through an Environmental Protection Agency Science to Achieve Results Fellowship and a National Oceanic and Atmospheric Administration-National Estuarine Research Reserve System Fellowship. Charlyn Partridge, a Texas A&M Ph.D. candidate who

received a masters degree from USA, won both fellowships.

"Both Charlyn and I are excited that the project is receiving international attention," said Boettcher.

Also involved in the project are researchers Dr. Scott Phipps of the Weeks Bay National Estuarine Reserve, and Chris May of the Grand Bay National Estuarine Reserve.

## Dean's Letter



G. David Johnson,  
Dean College of Arts and Sciences

This is an exciting time for the College of Arts and Sciences at the University of South Alabama. Just about all of our academic programs are growing and all are improving in quality. Our faculty is highly productive, the student body gets stronger academically every year, and our alumni are more involved and committed than ever before. Faculty publications and grants are up; student engagement is increasing; and gifts from alums, faculty, staff, and other supporters are growing. This issue of the A&S newsletter showcases just a few of these recent accomplishments.

The first story describes the fascinating research conducted by Joan Sinnott, Professor of Psychology. Joan is a comparative psychologist interested in similarities and differences in language development between humans and other species. Currently, she is studying speech recognition among monkeys with the purpose of advancing our knowledge of language development in humans. Recently, I joined several colleagues from the University for a visit to her research "lab," which is located at the Wilmer zoo in west Mobile County. All of us were impressed with her research project and the dedication she and her staff have to the health and well being of Mojo, Chico, Marcell and Bubba – their research subjects.

Other stories include a feature on Ethan Fishman, Professor of Political Science, whose recent article published in the American Scholar was selected for a national award. Another piece highlights Anne Boettcher, Associate Professor of Biology, whose research will be featured in an upcoming film. We also announce a significant research grant awarded to Assistant Professor of Physics, Albert Gapud. Dr. Gapud's research is on superconducting, which is a fascinating physical property that occurs at extremely low temperatures.

This issue also includes two features on students in Arts and Sciences. Holly Gafford was awarded the prestigious Caldwell Scholarship which allowed her to study in London last summer. This scholarship was created by a generous gift from the family of James F. Caldwell, who was one of the founding fathers of the University of South Alabama. Justin Litaker and Anthony Shiver are philosophy majors who won the Alabama Philosophical Society's undergraduate essay contest this past fall. Justin and Anthony worked hard to take advantage of the excellent research opportunities available to USA undergraduates.

As always, the purpose of our Newsletter is to inform the reader of the outstanding accomplishments of our faculty, students, alumni and supporters. We are happy to share their stories with you.



## USA Students Present Paper at Philosophy Conference

By Melissa Johnson

University of South Alabama students Justin Litaker and Anthony Shiver, both philosophy majors and winners of the Alabama Philosophical Society's Undergraduate Essay Contest, presented their award-winning essays at the APS annual conference in Orange Beach, AL., on Sept. 22.

Litaker and Shiver are the first students in the history of USA'S philosophy department to win the contest, according to Dr. Ted Poston, professor of philosophy at the University of South Alabama and an officer of the Alabama Philosophical Society.

Shiver presented his second-place essay, "Weak Knowledge, Critical Thinking and Testimony in Education," at 9:15 a.m. and was followed by Liatker's presentation of his first-place essay, "Modal Realism and its Discontents."

Despite the "early" morning schedule, Litaker said there was a good turn out and the audience was eager to listen and learn. He said the warm atmosphere allowed him to be a lot more relaxed than he could have imagined.

Each presenter was allotted 35 minutes to deliver his/her presentations and was to account for enough time for a discussion period. "Both Justin and Anthony did a fabulous job," said Poston.

Poston added that he was especially impressed with the way they responded to the question and answer portion.

"The Q-and-A time can be taunting at first," he said, "But Anthony and Justin both handled their questions very well."

Poston also commented that several philosophers present at the conference told him they enjoyed the undergraduate papers, and Litaker said he received compliments as well.

"It was ultimately the best conference experience I could have imagined for myself," Litaker said.

Litaker also added that he was pleased to see some USA Philosophy Club members in the audience. He said their support created a sense of community.

"It was nice to see South represented at a conference...it shows we have a good department and a great faculty that gives us the tools to succeed," Litaker said, "It's a reflection of the strength of the faculty and department as a whole."

This year marked first time in several years that the Alabama Philosophical Society has welcomed two undergraduate speakers, according to Torin Alter, University of Alabama professor of philosophy and the presiding president of the Alabama Philosophical Society. Normally, only one undergraduate speaker is invited to the conference every year.

"I think this speaks of the quality of submissions we received," Alter said.

## Stokes Distinguished Professor Named



Dr. Sue Brannan Walker

Sue Brannan Walker, Chair of the Department of English, has been named the Stokes Distinguished Professor of Creative Writing at the University of South Alabama. The Stokes Distinguished Professorship is supported by an endowment created by a generous gift from Dr. and Mrs. Steven H. Stokes. Both Dr. Stokes and his wife Angelia are USA alumni. Dr. Stokes is the Chair of the USA Board of Trustees and Mrs. Stokes is a member of the Dean's Leadership Council in the College of Arts and Sciences.

Dr. Walker received her B.S. from the University of Alabama, and her M.A., M.Ed., and Ph.D. from Tulane University. She has taught at USA since 1980, serving as Chair of the English Department since 1997. She is an accomplished poet and writer of fiction and non-fiction prose. She has published 18 books, numerous poems in 79 different journals, seven short stories, 29 articles of literary criticism, 17 pieces in anthologies, and a one-woman, one-act, play (in which she also performs). She has given more than 100 papers, lectures, workshops and readings in the U.S. and

Europe. She started and continues to manage her own publishing house, Negative Capability. In 2003, she was named Poet Laureate for the state of Alabama and continues to serve in that role. Earlier this year she was named the First Lady of Mobile, an honor given in recognition of her contributions to the promotion of the arts and humanities in our city. She has been nominated for the Pulitzer Prize. In addition to being an outstanding artist and scholar, Dr. Walker is a superb teacher, who inspires the love of language and literature among her students.

At the end of this academic year, Dr. Walker will step down as Chair of the English Department to fulfill her duties as the Stokes Professor, which will include directing the activities of the Stokes Center for Creative Writing. The Stokes Center will advance the study of writing by hosting prominent authors who will offer courses, workshops, and readings at USA. The Center will also award academic scholarships to talented students, and host writing conferences and festivals.

"I am extremely proud and appreciative of the many contributions that Dr. Walker has made and will continue to make at USA. Dr. Walker is truly deserving of the honor bestowed on her today as the first Stokes Distinguished Professor" said Dean David Johnson.

## The Twenty-Sixth Annual College of Arts and Sciences Dean's Lecture and Faculty Awards Ceremony

The Twenty Sixth Annual College of Arts and Sciences Dean's Lecture and Faculty Awards Ceremony was held on November 14, 2007. Dr. Jennifer Langhinrichsen-Rohling of the Department of Psychology, delivered The Dean's Lecture: "Intimate Partner Violence is a Human Issue: Thoughts from a Scientist-Feminist" summarizing her groundbreaking research in the field of intimate partner violence.

Dean G. David Johnson introduced the Dean's Leadership Council and University administrators in attendance and presented the College 2007 Awards.

Dr. Calvin Jones, Department of Foreign Languages and Literatures, and Dr. Glenn Sebastian, Department of Earth Sciences, received the Outstanding Service Awards for their longstanding commitment to service to the College and its students.

The Award for Junior Faculty Scholarship was given to Dr. Nicole Amare, Department of English. Dr. Amare's primary research area is technical writing and she has received two best article awards in her career.

Awards for Outstanding Teaching were presented to:

**Dr. Nicole Carr** (Sociology/Anthropology/Social Work), **Mr. James Connors** (Earth Sciences), **Dr. Kevin Meeker** (Philosophy), **Mr. Lyle Miller** (Drama), and **Dr. Peter Wood** (Music). Congratulations to these excellent teachers!



Dr. Nicole Carr



Dr. Kevin Meeker



Mr. Lyle Miller



Dr. Peter Wood



Dr. Calvin Jones

## Employee Service Recognition 2007

The University Employee Service Recognition Awards were recently presented. The College of Arts and Sciences was very well represented with two major awards at the ceremony. **Ms. Genevieve Dardeau** of Department of Communication received the USA National Alumni Foundation Outstanding Advisor Award. **Dr. Jennifer Langhinrichsen-Rohling** of the Department of Psychology was named the Olivia Rambo McGlothren National Alumni Outstanding Scholar Award for 2007.



Dr. Jennifer Langhinrichsen-Rohling



Ms. Genevieve Dardeau

## 2007 Creative Writing Scholarship Awards

The 2007 Creative Writing Scholarship Award Ceremony was held on September 19, 2007. The Angelia and Steven Stokes Scholarships and the Shelley Memorial Scholarships were given and recipients read from their selected works. Readings were done by Ariel Davis, Regina Dossett, Ingrid Felts, Elisabeth Gibbs, Jessica Jones, Meagan McDaniel, and Tammy Stefanini.