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# Proceedings of the 2013-2014 University Research Grant Recipients Symposium

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*Proceedings of the  
2013-14 University Research Grant  
Recipients Symposium*

*Wednesday, October 29, 2014*

*11:00 am – 1:00 pm*

*Room C3380*

*Governors State University*

*University Park, IL*

**Editor:  
Dr. Shelly Kumar  
College of Arts and Sciences**

**Proceedings of the  
2013-14 University Research Grant  
Recipients Symposium**

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**Program**

11:00 am – 11:30am	Registration
11:05 am – 11:30am	Refreshments
11:35 am – 11:40 am	Welcome and Introduction: Dr. Shelly Kumar
11:40 am – 11:45 am	Welcome and Greetings: Dr. Colleen Sexton
11:45 am – 12:00 Noon	Presentation: Dr. Darrin Aase
12:00 Noon – 12:15 pm	Presentation: Dr. David Hamilton Golland
12:15 am – 12:30 pm	Presentation: Dr. Timothy C. Gsell
12:30 pm – 12:45 pm	Presentation: Dr. Deborah James
12:45 pm – 1:00 pm	Presentation: Dr. Joong-Won Shin

**2013-14 University Research Grant Committee Members**

Dr. John Cook  
Prof. Linda Geller  
Dr. Shelly Kumar (Chair)  
Dr. Dale Schuit

## SOCIAL PERCEPTION AND ALCOHOL DEPENDENCE

Darrin M. Asse  
Assistant Professor  
Addiction Studies and Behavioral Health  
College of Health and Human Services

### ABSTRACT

A growing literature suggests that social perception deficits are evident in individuals with alcohol use disorders (Uekermann & Daum, 2008). It remains unclear if these cognitive problems are typically premorbid, or if they reflect the neurotoxic effects of repeated alcohol exposure. Recent studies suggest functional differences between alcohol users and control subjects that persist with abstinence and may be associated with treatment outcomes (Charlet et al., 2013; Fein et al., 2010; Foisey et al., 2007, Maurage et al., 2013). The present study measured social perception performance and psychiatric symptoms in patients during early alcohol abstinence. We hypothesized that 1) subjects would perform significantly below normative scores on social perception tasks, and 2) psychiatric symptoms would be negatively associated with social perception performance.

Subjects were 30 patients (10 women, 20 men) participating in an inpatient treatment program for alcohol use disorders. The average age of the sample was 40.9 ( $SD= 10.15$ ), and subjects had a mean of 12.47 ( $SD = 1.63$ ) years of education. An average of 28.5 days ( $Range = 17-60$ ) had elapsed since their last drink. Subjects were interviewed and then administered a brief neuropsychological battery. Subjects were compensated with a \$30.00 retail store gift card that had been approved by their treatment facility.

Across the sample, the overall social perception score was significantly lower than age-corrected normative scores. Subjects performed significantly worse than the normative sample on the *Affect Naming* and *Pairs* subtests, but not on the *Prosody* subtest. BDI-II scores were negatively associated with scores on the *Pairs* subtest.

These findings are consistent with previous literature documenting social perception deficits among individuals with alcohol use disorders. Generally, psychiatric symptoms were not associated with social perception performance, with the exception of depression symptoms. Limitations of the study and implications for future studies will be discussed.

**POVERTY IN A SEA OF WEALTH: ARTHUR FLETCHER  
IN CALIFORNIA, 1959-1965**

David Hamilton Golland  
Assistant Professor  
History  
College of Arts and Sciences

**ABSTRACT**

In 1959, Arthur Fletcher—a former professional football player and mid-level Kansas politician—moved to California. He was down on his luck, and things soon went from bad to worse. He made few inroads in Sacramento as the conservatives of his Republican party—including racist John Birchers—marginalized liberals and moderates. He suffered personal tragedy: his wife committed suicide, jumping off the Bay Bridge. Fletcher now found himself a single parent in a Berkeley housing project. As far as he had come from childhood poverty in segregated Junction City, Kansas, Fletcher was back to square one. But he had an incredible tenacity and drive—and more than a few political connections. He resolved to use politics to improve the lot of his fellow man, especially the black man. He took a job as a teacher in an inner-city special needs program, funded by the War on Poverty, and ran for state assembly. Fletcher did well in the race—for a Republican—but lost. He moved to Pasco, Washington, founding a black self-help group and winning a city council seat. This brought the attention of Richard Nixon, who in 1968 was looking for a civil rights program that jibed with the Republican Party's corporatist ethos. President Nixon appointed Fletcher to the Labor Department, where he implemented the Revised Philadelphia Plan, earning himself the title "father of affirmative action."

Fletcher's experience was hardly typical of civil rights leaders. He preferred to work inside the system, with all the acceptance of it that that implied. But he knew what life was like in the ghetto, and resolved to put his insider's skills to the task of undermining the very system he served. His years in California, which proved the most trying of his life, were formative, and are the subject of this paper.

# **METAGENOMIC AND PHYSIOLOGY BASED ANALYSIS OF BACTERIAL COMMUNITIES FROM DIFFERENTLY MANAGED SOILS**

Timothy C. Gsell  
Professor  
Biology  
College of Arts and Sciences

## **ABSTRACT**

Management of soil usually has a profound effect on the bacterial communities residing within them. In many cases the supplemented nitrogen and phosphorus from fertilizer into some managed soils has dramatically impacted microbial diversity, causing species shifts in soil that crop plants rely on for health and growth. In this study the bacterial communities of 3 historically differently managed soils were tested with meta-genomic and physiology based approaches. These two analyses were supported by data collected for total bacterial counts and diversity indices data comparison among them. The three different soil practices included organically farmed, conventional farmed and human derived biosolid waste application. Prairie restoration soil was also collected and composited for analysis and represented another management practice in non-agriculture land use. All management practice based field sites were located on the Governors State University campus. Metagenomics data includes an extensive analysis of all bacterial phyla in the genetic material recovered from the field samples with relative abundances of the major representative types. The relationships between sites were determined. Biolog Eco-plates determined community level physiological changes in bacterial carbon usage patterns by resident cells in each sample type. A Kruskal–Wallis test was performed on the sites and significance was found for both total bacteria and diversity ( $p < .05$ ). A post Dunn test was performed and it revealed the organic plot was significantly high diversity but also significantly lower total bacteria compared to that of the biosolid plot. PCA was run to determine similarity between Biolog Ecoplate data and showed differences between soil types from the differently managed sample sites. Molecular data analysis suggests some uniformity between major soil bacterial types between samples. Small differences in bacterial phyla representation between all different managed soils and were surprisingly similar to the prairie restoration soil samples.

# THE DIGITAL LONG JUMP: TRANSMEDIATIZATION OF PRE-CONFLICT ALTERNATIVE CULTURE IN THE FORMER YUGOSLAVIA

Deborah James  
Assistant Professor  
Media Studies  
College of Arts and Sciences

## ABSTRACT

Media captured the 1970s and early 1980s Yugoslavia challenged the status quo of the socialist culture, explored contemporary themes, examined social tensions and contradictions, adopted influences of the U.S., and supported a hyperlocal culture. Inter-republic Yugo film festivals, co-productions, and distribution were common practices (Goulding, 2002). Combining visual research methods, observation, and personal interviews in Belgrade, Serbia (a center of alternative media production in the region and former capital of Yugoslavia), this research examines – what made it over the wall after the fall – the persistence of alternative media created during these years. The research finds that this digital revival is not an act of nationalistic nostalgia, but the development of an emerging post-nation culture of practice that challenges the simplistic memories of the past reconstituting a public memory of diverse perspectives, artistic interpretations, and lived experience of displacement and conflict. Outcomes of this project include a transmedia project consisting of a short documentary film and video installation.

Goulding, Daniel J. (2002). *Liberated cinema: The Yugoslav experience, 1945-2001*. (2<sup>nd</sup> ed.). Bloomington, IN: Indiana University Press.

### Documentary Synopsis:

20 years after the breakup of the country in the midst of civil war, we follow three characters as they search for meaning in creating the images, sounds, and practices of artistic expression during a transitional period of social experimentation and informal creative networks in which the country was opening to external influences and on the verge of collapse. Starting with an art show, *The Last Young Yugoslavs 1977-84*, held at the Museum of Yugoslav History in 2012, this film looks for evidence of the ‘golden age’ of popular culture (music, art, cinema) in today's ex Yugoslavia.

## CHARACTERIZATION OF INTERACTIONS IN METAL ION – PEPTIDE CLUSTERS

Joong-Won Shin  
Assistant Professor  
Chemistry  
College of Arts and Sciences

### ABSTRACT

Structures of electrosprayed metal ion – tripeptide clusters, are characterized through tandem mass spectrometry and density functional theory (DFT) calculations. Alkali metal ions form  $[M\cdot\text{peptide}]^-$  ( $M = \text{Li, Na, K, Rb, and Cs}$ ) clusters upon complexation with peptides, and their collision-induced dissociation products are ion-size dependent.  $[\text{Li}\cdot\text{peptide}]^+$  and  $[\text{Na}\cdot\text{peptide}]^+$  dissociate through peptide fragmentation whereas  $[\text{Rb}\cdot\text{peptide}]^+$  and  $[\text{Cs}\cdot\text{peptide}]^+$  primarily involves the loss of metal ions; the differences are the result of differing binding strengths between the ion and peptide ligand. In the case of alkaline earth and transition metals,  $[M\cdot\text{peptide-H}]^+$  ( $M = \text{Ca, Sr, Ba, Cu, Fe, Zn, Mn, and Eu}$ ) clusters rather than the doubly charged  $[M\cdot\text{peptide}]^{2+}$  are generated through the electrospray ionization method. Their dissociation mechanisms involve peptide bond fragmentation, and the loss of metal ions is not observed.  $[\text{Cu}\cdot\text{peptide-H}]^-$  generates a number of product ions that are not observed for other clusters, suggesting that its structural property is unique; DFT calculations suggest that the metal ion adopts a weakly negative charge upon complexation with the peptide due to the unusually strong ion-ligand binding interaction.