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Oswald Research and Creativity Program

UK Office of Undergraduate Research

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Oswald Research and Creativity Program

Any current UK undergraduate (full- or part-time, enrolled for either semester) who does not already have a four-year degree is eligible for this competition and may submit papers and other projects in the following categories:

1. Biological Sciences
2. Design (architecture, landscape architecture, interior design, etc.)
3. Fine Arts (film, music, painting, sculpture, videotape, etc.)
4. Humanities: Creative
5. Humanities: Critical Research
6. Physical and Engineering Sciences
7. Social Sciences

Entries are judged on originality; clarity of expression; scholarly or artistic contribution; and the validity, scope, and depth of the project or investigation.

The following are representative winners in the 2003-2004 Oswald Research and Creativity Program.

(Extended versions of these entries are included on-line at www.uky.edu/kaleidoscope/fall2004.)

CATEGORY 1:

Biological Studies:

1st Place

NAME: Fabiola Djojo

TITLE: West Nile Virus in the common house sparrow in central Kentucky



We analyzed blood samples collected from house sparrows (*Passer Domesticus*) for the presence of West Nile Virus (WNV). WNV is an RNA virus, so we performed RNA extractions on the samples and used reverse transcription to copy any RNA into DNA, which is much more readily manipulated in the laboratory with standard molecular techniques such as polymerase chain reaction (PCR). We used PCR to amplify a segment of the DNA known to correspond to part of the WNV genome. Gel electrophoresis was then used to visually confirm the presence or absence of WNV. Samples producing a band at the correct location were considered positive for WNV. We found that 38 of 133 house sparrows tested were positive. The gender of the bird and the type of primer we used had negligible effects on the rate of infection, but age of the bird, month the sample was collected, and location of the bird had significant effects. Younger birds, especially juveniles, had higher rates of infection, and most cases of WNV occurred in July, one month prior to the peak of human cases in Kentucky. In summary, WNV is indeed present in house sparrows in central Kentucky, particularly juveniles. Moreover, the timing of the peak infection rate suggests that an outbreak

in house sparrows may foreshadow an outbreak of human cases. Thus, detection of WNV in field-collected specimens, as done here, may act as an early warning system allowing us to better time mosquito control or other measures that might prevent transmission and disease among humans.

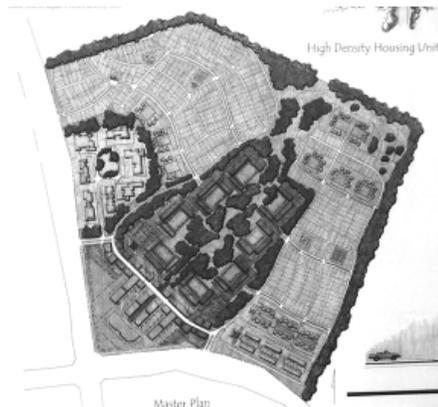
CATEGORY 2:

Design:

1st Place

NAME: Andrew Watson

TITLE: Incorporating Housing/ Residential Use With Commercial and Industrial Areas



Blue Grass Heights Design Concept.

Bluegrass Heights is a greenway community designed to provide a comfortable environment in which to live, and enjoyable place to work, a center for entertainment, shopping, and eating all designed around a greenway link to nature and outdoor recreation.

The objectives are:

- Utilize and protect environmentally threatened areas on site as a protected greenway unobstructed by automobiles that connects to the larger greenways system leading to the Kentucky Horse Park.
- Greenway provides a non-vehicular route for neighborhood residents to access the main commercial area as well as for outdoor recreation and nature preserve.
- Create amenities for all neighborhood residents while discouraging through offsite traffic on local streets. High density units create private recreational greens for occupants; town homes and garden apartments form similar spaces to create a sense of place for occupants, while medium density houses have private lots with small recreational parks dispersed throughout the neighborhood for children.
- Boulevards with open greens, planted with street trees on either side provide views down ridgelines and pedestrian access to the central greenway.
- Commercial/Professional practices accessible to pedestrians and automobiles throughout with a central pedestrian corridor leading toward and from the greenway. Mixed/stack zoning creates diverse interaction and walkable ease from place to place.
- Create a commercial/retail center with large and small retailers, boutiques, restaurants, and entertainment such as in IMAX Theatre and other unique entertainment venues. Maintain existing fence rows on northern and eastern property boundaries for aesthetic views with roads designed for possible links to adjacent future development.

CATEGORY 3

Fine Arts:

1st Place

NAME: Mary Lamb Nehring

TITLE: Jubilation (quilt painting)

—shown on the inside back cover

Mono print on silk and cotton

Assorted embellishments

This piece exudes joy and happiness — the feelings of pleasure and accomplishment. I devised this process while studying mono printing with Ross Zirkle last spring. I am a textile artist and tried to interpret the techniques that he taught into my medium, which is art quilts. “Jubilation,” completed in January of 2004, was a focal point in my BFA solo show entitled “Soft Reflections.” “Jubilation” was one of a group of quilts and mono-prints that I created for that graduation show. My deep and abiding love of art glass profoundly influenced me in creating “Jubilation.” Over the years I have yearned to impart glassine qualities into my quilts. Perhaps this textile expresses my emotions towards a journey that I completed in May, 2004.

My traditional training in quilting provided me a firm foundation while simultaneously and unintentionally constraining me. The concepts of layering, coloring, stitching and piecing have informed me, guided me, and offered me insight to explore to new and exciting places. This show represents a conscious attempt to break through preconceived boundaries and explore what for me are new and unconventional regions. For example, my earlier quilts all honored conventional ken, and featured straight edging. Now I purposely allow the fabric and shapes to inform me as to preferred locations and boundaries.

Perhaps the most challenging endeavor in my journey of growth was to impart the crystalline qualities that I so much admire in art glass into an opaque medium such as fiber. Traditional experiments with sheer silk and other transparent textiles proved to be enlightening but unfulfilling. Ultimately I settled on the following formulation:

1. Mono print with black ink onto white cotton
2. Ghost print onto sheer silk
3. Dye paint both layers
4. Add foiling and other embellishments to the cotton layer
5. Quilt the cotton layer
6. Add the silk layer, quilt the entire piece and embroider the finished product.

The result becomes two layers printed from the same mono print plate with duplicate, yet different images. Foiling and embellishments reflect through the individual layers adding depth, and offer the soft reflections suggestive of art glass.

My sincere thanks go to the following U.K. faculty members: Arturo Alonzo Sandoval—for putting the insane notion into my head that I actually possessed the talent, determination, creativity and capability to complete this degree program.

Ross Zirkle—for introducing me to the field of mono printing and encouraging me to make art for me and in my own definable style. Ross taught me that something as incredibly messy as oil based black ink could be used on fine silk. My hands have looked like a potato farmer’s ever since.

CATEGORY 4:

Humanities: Creative

1st Place

Name: Eric Rickert

TITLE: A Collection of Poetry

The entire collection is available in a print edition and the on-line version of the journal at www.uky.edu/Kaleidoscope/fall2004.



CATEGORY 5:

Humanities: Critical Research

1st Place

Name: Vanessa Johnson

TITLE: Anthony Van Dyck’s Construction of Identity through Self-Portraiture

In 1613, at the age of 14, Anthony Van Dyck painted a simple self-portrait. This was the first self-portrait of his prolific career. He would later become the premier portraitist of Northern Europe and court painter to many monarchs. He would train with Peter Paul Rubens, the most famous artist of his time, and become a master in the painter’s Guild of St. Luke. Van Dyck’s construction of his identity would be affected by his experiences and would change as he matured into the artist he is remembered as. His identity would be influenced by his teacher, Rubens, his lifestyle, and his experiences.



In 1610, Van Dyck was apprenticed to the painter Hendrick Van Balen in Antwerp. Under his direction, Anthony painted his first self-portrait. A century earlier another young painter, Parmigianino, had painted a similar self-portrait to show his skill and to practice imitating reality. In this early self-portrait, Van Dyck’s identity comes from his middle-class upbringing, family support, and natural talent that made his attempt at an artistic career relatively easy. The painting speaks of his great skill without any other visual clues about him. Here Van Dyck is already displaying his pride by viewing us expressionlessly and as if he has been interrupted.

In 1618 Van Dyck became a Master in the Guild of St. Luke and began his work in Rubens’ studio as principal assistant. Rubens was a man of learning and a highly regarded artist who painted monarchs and aristocrats. His life modeled to Anthony the need to act and portray oneself as aristocracy if he wanted commissions from them. Their work was different, as were their personalities, but Rubens’ lavish lifestyle and stately manners would influence the way Van Dyck would paint himself later.

Following his stay in Rubens’ studio, Van Dyck went to Genoa, Italy where he found noble families without a portraitist. The self-portraits he painted during his time in Italy reflect his life at the time. He was influenced by Venetian

styles and began to paint with different brushstrokes. He also painted himself in rich clothing, in the stance of aristocracy, and, in one self-portrait, with a gold chain which was a gift from the Duke of Mantua, one of his patrons. Taking his cue from Rubens, he painted himself in a stately way, not only to show his rising status, but also to continue trying to increase it.

After his return from Italy, Van Dyck went to England where he became court painter for Charles I. He lived lavishly, with servants, and was even knighted in 1632. It was during this time that he painted his "Self-portrait with a Sunflower." The sunflower represented the relationship between monarch and citizen and it also represented the artist's turn to nature for his inspiration, as the flower turns to the sun. In one interpretation he illustrated his role at court and in the other his talent as an artist. Either way, he was constructing his identity based on his status. His pose here is similar to his first self-portrait, but the added details tell the viewer how much he has accomplished since age 14.

What we can learn about Van Dyck from his self-portraits is very valuable. His identity came from what he had done and what he wanted to do. His construction of identity not only showed him as what he was, in his own mind and to others, but also as what he aspired to be.

**CATEGORY 6:
Physical and Engineering Sciences
1st Place**

**Name: Caroline Strasinger
TITLE: Gas Foaming in Preparation of
Polymer Composites**

**CATEGORY 7:
Social Sciences
1st Place**

**Name: Ann Marie Hartell
TITLE: The Landscape of Retail Liquor
Stores in Lexington, Kentucky**

Liquor stores are a relatively common sight on the Lexington landscape. They are found in rich and poor neighborhoods, old and new buildings, as stand-alone structures, in strip malls, or as appendages to grocery superstores. Their commonness indicates that they are not anomalies, but rather an integral part of the city's physical, commercial, and cultural fabric.



During the fall of 2003, 25 of the 49 outlets holding retail package liquor licenses were visited, with special attention to signage, site layout, and store architecture. Given the strict regulatory control of the retail liquor trade, much of the evolution in physical appearance, business structure, and spatial pattern of liquor stores can be explained by changes in Kentucky liquor law. These regulations are rooted in societal attitudes, and may be evidence of attempts at social control. Close regulation also facilitates taxation by the state.



Source: Polk's City Directory.

Liquor stores have certain characteristics in common, particularly with regard to exterior signage. Because stores vary widely in style, size, and setting, they use prominent signage to identify themselves. Typically this includes neon in the windows, plastic banners featuring brand logos, and the word 'liquor' prominently displayed (often more prominently than the business name). Another common element is the presence of security measures ranging from exterior cameras, to window grates, to patrolling security guards. Liquor stores favor corner locations where they have maximum visibility. This can mean an actual street intersection or a contrived street corner at the end of a strip mall.

An examination of the ownership structure, size, and product mix of licensed liquor stores revealed three types of liquor stores: independents, large chain, and general stores that include liquor in their merchandise mix. Independents tend to occupy older buildings in the older central city. Many independents function as neighborhood gathering places permitting on-premise beer consumption in a tavern atmosphere. Large chain stores (e.g. Liquor Barn) only offer liquor for sale for off-premise consumption, but also prominently feature party supplies and deli products. These stores provide shopping carts to their customers, hinting at an emphasis on volume sales, and their site design is completely oriented toward serving customers arriving by automobile. Predictably, these stores are found along major commuter routes. General stores holding package liquor licenses are typically national drug store chains (e.g. Rite Aid). They prefer strip mall locations, but occasionally are attached to and operated by a major supermarket. The relationship between new construction and larger and more diverse businesses reflects a national trend toward increasing scale in retail operations, which means higher profits to offset the high rent costs associated with new commercial construction. Further aiding this trend, Kentucky recently deregulated the retail liquor business, allowing general merchandisers to hold retail liquor licenses. The combination of deregulation and economic factors favoring large-scale business has made it more difficult for independent liquor stores to compete. This is evidenced by an increase in the number drug stores in Lexington and, at the same time, a decrease in the number of specialty liquor stores.