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10th Annual Governors State University Student Research Conference Proceedings

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Proceedings of the 10th Annual GSU Student Research Conference
Governors State University

Wednesday, June 9, 2004
9 a.m. — 5 p.m.

Editor:
Dr. Shelly Kumar
Division of Science
College of Arts and Sciences
Proceedings of the 10th Annual GSU Student Research Conference

Governors State University
University Park, IL 60466

June 9, 2004

Editor
Dr. Shelly Kumar
Division of Science
College of Arts and Sciences
Governors State University

College of Arts and Sciences
College of Business and Public Administration
College of Education
College of Health Profession
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>President's Message</td>
<td>4</td>
</tr>
<tr>
<td>Conference Steering Committee Message</td>
<td>5</td>
</tr>
<tr>
<td>Keynote Speaker Biography</td>
<td>6</td>
</tr>
<tr>
<td>Abstract: Keynote Address</td>
<td>7</td>
</tr>
<tr>
<td>Program Summary</td>
<td>8</td>
</tr>
<tr>
<td>Conference Program</td>
<td>9</td>
</tr>
<tr>
<td>Abstracts of Papers</td>
<td>11</td>
</tr>
<tr>
<td>Student Participants</td>
<td>18</td>
</tr>
<tr>
<td>Faculty Sponsors</td>
<td>19</td>
</tr>
<tr>
<td>Conference Steering Committee</td>
<td>20</td>
</tr>
<tr>
<td>Acknowledgments</td>
<td>21</td>
</tr>
<tr>
<td>Notes</td>
<td>22</td>
</tr>
</tbody>
</table>
June 9, 2004

Dear Student Researcher:

Welcome to the Annual Governors State University Research Conference. And congratulations to you and your teachers.

No matter the subject of your research, I think each participant has already experienced some of the same joys of research. There is the sense of satisfaction in making connections between two sets of facts that once seemed so dissimilar. There is the pleasure that comes from solving an intellectual puzzle. And there is the sense of completion from sharing a discovery with others.

I'm sure you will again experience those positive feelings at your conference today.

Enjoy the day. And thank you for contributing to the scholarship and intellectual life of Governors State University.

Sincerely,

[Redacted]

Stuart I. Fagan
President
A MESSAGE FROM THE CONFERENCE STEERING COMMITTEE

The steering committee is pleased to announce the 10th Annual GSU Student Research Conference to be held on June 9, 2004. In the past conferences, the quality of the presentations was at par with presentations at professional conferences. This conference has become a tradition in excellence, and we are confident that today again we will witness another session of quality presentations by our students. This conference will be presented in its original format and with its original objectives:

1. To provide students an opportunity to present their research work before an audience of their peers, and to use the comments they receive to improve presentations made at professional conferences.

2. To provide a forum to highlight research accomplishments at GSU, and honor students presenting their research work.

3. To generate enthusiasm among the student body in general, and encourage them to pursue research and other scholarly activities.

4. To enhance communications in the area of research among the four colleges at GSU. The interactions may also lead to collaborative work among students and faculty of different colleges.

5. To enhance the image of GSU in the area of teaching, as research is considered an integral part of teaching at the university level. In the long run a larger number of students attracted to research would enroll at GSU to pursue higher education.

The committee hopes that you will enjoy the conference, that you share in the excitement of doing research, and that you will look forward to participating in future student and professional conferences.
KEYNOTE ADDRESS

The Student Research Conference Steering Committee is proud to announce that the keynote speaker for the lunch will be:

Ghanshyam N. Pandey

Professor
Department of Psychiatry
University of Illinois at Chicago
Chicago, IL

Dr. Pandey obtained his MS degree in Chemistry from Birla College Pilani (University of Rajasthan) and obtained his Ph.D. degree in Biological Chemistry from the University of Rajasthan Jaipur, India in 1968. He came to the United States in 1969 worked as a postdoctoral fellow at Temple University in Philadelphia and as an instructor in the Department of Psychiatry, University of Pennsylvania until 1973. He moved to the Illinois State Psychiatric Institute in Chicago as Director of Biological Research Laboratories in 1973 and became Professor with tenure in the Department of Psychiatry at the University of Illinois in 1980, a position he currently holds.

Dr. Pandey’s major research interest has been the neurobiology of major mental disorders and suicide and the mechanism of action of psychoactive drugs. He has pursued his research interest ever since he joined the Department of Psychiatry at the University of Pennsylvania.

One of the major hypotheses of Dr. Pandey’s research interest has been that there is an abnormality of monoamine receptor and receptor linked signal transduction systems in the pathophysiology of mood disorders. In the early seventies, Dr. Pandey was the first to report abnormalities in adrenergic receptor in the blood cells of depressed patient and found that one of the mechanisms of action of antidepressant drugs may be related to their affects on adrenergic receptors as he found that all antidepressants cause downregulation of beta adrenergic receptors in rat brain after chronic treatment. Examining the mechanism of action of lithium he elucidated the mechanism of Li transport in red cells and demonstrated red cell abnormalities in bipolar patients and that this abnormality was under genetic control. He also developed a sample in vitro method to predict lithium response in patients. Investigating the neurobiology of suicide, he demonstrated that one of the serotonin receptor subtypes known as serotonin receptors is increased in both postmortem brain of suicide victims and platelets of suicidal patients victims.

Dr. Pandey has been a member of various study sections of the National Institute of Health, is a member of the Editorial Board of several journals, such as Neuropsychopharmacology, he is a fellow of the American College of Neuropsychopharmacology, Collegium International Neuropsychopharmacologicum and member of several other professional societies. Dr. Pandey’s research has been supported by several grants from the National Institute of Health (NIH) since 1980. Dr. Pandey has also been involved in various community activities, he’s a past President of Association of Indians in America, Illinois Chapter, is currently Chairman, Board of Trustees of AIA Chapter and National Vice President of AIA. He is also one of the founders of the Association of Scientists of Indian Origin in America and its past President.
Mental disorders is a devastating form of illness, which afflicts a large number of populations not only in the United States but throughout the world. If not treated properly these disorders result in attempt and completion of suicide. Mood disorders which includes depression and manic depressive illness are one of the major mental disorders. Earlier, it was believed that these disorders are caused due to psychological and environmental factors and that this could be treated with psychotherapy. In the last several decades it became apparent that there is a biological basis, that is, biological abnormalities associated in the brain of these patients. It was found that those subjects who were treated with reserpine for hypertension developed a syndrome, which was very similar to depression. Since reserpine causes depletion of several neurotransmitters including norepinephrine (NE) it did become apparent that the deficiency in NE may be associated with depressive illness. Further, support to this hypothesis was provided by the observations that drugs which benefit depression caused changes in the levels and functions of the neurotransmitters such as NE. Furthermore, it was observed that not only the neurotransmitter NE but also another neurotransmitter known as serotonin (SERT) whose deficiency may also be involved with depressive illness. Some drugs like Prozac produced their antidepressant effects by interfering either with the metabolism of SERT or by acting on the SERT receptors or the SERT receptors linked signaling system. More recent studies with the postmortem brain of depressed and suicidal patients have elucidated the specific molecular mechanisms, which may be associated with depressive illness and suicidal behavior. It has also been found that teenage depression and suicide may be different in some respect from adult suicidal behavior. Since teenage suicide is a major public health problem certain investigations in the postmortem brain of teenage suicide victims has revealed abnormalities in the SERT system and SERT linked signaling system in their brain. It also became apparent that these abnormalities may be similar in some respects and different with others. These neurobiological studies with depressed patients and in the postmortem brain may result in a better understanding of the causes of mental disorders and may also provide better understanding for the development of more appropriate and suitable therapeutic intervention.
PROGRAM SUMMARY

Sherman Music Recital Hall:
8:30 A.M. – 9:00 A.M. Conference Registration
9:00 A.M. – 9:20 A.M. Welcome and Introduction
9:20 A.M. – 10:20 A.M. Podium Presentations
10:20 A.M. – 10:40 A.M. Refreshment Break
10:40 A.M. – 11:40 A.M. Podium Presentations
11:40 A.M. – 11:50 A.M. Certificates Presentation to Student Participants

Hall of Honors:
11:50 A.M. – 12:10 P.M. Poster Presentation
12:10 P.M. – 1:10 P.M. Lunch

Sherman Music Recital Hall:
1:10 P.M. – 1:20 P.M. Greetings and Introduction of Speaker
1:20 P.M. – 2:00 P.M. Keynote Address, Dr. Ghanshyam N. Pandey
2:00 P.M. – 2:05 P.M. Concluding Remarks
CONFERENCE PROGRAM

Conference Registration
8:30 A.M. Sherman Music Recital Hall

Program Commencement
9:00 A.M. Welcome and Introduction:
Dr. Shelly Kumar
Division of Science
College of Arts and Sciences

Greetings:
Dr. Paul Keys, Provost

Podium Presentations
Sherman Music Recital Hall

Session I Moderator:
Professor Cynthia Carr
Division of Nursing and Health Sciences
College of Health Professions


10:00 A.M. "PHENOLOGY AND EFFECTS OF COMPETITION ON PITCHER PRODUCTION AND MORPHOLOGY IN Sarracenia purpurea L.", Part I, Yvonne E. Stokes, John A. Yunger, and Mary E. Carrington*, Environmental Biology, Division of Science, CAS. p 14.

10:20 A.M. Refreshment Break

Session II Moderator:
Dr. Clyde Winters
Division of Education
College of Education


11:00 A.M. "ADVERTISING EFFECTIVENESS: A CLOSER LOOK AT AON CORPORATION AND BUSINESS INSURANCE", Tina Vasilakis, Ana Kong *, Communication Studies, Division of Liberal Arts, CAS. p 16.

Certificates Presentation  Sherman Music Recital Hall

11:40 A.M.  Dr. Paul Keys, Provost

Poster Presentation  Cafeteria Annex


Conference Lunch  Cafeteria Annex

12:10 P.M.  Lunch

Keynote Address  Sherman Music Recital Hall

1:10 P.M.  Greetings

  **Keynote Speaker**
  Dr. Ghanshyam N. Pandey
  Department of Psychiatry
  University of Illinois at Chicago

  Speaking on

  “Biological Basis of Major Mental Disorders”

2:00 P.M.  Concluding Remarks

  Dr. Shelly Kumar
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Governors State University
University Park, Illinois
LATINA/O IMAGES IN AMERICAN CINEMA

Joseph Berlanga and Dr. Emmanuel Alozie*
Communications and Training
Media Communications, CAS

ABSTRACT

As a Latino student of Media Communications, this media observer is interested in researching the prevalence of negative Latina/o portrayals in American cinema. Characterizing these portrayals as “negative” means to imply the deliberate use of stereotypical images in popular commercial films that foster inaccurate and misleading impressions of who Latinas/os are and what their historical role has been in the United States. Latina/o portrayals in the media have been largely distorted and stereotyped representations of who they are as a people and what they have contributed to society. So much of what has gone wrong is directly tied to the conscious, and unconscious, attempts to maintain the current structure and relationships of power and domination in American society. The nature, character and impact of these power relationships are projected onto our movie and television screens, as well as our collective psyche as a people, by the media.

Included in this cultural analysis will be a review of semiotic theory, popular film text analyses, media education research literature, as well as references to and discussion of the most prevalent and negative Latina/o portrayals in American cinema. Research methods for this cultural analysis include a review of research literature, appropriate methods of media analysis, as well as a review and textual analysis of selected film samples. Some experimental pedagogic approaches to addressing these problems of cultural clash and misrepresentation are also reviewed and discussed. Hopefully, the media will begin to change toward a more balanced view of America and its people.
NICE TRUMBO: POSITIVE MERGER BETWEEN DUNKIN DONUTS, BASKIN-ROBBINS, AND TOGO'S

Maher Hussieni and Hikki Heino*

Finance,
Division of Business Administration, CPBA

ABSTRACT

Management usually tries to increase the size of their firm's earnings and profits. Increasing the profits and the size of the market share by acquiring other firms in the industry could be the best strategy to attain such a goal. Managers and owners of firms try to maximize their firms' value with acquisitions, as a faster, more reliable, and easier tactic to achieve the best gain in the market, as with the merger between Dunkin' Donuts, Togo's, and Baskin-Robbins in the beginning of 1999 demonstrated.

Allied Domecq Quick Service Restaurants (ADQSR) is part of Allied Domecq Public Limited Company (ADPLC) which manages the fast food operations for the mother company based in England. From its main office and headquarters located in Randolph, Massachusetts, ADQSR controls one of the largest quick service companies worldwide with more than 11,000 worldwide units in more than 34 countries.

We’ll see a positive acquisitions synergy that ADPLC has made on the international level and how these positive acquisitions are taking place in today's market.
PHENOLOGY AND EFFECTS OF COMPETITION ON PITCHER PRODUCTION
AND MORPHOLOGY IN Sarracenia purpurea L.

Yvonne F. Stokes, John A. Yunger, and Mary E. Carrington*

Environmental Biology
Division of Science, CAS
Governors State University

D. Liane Cochran-Stafira
Department of Biological Sciences
Saint Xavier University

Part I: Podium Presentation
Part II: Poster Presentation

ABSTRACT

Pitcher production and measurements on pitcher parameters have been recorded over the past 3 years for Sarracenia purpurea L. plants growing in the strings and fens (sedge mats) at Cedarburg Bog, Wisconsin. We speculate that not only is S. purpurea decreasing its investment in the number of pitchers produced in the reduced-light environment of the strings, but also is maximizing the photosynthetic to carnivory potential of existing pitchers. Weather data obtained from the field station is still being analyzed to explain the difference in the onset of pitcher production between the two habitats. Data on soil temperatures (4" and 12" depth) and radiation levels specific to microclimates of plants are needed. Weather data showed a decrease in annual precipitation over the past 3 years with the largest decrease occurring in 2003 of 147.43 mm. The total growing season (June through September, when pitchers are produced) for 2003 had a deficit of 197.96 mm from the previous year. S. purpurea requires rain fall to fill the carnivorous pitchers. During 2003, 10 plants in the study produced phyllodia, whereas only 1 plant in 2002 produced phyllodia which did not produce any phyllodia in 2003. This drastic decrease in precipitation may have prompted phyllodia production in the strings and fens as a phenotypically plastic response to the decrease in rain fall. However, the shift from carnivorous organs to phyllodia could be a phenotypically plastic response to an increase in nitrogen (N) availability (Ellison & Gotelli 2002) and the possibility cannot be ignored.
DEVELOPING OBJECT-ORIENTED MODELS FOR A COMPLEX WEB APPLICATION IN THE N-TIER ARCHITECTURE

Alankar Gaikwad and Soon-Ok Park*

Computer Science
Division of Science, CAS
Governors State University

ABSTRACT

In this project we examine the two aspects in web application development: software architecture and application-specific design. For software architecture, the n-tier architecture is built step by step to remove tight coupling between a web application’s different parts. For application design, many mature design methods exist. We are implementing the object-oriented design methodology. Treating conceptual, navigational and interface design as separate concerns provides not only for a sound ground for web application evolution but also a basis for reuse and shorter development time.

The proposed project is based on n-tier architecture and object-oriented components. The n-tier architecture basically has 4 tiers: a curriculum database, an academic database, an application server (Apache Tomcat 5.0), web browser running JSP pages in collaboration with JDBC. The application connects to two or more heterogeneous database servers to extract the data and produce the desired results. The application design allows addition of tiers in the form of same or different databases without undergoing any major change in the programming code. Object-Oriented components are built in Java and implemented using JavaBeans and JSP. This application can be very useful in connecting two or more heterogeneous databases or transferring data from one database to another.
PRINT ADVERTISING EFFECTIVENESS: A CLOSER LOOK AT AON CORPORATION AND BUSINESS INSURANCE

Tina Vasilakis and Ana Kong*

Communication Studies
Division of Liberal Arts, CAS

ABSTRACT

Business Insurance, a Crain Communications publication, is a weekly newsmagazine reporting the management and financing of corporate risks and employee benefits. Within its pages are many print advertisements of major commercial insurance and insurance-related companies. Aon Corporation and its subsidiaries alone spend more than $1 million each year advertising in this publication. The perennial question is... “Is this investment worth it?”

In this case study, the various elements of Aon Corporation’s advertising campaign in Business Insurance are analyzed and compared to previous research literature on advertising effectiveness, recognition, and recall. Aon consistently scores well in ad studies conducted by Readex, Inc. The primary reason for their high recognition among purchasing influencials can be attributed to the frequency of full page advertisements published within a thematically congruent business publication that is not overloaded with advertising clutter.

With ever-increasing pressures on corporate ad budgets, ad managers and media buyers alike need to understand the most effective means to gain recognition among potential customers. Print advertising can be very expensive. However, if done effectively and efficiently, the benefits to a company’s business – and consequently their bottom line – should be significant.
URBAN MULTIPOLARISM AND SUB-CENTRAL LOCATIONS—A CASE STUDY IN MATTESON, ILLINOIS

Dave Kush and Frances Kostarelos*

Political and Justice Studies
Division of Liberal Arts, College of Arts and Sciences

ABSTRACT

This presentation addresses the changing land use within Matteson, Illinois, where previously agricultural land is being converted into upscale residential housing. The changing landscape is indicative of shifting human activity, and further Matteson’s position within the Chicago Metropolitan area, which enjoys a very specific situation within the national and global economy.

Extensive field research was conducted from June 2003 through June 2004 in order to answer the study phenomenon. This was supplemented with an additional body of literature that informed the data with an analytical perspective. The author considers why Matteson is becoming a “hub” of activity comparable to some of Chicago’s larger suburbs? The second goal was to explore why Matteson’s role has developed along the path observed, the timing of which in particular. Observations were analyzed within the context of relevant literature and useful human geography tools, and correct arguments that assert concentric circles, bid rent theory, and purely economic phenomenon as the explanatory variables for land use.
# STUDENT PARTICIPANTS

<table>
<thead>
<tr>
<th>Student</th>
<th>Major &amp; College</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joseph Berlanga</td>
<td>Communications &amp; Training, CAS</td>
<td>12</td>
</tr>
<tr>
<td>Maher Husseini</td>
<td>Finance, CBPA</td>
<td>13</td>
</tr>
<tr>
<td>Alankar Gaikwad</td>
<td>Computer Science, CAS</td>
<td>15</td>
</tr>
<tr>
<td>David Kush</td>
<td>Social Sciences, CAS</td>
<td>17</td>
</tr>
<tr>
<td>Yvonne F. Stokes</td>
<td>Environmental Biology, CAS</td>
<td>14</td>
</tr>
<tr>
<td>Tina Vasilakis</td>
<td>Communication Studies, CAS</td>
<td>16</td>
</tr>
</tbody>
</table>
## FACULTY SPONSORS

<table>
<thead>
<tr>
<th>Faculty</th>
<th>College</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emmanuel Alozie</td>
<td>CAS</td>
<td>12</td>
</tr>
<tr>
<td>Mary E. Carrington</td>
<td>CAS</td>
<td>14</td>
</tr>
<tr>
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<td>St. Xavier University</td>
<td>14</td>
</tr>
</tbody>
</table>
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Wednesday, June 9, 2004

CONFERENCE STEERING COMMITTEE

Conference Organizer
Dr. Shelly Kumar

College Representatives
Prof. Cynthia Carr, College of Health Professions
Dr. Akkanad Issac, College of Business and Public Administration
Dr. Frances Kostarelos, College of Arts and Sciences
Dr. Clyde Winters, College of Education
ACKNOWLEDGMENT

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