

The College of Arts & Sciences

presents the 7<sup>th</sup>

# SEASTARS

*Scholars of Engineering, Applied Sciences & Technology Annual Research Symposium*

Thursday, April 15, 2010

Commons Conference Center

10 am ~ 12 pm Judging

2 - 4 pm Public Viewing

3 ~ 4 pm Awards Ceremony

[www.uwf.edu/seastars](http://www.uwf.edu/seastars)

## Advisory Committee Members

Dr. Lakshmi Prayaga, Computer Science, Chair

Ms. Julia Babb, Nursing, Co-Chair

Dr. Neill Wallis, Anthropology

Dr. Karen Pritchard, Biology

Dr. Karen Molek, Chemistry

Dr. Ezzat Bakhoun, Electrical & Computer Engineering

Dr. Jason Ortegren, Environmental Studies

Dr. Florentina Tone, Mathematics & Statistics

Dr. Laszlo Ujj, Physics

Dr. Sherry Schneider, Psychology

Dr. Eman El-Sheikh, Coordinator  
Associate Dean, College of Arts & Sciences

# Awards Ceremony Schedule

3:00 – 4:00 pm

- ✘ Welcome and SEASTARS Advisory Committee Recognition  
Dr. Eman El-Sheikh  
Associate Dean, College of Arts and Sciences
- ✘ Recognition of SEASTARS Supporters & Sponsors
- ✘ Department Awards  
“Best of Department” presented by the SEASTARS  
Advisory Committee Members
- ✘ Special Awards presented by Dr. Lakshmi Prayaga & Ms. Julia Babb  
Computer Science Award  
ECE Award  
Gaming Award  
Simulation Award  
Audience Choice Award
- ✘ Graduate Award  
“Best Graduate Poster” presented by Dr. Richard Podemski,  
Associate Vice President for Research and Dean of Graduate Studies
- ✘ Undergraduate Award  
“Best Undergraduate Poster” presented by Dr. Eman El-Sheikh
- ✘ Dean’s Award  
“Best Collaborative Effort” presented by  
Dr. Jane Halonen, Dean, College of Arts & Sciences
- ✘ Provost’s Award  
“Best Research Emphasizing Excellence in Teaching &  
Learning” presented by Dr. Chula King, Provost
- ✘ President’s Award  
“Best of Show” presented by Dr. Chula King, Provost
- ✘ Door Prize Drawings
- ✘ Conclusion

# LIST OF POSTERS

## ANTHROPOLOGY & ARCHAEOLOGY

- 1. Materials of Conquest: Insights from the Metal Artifact Analysis of Two Early Spanish Expeditions**  
Sarah E. Linden
- 2. The use of Natural Tree Sap Resins and Extracts as Stabilizing Agents in Waterlogged Wood**  
Tim Holmes, Dr. John Bratten
- 3. From Terra to Terracotta; Clay sourcing in northwest Florida**  
Mr. John Krebs, Dr. Neill Wallis

## BIOLOGY

- 4. Reef Fish Community Structure at Northern Gulf of Mexico Natural versus Artificial Reefs**  
Moriah Carlyle, Dr. William Patterson III, Dustin Addis, Joseph Tarnecki
- 5. A Filter-Based PMA Technique to Distinguish Live from Dead Bacteria in Environmental Waters**  
Kristen N. Hellein, Elizabeth M. Kennedy, Amanda Morrow, Dr. Joe E. Lepo
- 6. Preliminary Age Estimates of the Endangered Smalltooth Sawfish of South Florida**  
Rachel M. Scharer, Dr. William F. Patterson III, John K. Carlson
- 7. Shell Chemistry as a Natural Tag to Distinguish Wild from Hatchery Reared Florida Apple Snails**  
Kristen A. Dahl, Dr. William F. Patterson III, Philip C. Darby, Amber Garr
- 8. Hemoglobin E: Current Concern in Southeast Asia, Changing Significance for Southeast Asian Americans**  
Hien Nguyen, Mark de Luna
- 9. Effects of Nutrients and Trace Metals in Rain on the Phytoplankton Community in Pensacola Bay, FL**  
Bethany Wight, Dr. Jane Caffrey
- 10. Hook Selectivity in the Northern Gulf of Mexico Reef Fish Fishery**  
Jamie Cherry, Dr. William Patterson, Dustin Addis, Joseph Tarnecki
- 11. Preliminary Analysis of Reef Fish Diet at Natural and Artificial Reefs in the Northeastern Gulf of Mexico**  
Joseph H. Tarnecki, Dr. William F. Patterson III, Dustin Addis

## CHEMISTRY

- 12. Synthesis and Biotransformation of Formestane**  
Scott Shaw, Anne Marti, Dr. Glenroy Martin
- 13. Toxicity of Triclosan and Varying Salinities of Pensacola Bay Water**  
Dr. Pamela Vaughan, Dr. Wade Jeffrey, Kristen Richards, Alie Marie Mallet
- 14. Seasonal Patterns of Ultraviolet Photo-protective Pigments in Phytoplankton**  
Jennifer Glancy, Sharon Blackwell, Crystal Holliman, Dr. Wade H. Jeffrey, Dr. Pamela P. Vaughan

## **COMPUTER SCIENCE**

- 15. A Cooperative Intelligent Agent Architecture for Enterprise Search**  
John V. McCarthy, Dr. Eman El-Sheikh
- 16. Development of a Personal Budgeting Application Using the Waterfall Model**  
Lorena Flores, Dr. Jacalyn Huband
- 17. Use of a Graphics Processor to Enhance Performance in General Purpose Computing**  
Gerald Swann, Dr. Sharon Simmons, Dr. Sukumar Kamalasan
- 18. Xgrid: Exploration of Grid Computing**  
Mariko Young, Dr. Sharon Simmons
- 19. Can your Robot Move? Navigation and Obstacle Avoidance**  
Francisco Moreno Cantero, Dr. Eman El-Sheikh
- 20. Path-finding using Dijkstra's algorithm**  
Billy Abston, David Brett, Andrew Shelley, Dr. Lakshmi Prayaga
- 21. Medic Mania**  
Elizabeth Carnes, Bradley Hoag, Lisa Hilburn, Charlie Perrone, Dr. Lakshmi Prayaga
- 22. Improving the Efficiency of Probabilistic Reasoning**  
Reema Kedambadi, Dr. Eman El-Sheikh
- 23. Analysis of the A\* Search Algorithm: Using AI to Improve Search Effectiveness**  
Carlos Lopez Calvo, Dr. Eman El-Sheikh
- 24. Intelligent Network Traffic Flow Analysis: The "Brains" Of The System**  
John Corliss, Dr. Eman El-Sheikh
- 25. Intelligent Network Data Exfiltration Detection: A Piece Of The Puzzle**  
John Corliss, Dr. Dennis Edwards

## **ELECTRICAL & COMPUTER ENGINEERING**

- 26. Design of a Remote Automation Controller with the CAN 2.0B Standard**  
William Seaman, Dr Mohamed A. Khabou
- 27. Design and Implementation of an Alternative Energy System for Consumer Use**  
Allen Douglas Thompson
- 28. Design of a Room-Mapping Robot**  
Audrey Coleman, Thomas Cantin
- 29. Remote Control Video Camera**  
Daniel Dolfie
- 30. Design of a Self-Powered Weather Monitoring Station**  
Garrett McCabe, Michael Davidson
- 31. Design a Solar Powered System for the Boys and Girls Club Building of Escambia County**  
Ashley Oram, Carol Chanley

## **ENVIRONMENTAL STUDIES**

- 32. GIS in Monitoring Storm Systems along the Gulf Coast**  
Kimberly Baldwin, Dr. John Waldron, Dr. Zhiyong Hu

33. **Shoreline Vegetation and Geomorphology as Predictors of Fish Biogeography**  
Zeviel Persellin
34. **Comprehensive Land Use Planning in the City of Pensacola: A glimpse into the future of Pensacola**  
Tanya Gallagher, Dr. Jason Ortegren
35. **Wildfire susceptibility in Blackwater River State Forest, Florida based on topographical and fuels mapping**  
Toby A. Stapleton

### **MATH & STATISTICS**

36. **LU Factorization of Large Sparse Matrices**  
Matthew Naes, Dr. Jia Liu
37. **Fixed Point Theorems and Applications**  
Xinxuan Li, Dr. Florentina Tone
38. **Cluster Analysis on Cancer Rates of Adults in Florida**  
Michael A. Johnston, Dr. Raid Amin

### **NURSING**

39. **A Multigenerational Profile using the Alleman Mentoring Activities Questionnaire; Results and Implic**  
Patricia Ann Posey-Goodwin, RN, MSN

### **PHYSICS**

40. **Computer Control and Automation of the Dielectric Characterization of Liquid Crystals**  
Shane Drye, Tracy Lawson, Michael Kordell II, Dr. Chandra Prayaga, Dr. Laszlo Ujj
41. **Distribution of Nonuniform Demagnetization Field of Bulk Samples in NMR Spectrum Analysis**  
Ross Dickinson, Dr. Laszlo Ujj, Dr. Timothy Royappa, Dr. Florentina Tone, Dr. Guoqing Wu
42. **Investigation of Stimulated Emission in an Amplifying Laser Medium: An Experimental Approach**  
Timothy Clark, Dustin Smith, Dr. Zengjun Chen, Dr. Laszlo Ujj
43. **NMR investigation on quasi-one-dimensional purple bronze Li<sub>0.9</sub>Mo<sub>6</sub>O<sub>17</sub>**  
Dr. Guoqing Wu, W. G. Clark, S. E. Brown, J. J. Neumeier, C. A. M. dos Santos, J. Marcus, C. Berthier, and M. Horvatic
44. **Understanding Faraday's Law through Non-Conservative Fields**  
Jodie Gray, Jacques Perry, Mauricio Tsukuda, Dr. Laszlo Ujj
45. **Investigation of Dielectric Properties of Liquid Crystals near Phase Transitions**  
Tracy Lawson, Michael Kordell II, Jacques Perry, Holly Renaud, Dr. Chandra Prayaga, Dr. Laszlo Ujj

## PSYCHOLOGY

### **46. Importance of Issues and Candidate Characteristics in the Presidential Election**

Witsinee Bovornusvakool, Sakkaphat T. Ngamake, Alyinth G. Bowen, Mia McMillan, Melissa Lane, Christine Thomas, and Dr. Susan E. Walch

### **47. Religious Commitment and Sexual Attitudes and Behavior Among Undergraduates**

Richard A. Carr

### **48. Mental Training Increases Mindfulness and Moderates Performance Decrement**

Spencer Fix, Jennifer Brace, David Bumgarner, Dr. William Mikulas

### **49. Piloting a novel video maze environment for path integration.**

Spencer Fix, Jameson Beach, Dr. Steven Kass, Lauren Corbett

### **50. The effects of interstimulus intervals on the FVEP-P2.**

Spencer Fix, Jameson Beach, Dr. James Arruda

### **51. The Effects of Transformational and Servant Leadership on Employee Work-Life Balance**

Maren Dollwet, Dr. Sherry Schneider, Dr. Laura Koppes

### **52. Political Knowledge and Political Media Use Among College Students**

Steven V. Walker, Naudia R. Johnson, Charles C. Fischer, Brigette Robinson, Eileen Wolfe, Kaitlyn S. Gillespie, Dr. Susan E. Walch

### **53. Novel Methodology for Non-invasive Measure of Cholinergic Functioning**

Jameson Beach, Spencer Fix, Dr. James Arruda

### **54. Improving the School Experience: Applying Job Characteristics Theory to the Classroom**

Jasmine Y Khosravi, Dr. Steven J Kass, Adam Smith, Christopher A Gregory

## SEASTARS

Scholars of **E**ngineering, **A**ppplied **S**ciences &  
**T**echnology **A**nnual **R**esearch **S**ymposium

The College of Arts & Sciences (CAS) is dedicated to the promotion of student and faculty research, scholarship, and creative activity as a vital component in the curriculum at the University of West Florida. Higher education in science, technology, engineering and mathematics has long been recognized to benefit from research-rich environments and inquiry-based learning. Through the continuation of this annual symposium, the goal of the college is to create a forum for the communication, celebration and promotion of scientific knowledge.

# Special Thanks to SEASTARS Supporters:

Dr. Judy Bense, UWF President

Dr. Chula King, UWF Provost

Dr. Richard Podemski, UWF Associate Vice President for Research and  
Dean of Graduate Studies

Dr. Jane Halonen, Dean, College of Arts & Sciences

## Participating CAS Departments:

Anthropology & Archaeology

Environmental Studies

Biology

Mathematics & Statistics

Chemistry

Nursing

Clinical Laboratory Sciences

Physics

Computer Science

Psychology

Electrical & Computer Engineering

## Additional Judges

Ms. Dianne Harris

Dr. Michael Huggins

Dr. Klaus Meyer-Arendt

Dr. Anthony Okafor

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