



2014 ASEE Zone 1 Conference  
Student Research Posters

11:15am-12:30pm and 1:30pm – 2:45pm, Friday, April 4, 2014  
John J. Cox Student Center Social Room, University of Bridgeport



Poster #	Status	Poster Title, Author Names, and University Name
1	G	<b>Drag Reduction of Automobile Mirror by Moving Glass Location inside its Frame</b> Hayder K. Sakran, Feixiang Ren, Junling Hu <i>University of Bridgeport</i>
2	G	<b>Challenges of Cerebral Palsy Management</b> Areej Alshehri and Christian Bach <i>University of Bridgeport</i>
3	G	<b>Creating Successful Customer Satisfaction How to improve customer satisfaction in the market place your way</b> Fadi Alsaadi, Christian Bach <i>University of Bridgeport</i>
4	G	<b>The Application of Stakeholder Theory to Relationship Marketing Strategy Development in a Non-profit Organization</b> Mamta Bhamre <i>University of Bridgeport</i>
5	G	<b>High-throughput Microfluidic Droplet Dispenser for Lab-on-a-Chip Application</b> Chenghui Jin, Xingguo Xiong , Prabir Patra <i>University of Bridgeport</i>
6	G	<b>Leveraging Discrete Fourier Transform to Reduce Power Consumption in Underwater Wireless Sensor Network Communications</b> Wafa Mohamed, Elmannai, Khaled Elleithy, Ajay Shrestha, Mohamed Alshibli, Reem Alataas <i>University of Bridgeport</i>
7	G	<b>Digital Microfluidic Droplet Adapter for Board-level Biochip Integration</b> Rui Zhu, Xingguo Xiong , Prabir Patra <i>University of Bridgeport</i>
8	G	<b>Authenticated Multiparty Secret Key Sharing Using Quantum Entanglement Swapping</b> Muneer Alshowkan, Khaled Elleithy <i>University of Bridgeport</i>
9	G	<b>Gray-code Digital-to-Analog Converters (DACs) for Glitch Reduction</b> Simon Voigt Nesboe, Xingguo Xiong <i>University of Bridgeport</i>
10	G	<b>Using Quality Control Methods to analyze student-performance fluctuations in educational software</b> James Accuosti, Oludemilade Adewumi, Juliet Ekueme, Elif Kongar <i>University of Bridgeport</i>
11	G	<b>MEMS-Based Complete On-Chip Smart Drug Delivery System</b> Zixun Tong , Xingguo Xiong , Prabir Patra <i>University of Bridgeport</i>
12	G	<b>TERP: A Trusted and Energy Efficient Routing Protocol for Wireless Sensor Networks (WSNs)</b> Marwah Almasri, Khaled Elleithy, Anas Bushang, Remah Alshinina <i>University of Bridgeport</i>
13	G	<b>A New Programming Model to Simulate Wireless Sensor Networks: Finding the Best Routing Path</b> Abrar Alajlan, Khaled Elleithy , Varun Pande <i>University of Bridgeport</i>
14	G	<b>Reconfigurable Multi-Input Multi-Output (MIMO) Micropump for Micro Drug Delivery Application</b> Sk Hasan Hafizul Haque, Xingguo Xiong <i>University of Bridgeport</i>
15	G	<b>A Thermopneumatic Micropump with Double-Membrane Structure for Improved Pumping Rate</b> Kai Liu, Xingguo Xiong <i>University of Bridgeport</i>
16	G	<b>Novel Steganography over HTML Code</b> Ammar Odeh, Khaled Elleithy, Miad Faezipour, Eman Abdel Fattah <i>University of Bridgeport</i>

17	G	<b>A Complete BioMEMS Lab-on-a-Chip for Disease Diagnosis</b> Junyi Zou, Xingguo Xiong, Prabir Patra <i>University of Bridgeport</i>
18	G	<b>COMSOL Simulation of MEMS Piezoelectrically Actuated Micropump</b> Wei Zhan, Xingguo Xiong, Prabir Patra, Junling Hu, Chengsi Li <i>University of Bridgeport</i>
19	G	<b>Adaptive Equalization: LMS, RLS and CMA</b> Badr Alshehry, Ammar Odeh, Eman Abdelfattah <i>University of Bridgeport</i>
20	G	<b>Enhanced Eye Gaze Direction Classification Using a Combination of Face Detection, CHT and SVM</b> Amer Al-rahayfeh, Miad Faezipour <i>University of Bridgeport</i>
21	G	<b>Robust Prediction For Intra and Inter Handoff (Rpiih) Process Over CDMA2000</b> Mohamed Ben Haj Frej, Christian Bach <i>University of Bridgeport</i>
22	G	<b>Environmentally Powered Atmospheric Probe</b> Jayanta Paul, Varun Pande, Manuel Curillo, Ephraim Joseph, Jani Marcari Pallis <i>University of Bridgeport</i>
23	G	<b>A Gait Based Gender Classifier Using Kinect</b> Yan Chen, Yawei Yang, Jeongkyu Lee <i>University of Bridgeport</i>
24	G	<b>Modeling Iced Bio-Bandage Design for Skin Burns</b> Arar Alkhader, Junling Hu, Akinwumi Akinkunmi, Prabir Patra, Xingguo Xiong <i>University of Bridgeport</i>
25	G	<b>Random Word Retrieval for Automatic Story Generation</b> Richard Steven Colon, Prabir K Patra, Khaled M Elleithy <i>University of Bridgeport</i>
26	G	<b>Robot Artist- Automated Picture Portrait</b> Abdulrahman Alkhodairy, Sarosh Patel, Tarek Sobh <i>University of Bridgeport</i>
27	G	<b>Electrospun Composite Nanofibers in Early Detection of Femtogram C- reactive protein (CRP)</b> Xiaonan Liao, Aphale Ashish, Isaac Macwan, Ruoqi Wei, Shalini Prasad, Prabir Patra <i>University of Bridgeport</i>
28	G	<b>Simulation of Turbulent Flow in an Asymmetric Air Diffuser</b> Abubaker Elbaloshi and Junling Hu <i>University of Bridgeport</i>
29	G	<b>Lean Manufacturing and Kaizen: A Study of Japanese and American Approach</b> OLuwaseun Peter Ojo <i>University of Bridgeport</i>
30	G	<b>Applying Lean Six Sigma to Eliminating Bottleneck in Manufacturing by using Value Stream Mapping</b> Basheer Mohammedalamin Alshengety and Elif Kongar <i>University of Bridgeport</i>
31	G	<b>Social User Mining</b> Mohammed Ali Ibrahim Eltaher, Jeongkyu Lee <i>University of Bridgeport</i>
32	G	<b>UB Robot Swarm System: Design and Implementation</b> Madhav D Patil, Tamer Abukhalil, Tarek Sobh <i>University of Bridgeport</i>
33	G	<b>The Giza Pyramids: A History of Wireless Electricity Transmission Validated by Today's Science</b> Tamer Youssef, Khaled Elleithy <i>University of Bridgeport</i>
34	G	<b>Successful Implementation of DMAIC for Food and Beverage Industry</b> Ashwag G. Battarjee, Rana Algaydi, Satyabrata Sau and Elif Kongar <i>University of Bridgeport</i>
35	G	<b>Feedback Controller Design and Test of a Buck- Boost Converter for Photovoltaic Systems</b> Jasim Alfandy, Linfeng Zhang <i>University of Bridgeport</i>
36	G	<b>Energy Storage Using Graphene-Polymer Nanocomposite Thin Film</b> Ashish N Aphale, Ruoqi Wei, Angela Santiago, Prabir Patra <i>University of Bridgeport</i>
37	G	<b>Graphene &amp; Graphene Oxide and amyloid peptides binding and its implications in Alzheimer's disease</b> Ashish N Aphale, Nicholas Huston, Johnson Prophete, Isaac Macwan, Shrinivas Bhosale, Anwesha Bhattacharya,

		Jennifer Cheng, Ishita Mukerji, Prabir Patra <i>University of Bridgeport</i>
38	G	<b>Efficient Sleep Stage Classification Based on EEG Signals</b> Khalid Ali Aboalayon, Helen T Ocbagabir, Miad Faezipour <i>University of Bridgeport</i>
39	G	<b>Critical System Event Prediction in Virtualized Cloud Computing Systems</b> Yuanyao Liu, Zhengping Wu <i>University of Bridgeport</i>
40	G	<b>A Novel Three-axis Comb Capacitive MEMS Accelerometer</b> Zhefu Cao, Zhong Deng, Xingguo Xiong <i>University of Bridgeport</i>
41	G	<b>PLC system for producing perforated music</b> Kishan Gutta, Madhav Patil And Jack Toporovsky <i>University of Bridgeport</i>
42	G	<b>Investigation of Energy Efficient Cluster Based Routing Protocol for Wireless Sensor Network Using Dynamic Nodes with the Comparison of Static Nodes</b> Jsaem H ALmotiri, Salam Al-Khammasi, Dheyaa Alhelal, Abdulshakour A Abuzneid <i>University of Bridgeport</i>
43	G	<b>Mobile Robots Exploration And Mapping in 2D</b> Sithisone Kalaya, Hussain A. Alhazmi, Tarek Sobh <i>University of Bridgeport</i>
44	G	<b>Portable Particulate Matter (PM) Sensor for Air Pollution Monitoring</b> Zhan Zhao, Sk Hasan Hafizul Haque, Roshini Jayavel, Xingguo Xiong <i>University of Bridgeport</i>
45	G	<b>Electrospinning of Flavin Mononucleotide-Functionalized Single-Walled Carbon Nanotubes</b> Ruoqi Wei, Ashish Aphale, Sina Sharifi, Fotis Papadimitrakopoulos and Prabir Patra <i>University of Bridgeport</i>
46	G	<b>Design and Implementation of Metallic Waste Collection Robot</b> Hesham Alsahafi, Majed Almaleky, Tarek Sobh <i>University of Bridgeport</i>
47	G	<b>MD Simulation of Carbon Nanotube &amp; Pulmonary Surfactant Protein Interactions</b> Bhushan V. Dharmadhikari, Yunfeng Jiang, Prabir K. Patra <i>University of Bridgeport</i>
48	G	<b>Computational simulation and analysis of the transverse isotropic property of glycosaminoglycan in collagen</b> Yuying Bi, Prabir Patra <i>University of Bridgeport</i>
49	G	<b>UBSwarm: Design of a Software Environment to Deploy Multiple Decentralized Robots</b> Tamer Yousef Abukhalil, Madhav Patil, Tarek Sobh <i>University of Bridgeport</i>
50	G	<b>Analysis of A Counter Flow Parallel-Plate Heat Exchanger</b> Ruoxu Jia, Junling Hu <i>University of Bridgeport</i>
51	G	<b>Shape Optimization Design And Material Selection For A Fitness Equipment</b> Ruoxu Jia and Junling Hu <i>University of Bridgeport</i>
52	G	<b>Understanding Your Social Security Benefit</b> Xu Yang, Neal Lewis <i>University of Bridgeport</i>
53	G	<b>Improving African Economy through Technology: A case for Technology Forecast</b> Chinedu E Egbunu <i>University of Bridgeport</i>
54	G	<b>A Lab-on-a-chip Device for Telomerase Activity Detection based on ATP Bioluminescence System</b> Chengsi Li, Wei Zhan, Xingguo Xiong, Prabir Patra <i>University of Bridgeport</i>
55	G	<b>Synthesis of Green Nanoparticles from Pomegranate Juice and Peels</b> Sama Abdulaziz Abdulmalik, Prabir Patra <i>University of Bridgeport</i>
56	G	<b>Energy Harvesting Using Nano Fibers PVDF\ Graphene Composite for Medical implanted devices</b> Nazar A Fadhil, Dleer Saber, Paris Cox, Kripa Vanashi and Prabir Patra <i>University of Bridgeport</i>
57	G	<b>Object Tracking Using Autonomous Quad Copter</b> Carlos Munoz, Tarek Sobh

		<i>University of Bridgeport</i>
58	G	<b>A Pen Cartridge Assembly Mechanism</b> Yang Zhai, Zheng Li <i>University of Bridgeport</i>
59	G	<b>Evaluation of Second Generation Digital Video Broadcasting</b> Toufiqur Rahman Chowdhury, Navarun Gupta <i>University of Bridgeport</i>
60	G	<b>Hadoop Based Enhanced Cloud Architecture</b> Hamoud Alshammari, Hassan Bajwa, Jeongkyu Lee <i>University of Bridgeport</i>
61	G	<b>Microcontroller Implementation of Fuzzy Guidance System</b> Ahmed ElSayed, Mohamed Rizk, Tarek Sobh <i>University of Bridgeport</i>
62	G	<b>NETFLIX-Loyal Customer Base</b> Nirmala Devi Jeyakumar, Christian Bach <i>University of Bridgeport</i>
63	G	<b>High-Security, Clone-proof Wireless Access Control with Secure Distance Bounding</b> Eugene P. Gerety, Khaled M. Elleithy <i>University of Bridgeport</i>
64	G	<b>Knowledge Management</b> Reem Mahjoub, Christian Bach <i>University of Bridgeport</i>
65	G	<b>PeerVantage</b> Reem Mahjoub, Adedamola Akinsanya, Wafa Elmannai, Samuel Erskine <i>University of Bridgeport</i>
66	G	<b>Task Based Design of Serial Manipulators</b> Sarosh Patel, Tarek Sobh <i>University of Bridgeport</i>
67	G	<b>SKINcure: A Real Time Image Analysis System to Aid in the Malignant Melanoma Prevention and Early Detection</b> Omar Abuzagheh, Buket Barkana, Miad Faezipour <i>University of Bridgeport</i>
68	G	<b>Building A Strong Brand and Managing Brand</b> Nan Feng, Christian Bach <i>University of Bridgeport</i>
69	G	<b>Wireless Capsule Endoscopy WCE In Digestive System Diagnostics</b> Hussam Ghunaim, Christian Bach <i>University of Bridgeport</i>
70	G	<b>High-Speed Automatic System Design For Inserting Copper Wire Into Plastic Blocks</b> Yuanxiong Luo, Zheng Jeremy Li <i>University of Bridgeport</i>
71	G	<b>The analysis of Ground Source Heat Pump systems cost in small scale supplies situation</b> Wu Shi, Linfeng Zhang <i>University of Bridgeport</i>
72	G	<b>Design of Manufacturing Process of a Part for Tele-Communication</b> Edwin Divakaran Maria Selvaraj, Jeremy Zheng Li <i>University of Bridgeport</i>
73	G	<b>An Adaptive and Automated Framework for the Evaluation of Visualization Tools</b> Douglas Taggart, Adrian Rusu <i>Rowan University</i>
74	G	<b>UNH Health Services Procedures and Patient Data Analysis</b> Aamani Adepu, Nadiye O. Erdil <i>University of New Haven</i>
75	G	<b>Design and Implementation of a Pure Sine Wave Single Phase Inverter for Photovoltaic Applications</b> mohamed ali ali <i>Beni-suef University, Egypt</i>
76	G	<b>PAOL and Lecture-Viewer</b> Ellysha Raelen Recto, Brendan Murphy, Ryan Szeto, Tung Pham <i>University of Massachusetts Amherst</i>
77	G	<b>Multi-University Distributed Collaboration In Smart Car Gaming</b> Walter Buchwald, Nicholas Rosato, Anthony Reid, Nurit Haspel, Andrew Grosovsky, Joel Jean-Claude, Sergio Cunha, Quenica Chen, Jacob Deguire, Caitlin McLain, DeAnna Robear, David McLaughlin, Warren Chan, June

		McCrae, Brian McDonald <i>University of Massachusetts Boston</i>
78	UG	<b>Using a Speaker System to Describe a Phase Array Antenna System</b> BettyRose Santrach, Carlos Palenzuela, Paul Crilly, Richard Hartnett, Ali Reza <i>U.S. Coast Guard Academy</i>
79	UG	<b>VHF Hoax Detection Using the MUSIC Algorithm and Software Defined Radios</b> Danyoung McGarry, Evan Truman, Paul Crilly, Richard Hartnett and Ali Reza <i>U.S. Coast Guard Academy</i>
80	UG	<b>Design of Affordable Wind Shear Detection System</b> Samantha Gildersleeve, Stephanie Norris, Benny Tortorici, Andrew Wilson <i>Roger Williams University</i>
81	UG	<b>Heat Dissipation Design and Optimization</b> Angelica Maria Perzan and Gregory Neville <i>Roger Williams University</i>
82	UG	<b>PERI Construction Exercise Ab</b> Tony Sousa, Freddy Rivera, Patrick Rahm <i>Roger Williams University</i>
83	UG	<b>Site Feasibility Access Project</b> Timothy Clarkin, Meagan Connelly, Noelle Laflamme, Tayla Mello <i>Roger Williams University</i>
84	UG	<b>Desiging a Unique Fog Generation System to Retrofit a Vintage Pinball Machine</b> Richard Mendoza, Brian Stuckman, Anthony Melkonian, Alexander Gilman <i>Roger Williams University</i>
85	UG	<b>Herreshoff Maritime Museum</b> Vanessa Camiolo, Kayla Newton, Zach Turner, Janelle Devereaux <i>Roger Williams University</i>
86	UG	<b>ProjectZero: Designing a Netzero Home</b> Connor Stewart, Jacob Drouse , Felipe Navarro , Nick Mamais <i>Roger Williams University</i>
87	UG	<b>Collapsible Kid Cruiser</b> Zachary Boorman, Richard Freitas, Kristie Kordana, Adam Stanley <i>Roger Williams University</i>
88	UG	<b>Assessing Hygrothermal Performance in Curtain Wall Spandrel Region</b> Collin Crowell, Guleid Mohamood, Cameron Shea <i>Roger Williams University</i>
89	UG	<b>Historical Value Adding Consultants</b> Cameron Wendler, Nick Farland, Justin Taylor, Trevor Larson <i>Roger Williams University</i>
90	UG	<b>Hidden in Plain Sight Wind Energy Conservation System</b> Connor Needham, Jeremy Kacher, Rob Hutchins, Mathias Boyle, Susan Woodard <i>Roger Williams University</i>
91	UG	<b>Mobile Web GPS Application</b> Eric Iannaccone <i>Fairfield University</i>
92	UG	<b>The Role of Mouth Shape on the Fluid Dynamics of Suction Feeding</b> Katherine Mae Pitz, Samantha Canosa, Christopher P. Sanford, Shanon M. Reckinger <i>Fairfield University</i>
93	UG	<b>Automated Manufacturing Delivery System</b> Brendan Peters, Alex Peras, Joseph Mastroluca, Diego Mamani, Jeffrey Denenberg, Shahrokh Etemad <i>Fairfield University</i>
94	UG	<b>Automation of Metallic Ribbon Bending</b> Nicole D'Addio, Darren Mondezie, Rema Bhatti <i>Fairfield University</i>
95	UG	<b>SpinLeaf</b> Claudele Pierre, Colin Nerich, Sharoz Seyal, Robert Governale <i>Fairfield University</i>
96	UG	<b>Development of Medical Device: Infrared Bone Mineral Density and Blood Flow Monitor</b> Michael Raymond, Stephanie Sutherby , Rob Garrone , Joe Musubire , Dr. Munden , Dr. U Etemad <i>Fairfield University</i>
97	UG	<b>Development of Advanced Carbon Fiber Impact Absorption Structure for Formulae F Race Car</b> Timothy Young, Slawek Guzierowicz, Eric Stephen, Chris Smith

<i>Fairfield University</i>		
98	UG	<b>Piezoelectric Generators: Supplemental Power Supply Without Changing Social Behavior</b> Timothy A. Danforth and Dr. Can B. Aktas <i>University of New Haven</i>
99	UG	<b>Water Self-Sufficient Homes</b> Pippa Ellis, Michelle Murphy <i>University of New Haven</i>
100	UG	<b>Photovoltaic Solar Array Implementation and Performance Tracking on Campus</b> Erika Rose Vargas, Christopher S. Meffert, Can "Jon" Aktas <i>University of New Haven</i>
101	UG	<b>Expanding the Overall Efficiency of Tomorrow's Data Centers Through Processor</b> William H Putnam, Christopher Martinez, Alice E. Fischer <i>University of New Haven</i>
102	UG	<b>AFM characterization of Multilayered Graphene film used as Hydrogen Sensor</b> Yuan You, V.N. Lakshmi, S.K. Sinha, D. Dutta, C.K.Sarkar, S. Basu <i>University of New Haven</i>
103	UG	<b>U-RAFT: Single-engine Hovercraft</b> Sean Claffey, Martin Davis, Ryan Simpson, Nick DeMarco, Mike Pasquale <i>Daniel Webster College</i>
104	UG	<b>Collapsible Vertical Axis Wind Turbine (CVAWT)</b> Casey Schaible <i>Daniel Webster College</i>
105	UG	<b>Wave-Source Buoy Generator</b> Craig Bridge, Cory Clark, Scott Hiland, Joshua Ricci <i>Daniel Webster College</i>
106	UG	<b>Automated At Home Brewing System</b> Nathaniel Caulfield Burr, Juan Catano, Daniel Lopez, Rolli Dudu <i>Daniel Webster College</i>
107	UG	<b>SAE Advanced Class Aircraft</b> Patrick Bourque, Toshihiro Kihara, Nicholas Mura, Shane O'Day, Osayande Omondiagbe, Caitlin Chaffee <i>Daniel Webster College</i>
108	UG	<b>TEDD – The Totally Easy Drink Dispenser</b> Timothy Graham, Oliver Bateman <i>Daniel Webster College</i>
109	UG	<b>3D Rapid Prototyping of Prosthetic Cardiac Valves for Biomedical Engineering Design</b> Adityen Sudhakaran, Allan Chesarone, Marcin Slaczka, Shankar Krishnan <i>Wentworth Institute of Technology</i>
110	UG	<b>Innovative Surgical Procedure for Aortic Valve Implantation</b> Allan James Chesarone, Adityen Sudhakaran, Shankar Krishnan <i>Wentworth Institute of Technology</i>
111	UG	<b>Application of Robotic Assistance to Stereotactic Neurosurgical Procedures</b> Emily Trabing , Shankar Krishnan <i>Wentworth Institute of Technology</i>
112	UG	<b>Design of a Transplantation Donor Organ Preservation System in Transit</b> Brian Finn, Devin Richard, William Williams, Mansour Zenouzi, Shankar Krishnan <i>Wentworth Institute of Technology</i>
113	UG	<b>Total Knee Replacement: Problems and Solution Approaches</b> Mosa Alzoweilei <i>Wentworth Institute of Technology</i>
114	UG	<b>Control System For An Active Solar Hot Air Collector</b> Joshua A. Stewart, Allen Guinoo, Lin Lin <i>University of Southern Maine</i>
115	UG	<b>Design of a UV LED Curing Cartridge for 3D Inkjet Printing of Electronic Circuits and Sensors</b> Richard Wiswell, Mustafa Guvench <i>University of Southern Maine</i>
116	UG	<b>Design-Build-Test Roof R</b> Jason M Willets, James Hubbard, Daniel Bleggi <i>Naugatuck Valley Community College</i>
117	UG	<b>Using High Sensitivity Pressure Measurements for the Detection of Infrasound</b> Maxwell Perham <i>University of Massachusetts Amherst</i>

118	UG	<b>Classifying Social-Media Websites</b> Mark Miller, Wei Lu <i>Keene State College</i>
119	UG	<b>Assessing the Feasibility of Incorporating Phase Change Materials into Hot Mix Asphalt</b> Sarah Cote, Paul Bender, Rachel Lewis, Bryan Manning <i>Worcester Polytechnic Institute</i>
120	UG	<b>Head and Neck Injuries in Football</b> Michele Mensing <i>Worcester Polytechnic Institute</i>
121	UG	<b>Design of STR Bioreactor for Production of Saccharomyces cerevisiae (Upstream processing)</b> Nasser Madkhaly, Saleh Matar <i>University of Jazan</i>
122	UG	<b>Remote Monitoring and Supervisory Control of Mobile Robots Using Cellular Phones</b> Abdullah Mohammed Maghfuri, Khaled Mohammed Al-zemam, Ibraheim Saleh Kulaib <i>Jazan University</i>
123	UG	<b>A Methodology for Analyzing and Reducing Building Energy Consumption</b> Eric Leong, Gregori John Tayco <i>Cooper Union</i>
124	UG	<b>Wearable Wireless Inertial Sensors for Estimation of Gait Parameters and its integration with Portable Harness Ambulatory System for Rehabilitation</b> Naresh Poudel, Neelesh Kumar, Devdas Sheety <i>University of the District of Columbia</i>
125	UG	<b>Automatic Glass Bottle Opener</b> Brett Bernier, Earl Hasselmark <i>University of Hartford</i>
126	UG	<b>The Robo: Semi-Autonomous Robot that detects objects and has speech capabilities</b> Jiles, Krista Hill <i>University of Hartford</i>

**G Graduate Student Poster**  
**UG Undergraduate Student Poster**