2015 Western Research Day Schedule
Friday, May 1, 2015

9:00 AM - 10:30 AM	Poster setup Location: Science Building Atrium
10:00 AM - 10:30 AM	Keynote Speaker, Dr. Birgit Fogal Location: Science Building, SB 125
10:30 AM - 12:45 PM	WRD Poster Sessions Location: Science Building Atrium
12:45 PM - 1:00 PM	Concluding Remarks and Awarding of Provost Prizes Location: Science Building Atrium

Refreshments will be served during the poster session in the Atrium of the Science Building.

Keynote speaker: Dr. Birgit Fogal

Dr. Birgit Fogal is a Senior Scientist in the Department of Biotherapeutics at Boehringer Ingelheim Pharmaceuticals, Ridgefield, CT. Her research focuses on autoimmune diseases and immunotherapy for cancer. Dr. Fogal earned a B.A. degree in Biology from Western Connecticut State University and a Ph.D. in Biomedical Science from the University of Connecticut Health Center. Before joining the staff at Boehringer, she completed postdoctoral work at Yale University. Dr. Fogal's keynote address is titled, "Finding Your Niche Through Undergraduate Research."

Student Participants

Num	Name	Title	Session
1	Altemose, Kristin	Analysis of Pharmaceutical Drugs in Water Samples Using Gas Chromatography-Mass Spectrometry	Poster session
2	Bains, Amrita	Expression and purification of DPAP-1, a malaria protease, and its role in the putative programmed cell death pathway of the parasite	Poster session
3	Benoit, Matthew	Investigating Risk for Teen Pregnancy in Connecticut: Using GIS to Plot Optimal Education Program Areas	Poster session
4	Bissett, Michelle	Using GIS to Assess the Impact of Humans on Osprey Nesting	Poster session
5	Brown, Rhiannon Kaleigh Mahar Nathan Sanchy	Moisture Preference in Earthworms	Poster session
6	Castro, Sarah	Cloning, expression, and purification of PfSHMT	Poster session
7	Cobos, Juan Pablo	Ecuador's Inefficiencies: A view of its corruption and freedom levels	Poster session
8	Denninger, Stephen	Investigating the Relationship Between Landscape Factors and Tick Abundance: Results of a GIS Analysis	Poster session
9	Drozdowski, Madelyn	Locating Potential Conservation Habitats for the Northern Leopard Frog in Connecticut Using GIS	Poster session
10	Egan, Kelly Caroline Dahm Mary Sigillo Christi Daniels	Do individuals of Lumbricus terrestris know where they are going?	Poster session
11	Escobar, Karina	An Analysis of Preventative Tick Measures for Household Pets	Poster session
12	Evans, Andrea	A Spatial Analysis of Mountain Lion Sightings in Connecticut: Linking Eye-Witness Accounts to Environmental Data Using Geographic Information Systems	Poster session
13	Gillotte, Christopher	Using GIS to Locate Connecticut Rivers With Highest Risk of Eutrophication	Poster session
14	He, Guozheng	Why China had two Song Dynasties	Poster session

Num	Name	Title	Session
15	Hoffstaetter, Fred	The ADHD Epidemic	Poster session
16	Lim, Socheata	The Binding of Methylene Blue to Plasmodium falciparum Glutathione Reductase	Poster session
17	Lockwood, Kimberly	Using GIS to Determine Where Non-Native Earthworms Are Found	Poster session
18	Martello, Catherine	Coordination chemistry of divalent group 12 thiocyanate complexes containing quinazoline	Poster session
19	Monaco, Matthew	Asthma Emergencies and Pollution Sources: A GIS Analysis	Poster session
20	Orozco Morato, Erick	The role of cytochrome c and its effects on the programmed cell death pathway of P. falciparum using yeast as a model organism	Poster session
21	Paca, Thaiani	Coordination chemistry of divalent group 12 thiocyanate complexes containing phthalazine	Poster session
22	Pierre, Cassandra	Using GIS to Predict Eastern Equine Encephalitis Risk in Connecticut	Poster session
23	Potocki, Alex Cameron Sakurai	Quantum Audio Embedding Using M-Band Wavelets	Poster session
24	Rath, Nary	Prostitution in Israel	Poster session
25	Rode, Leo James Briggs Alex Srenaski	The Effect of Earthworms on Plant Growth	Poster session
26	Rowe, Katie	Women's Rights and Non-Governmental Organizations in Central America	Poster session
27	Rowley, Matthew Marilian Reyes Rockwell Anyoha	Night Crawlers: Conductors Of Soil Movement	Poster session
28	Sakurai, Cameron Alex Potocki	Price Optimization of an Established National Brand: Revisiting the Industry Structure	Poster session
29	Scott, Dana	Patterns of Hypoxia in Long Island Sound: How Are We Accountable?	Poster session
30	Shoroye, Adebowale	Coordination chemistry of divalent group 12 thiocyanate complexes containing 2-amino-5-cyanopyridine	Poster session

Num	Name	Title	Session
31	Taylor, Lori	Saving the Honeybees: Where should we place hives in Connecticut?	Poster session
32	Warren, Rebecca	Investigating Connecticut Water Pollution from Combined Sewer Overflows Using GIS	Poster session

Faculty Participants

Research Mentors

Name	Department
Dr. Stavros Christofi	Mathematics
Dr. Neeta Connally	Biology
Dr. Alba Hawkins	World Languages
Dr. Rotua Lumbantobing	Social Sciences
Dr. Yuan Mei-Ratliff	Chemistry
Dr. Theodora Pinou	Biology
Dr. J. Helena Prieto	Chemistry
Dr. Casey Rudkin	Writing
Dr. Abubaker Saad	History
Dr. Paula Secondo	Chemistry
Dr. John Szablewiczj	History
Dr. Xioadi Wang	Mathematics

Abstracts Poster Presentations

Listed in alphabetical order by first author

1 **Analysis of Pharmaceutical Drugs in Water Samples Using Gas Chromatography-Mass Spectrometry**

Altemose, Kristin

Dr. Yuan Mei-Ratliff - Chemistry

In this study, four drugs (ibuprofen, naproxen, sulfamethoxazole, and carbamazepine) are analyzed in trace quantities using gas chromatography-mass spectrometry. A derivatizing agent known as bis(trimethylsilyl)trifluoroacetamide (BSTFA) was used. Following a series of parameter optimization studies to establish the analytical method, the method will be applied to real-world samples. The overall goal of this research is to detect these drugs in samples taken from natural water sources and drinking water in the Danbury, CT region. This detection methodology will allow for future analyses of pharmaceutical impacts on the environment and could result in improvements in water treatment.

2 **Expression and purification of DPAP-1, a malaria protease, and its role in the putative programmed cell death pathway of the parasite**

Bains, Amrita

Dr. J. Helena Prieto - Chemistry

In a quantitative proteomics study where the parasite *Plasmodium falciparum* was treated with antimalarial drugs an increase in abundance or upregulation was detected for certain proteases. Among those upregulated proteases was dipeptidyl aminopeptidase-1, DPAP-1. DPAPs are known to function in hemoglobin degradation in the erythrocytic stages of the malaria parasite. In future research, the involvement of DPAP-1 in a putative programmed cell death pathway in this unicellular organism will be investigated. Before these studies can be done, recombinant DPAP-1 must be expressed and purified, which is the aim of the current research.

3 **Investigating Risk for Teen Pregnancy in Connecticut: Using GIS to Plot Optimal Education Program Areas**

Benoit, Matthew

Dr. Neeta Connally - Biology

Teen pregnancy has recently been glamorized in the U.S., yet teens are often unaware of the associated risks. Various demographic factors, including high crime, low income, and race are associated with a high rate of teen births. Geographic information system technology was used to map and correlate the variables above to see if these factors indeed have an effect on teen pregnancy in Connecticut and to locate the prime locations for health agency-run educational systems to help reduce teen pregnancy rates.

4 **Using GIS to Assess the Impact of Humans on Osprey Nesting**

Bissett, Michelle

Dr. Neeta Connally - Biology

The Osprey (*Pandion haliatus*) is a large raptor in Connecticut that nearly became endangered due to use of the pesticide DDT. Their numbers have increased significantly due to federal actions. While they are well adapted to people, human disturbance and infrastructure can affect nesting site locations that are near water bodies that function as a major food source for osprey. Using geographic information system (GIS) technologies, the relationship between known osprey nesting sites and human population density, roads and proximity to water bodies was analyzed.

5 **Moisture Preference in Earthworms**

Brown, Rhiannon with Kaleigh Mahar, Nathan Sanchy

Dr. Theodora Pinou - Biology

Paved roads in Connecticut have increased by 20% over thirty years. As a result, Connecticut forests have become fragmented, thus increasing edge habitat. Forest edge habitat can be dry due to a decrease in plant cover that results in increased evaporation. Lack of soil moisture may cause a change in the distribution of plants and animals in the habitat. In this study, *Lumbricus terrestris* is used to test annelid sensitivity to moisture; this may explain their movement in disturbed forest habitats.

6 **Cloning, expression, and purification of PfSHMT**

Castro, Sarah

Dr. J. Helena Prieto - Chemistry

The purpose of this research is to clone the gene for the malaria serine hydroxymethyltransferase (SHMT) a folate pathway enzyme that is necessary for the production of biologically important molecules such as thymidine and methionine. Proteomics data suggest that SHMT in *P. falciparum*, the causative agent of malaria, is up-regulated in the presence of antifolates. The *Plasmodium* parasite contains a high percentage of adenine and thymidine, making the amplification process challenging. Various PCR optimization techniques were used and considered reagent concentrations, use of hot phusion polymerase for greater specificity and cycling conditions.

7 **Ecuador's Inefficiencies: A view of its corruption and freedom levels**

Cobos, Juan Pablo

Dr. Rotua Lumbantobing - Social Sciences

Ecuador's mixed economy is comprised of a variety of private freedoms combined with centralized economic planning. The U.S. has a market economy, but the government still plays a key role in the national economy through its economic guidelines and policies. Using the Anglo-Saxon model and data such as GDP, level of freedom, unemployment, and inflation rate, Ecuador's economic system and the efficiency of its institutions are compared to the U.S.'s. This research suggests that culture and levels of freedom and corruption are determining factors in Ecuador's economic success.

8 **Investigating the Relationship Between Landscape Factors and Tick Abundance: Results of a GIS Analysis**

Denninger, Stephen

Dr. Neeta Connally - Biology

The blacklegged tick, *Ixodes scapularis*, is a known carrier of Lyme disease as well as several other infectious diseases. Juvenile blacklegged ticks feed on rodents and birds but transition to deer when they reach the adult stage of their life cycle. The ticks are then dispersed as the deer move throughout their home range. Utilizing geographic information system (GIS) technology, data collected from established tick monitoring sites in three Connecticut towns were used to identify some of the landscape factors that may influence the abundance of blacklegged ticks.

9 **Locating Potential Conservation Habitats for the Northern Leopard Frog in Connecticut Using GIS**

Drozdowski, Madelyn

Dr. Neeta Connally - Biology

The Northern Leopard Frog (*Lithobates pipiens*) is a species of special concern in Connecticut because it was once more widespread. Geographic Information System (GIS) technology was used to determine the most likely habitats for the Northern Leopard Frog in Connecticut based on reported sightings. Frog habitat descriptions were also assessed to further depict potential habitats. The land use composition of each previously located site was analyzed by a buffer of 400 meters to identify common characteristics of frog habitat. These findings were used to predict areas in Connecticut where the frog may be found and its habitat conserved.

10 **Do individuals of *Lumbricus terrestris* know where they are going?**

Egan, Kelly with Caroline Dahm, Mary Sigillo, Christi Daniels

Dr. Theodora Pinou - Biology

A recent survey of soil invertebrates reported that the annelid population was not evenly distributed across an area, with certain sections containing significantly more earthworms than others within 10 -15 meters. Our study investigates the social behavior of *L. terrestris* to explain this unequal distribution of annelids observed in a Department of Transportation (DOT) survey along the Route 7 bypass in New Milford, CT. Known relationships between earthworms and vegetative growth suggest that the data in this study may contribute to our understanding of plant succession in the presence of earthworms.

11 **An Analysis of Preventative Tick Measures for Household Pets**

Escobar, Karina

Dr. Neeta Connally - Biology

There are many tick deterrent products available for household pets. Using specimens sent to WCSU for a Lyme disease prevention study, the types of ticks found on pets, as well as the duration of their attachment, were compared with the submitter's reported use of tick deterrent products. Most submissions reported no treatment of household pets. Frontline was the most commonly used product, though only half of the submitters reported having treated pets within the product's recommended 30-day treatment window. Most ticks were attached for 96 or more hours, which is sufficient time to transmit the causative agent of Lyme disease.

12 **A Spatial Analysis of Mountain Lion Sightings in Connecticut: Linking Eye-Witness Accounts to Environmental Data Using Geographic Information Systems**

Evans, Andrea

Dr. Neeta Connally - Biology

The mountain lion (*Puma concolor*) is one of the largest cats known to be in Connecticut. Geographic Information Systems (GIS) technology was used to determine likely habitats for mountain lions based on sightings of this animal in Connecticut. Sightings were associated with areas of rocky-terrain with high elevations, forests and close proximity to small bodies of water. A map was created to determine where one could most likely locate a mountain lion in Connecticut. This map can be used to predict where in Connecticut a mountain lion could potentially live.

13 **Using GIS to Locate Connecticut Rivers With Highest Risk of Eutrophication**

Gillotte, Christopher

Dr. Neeta Connally - Biology

Eutrophication is an overlooked issue caused by the side effects of human activity. Leachate discharge points are areas of any foreign substance that join with water run-off and are prime sources that pollute water bodies. Rivers most at risk were correlated with the number of leachate systems accessible to them and the number of contaminated water basins that drained into them. Geographic Information System (GIS) technology was used to identify river systems that may be at highest risk for eutrophication from leachate sources.

14 **Why China had two Song Dynasties**

He, Guozheng

Dr. John Szablewiczj - History

Before China was overrun by the Mongols, the “Middle Kingdom” experienced a golden age during the Song Dynasty. Historians have noted, however, that there were two Song Dynasties, the Northern and Southern. During the time of the Northern Song there was considerable pressure from invading tribes. These “barbarians” from the north invaded the Song Dynasty and captured the emperor in 1127 but a prince who escaped southward proclaimed himself Emperor at Nanjing the same year. The purpose of this study is to explain why China had two different Song Dynasties.

15 **The ADHD Epidemic**

Hoffstaetter, Fred

Dr. Casey Rudkin - Writing

In the United States there is a steady increase in children being diagnosed with Attention-Deficit/Hyperactivity Disorder (ADHD). There is evidence that this increase may be the result of widespread misdiagnosis. Furthermore, a growing trend shows that prescription drugs used to treat the disorder are often abused by use as recreational drugs. In analyzing the rate at which ADHD diagnoses and prescription drug abuse in those with ADHD are rising, this research was designed to visually expose a growing issue that is often overlooked.

16 **The Binding of Methylene Blue to *Plasmodium falciparum* Glutathione Reductase**

Lim, Socheata

Dr. J. Helena Prieto - Chemistry

Plasmodium falciparum is the cause of human malaria and is one of two malaria parasites known to have drug resistance. An effective treatment for malaria is the antimalarial drug methylene blue (MB). At a specific concentration, MB has shown to inhibit the parasite’s glutathione reductase (PfGR), a proven drug target that is important for cellular repair mechanisms. In this study, PfGR was expressed and purified for a future study that will utilize H/D exchange with mass spectrometry to map the drug-protein interface. The binding affinity data to show how methylene blue interacts with PfGR will be presented.

17 **Using GIS to Determine Where Non-Native Earthworms Are Found**

Lockwood, Kimberly

Dr. Neeta Connally - Biology

Earthworms are an integral part of soil ecology. As decomposers, worms quickly and efficiently break down large particles and organic matter in the soil. However, when there are too many worms, the organic matter is broken down too quickly. This upsets the balance of the ecosystem because of organisms that depend on a normal, minimally decayed leaf litter layer or native species of earthworms. Geographic Information Systems (GIS) technology was used to analyze the features associated with high density populations of non-native worms. Features that were investigated include proximity to water bodies, roads, and forest coverage type.

18 **Coordination chemistry of divalent group 12 thiocyanate complexes containing quinazoline**

Martello, Catherine

Dr. Paula Secondo - Chemistry

A sequence of metal-organic frameworks containing quinazoline and group 12 thiocyanates has been prepared. Analysis of the fundamental mid - and far - range FT-IR vibrational modes of SCN^- (vCN, δNCS, and vCS), coupled with 13C NMR chemical shifts have elucidated the thiocyanate mode of coordination (terminal M-N, terminal M-S or binuclear bridging). Incorporation of elemental composition allows for structural supposition. Confirming X-ray crystallographic studies are underway and will be reported. A comparison of the structural topologies and packing assemblies of this investigation versus a previous study incorporating pyrimidine will be included.

19 **Asthma Emergencies and Pollution Sources: A GIS Analysis**

Monaco, Matthew

Dr. Neeta Connally - Biology

Air pollution can have detrimental effects on human health, especially for a person suffering from a respiratory illness such as asthma. To determine if air pollution is directly connected to asthma emergencies, asthma emergency data by town was compared to town population density and point source air pollution data (using GPS coordinates) using two different correlations. The results of this analysis can be used to raise geographic awareness for asthma patients as well as establish a precedent for the importance of air pollution regulation by the government.

20 **The role of cytochrome c and its effects on the programmed cell death pathway of *P. falciparum* using yeast as a model organism**

Orozco Morato, Erick

Dr. J. Helena Prieto - Chemistry

Apoptosis (programmed cell death) is a common method of regulating development in multicellular organisms. An apoptotic pathway has been identified in the unicellular organism *S. cerevisiae* (yeast). Our working hypothesis proposes *P. falciparum* has a similar cell death pathway to yeast. The aim is to identify the details of the putative apoptosis pathway in the malaria parasite. The activation of the cell death pathway will be tested using a fluorogenic substrate first in yeast and later in *P. falciparum* using the Pfcytochrome c as the initiator of the pathway.

21 **Coordination chemistry of divalent group 12 thiocyanate complexes containing phthalazine**

Paca, Thaiani

Dr. Paula Secondo - Chemistry

A sequence of metal-organic frameworks containing phthalazine and group 12 thiocyanates has been prepared. Analysis of the fundamental mid - and far - range FT-IR vibrational modes of SCN^- (vCN, δNCS, and vCS), coupled with 13C NMR chemical shifts have elucidated the thiocyanate mode of coordination (terminal M-N, terminal M-S or binuclear bridging). Incorporation of elemental composition allows for structural supposition. Confirming X-ray crystallographic studies are underway and will be reported.

22 **Using GIS to Predict Eastern Equine Encephalitis Risk in Connecticut**

Pierre, Cassandra

Dr. Neeta Connally - Biology

Eastern Equine Encephalitis Virus (EEEV) is a potentially fatal virus that can be transmitted from mosquitoes to humans. Currently there is no cure for this viral infection. Geographic Information System (GIS) technology was used to predict regions of highest potential EEEV risk in Connecticut. Potential habitats of bird hosts were identified and then overlaid upon potential habitat for the vector mosquito that is known to transmit the virus between birds and mammals. A risk map for EEEV in Connecticut was created, identifying regions that may be targeted for education and mosquito reduction campaigns.

23 **Quantum Audio Embedding Using M-Band Wavelets**

Potocki, Alex with Cameron Sakurai

Dr. Xioadi Wang - Mathematics

Information hiding is a modern method of privately transmitting digital signals. In recent years there have been developments in the field of quantum computing. It is therefore important to develop means of hiding information that will resist attacks from both standard and quantum computers. Wavelet transforms and pseudo-quantum encoding were used to transmit audio data hidden inside of images. Wavelet transforms offer energy conservation and the separation of energy levels, allowing audio to be embedded within the portion containing the highest energy. The use of M-band wavelets are being explored; however, for demonstration purposes, 4-band wavelets were used in this study.

24 **Prostitution in Israel**

Rath, Nary

Dr. Abubaker Saad - History

Israel is one of over 70 countries where prostitution is legal. Prostitution continues to thrive from a combination of government corruption, drug addiction, poverty, inefficient legal systems and other factors that are often overlooked by society and government. There is a direct correlation between human trafficking and prostitution; it is a multimillion dollar industry with over 10,000 women trafficked in Israel alone. The purpose of this research is to bring awareness to these issues and shed light on the plight of these women.

25 **The Effect of Earthworms on Plant Growth**

Rode, Leo with James Briggs, Alex Srenaski

Dr. Theodora Pinou - biology

The objective of this study was to investigate the growth of Wisconsin Fast Plants in the presence of earthworms. It was hypothesized that ecological processes attributed to earthworms can increase soil nutrients that may contribute to an increase in above ground biomass including stem length and flower production. These effects will be investigated in a short term mesocosm by sampling the plants with and without the presence of earthworms in the soil.

26 **Women's Rights and Non-Governmental Organizations in Central America**

Rowe, Katie

Dr. Alba Hawkins - World Languages

This research examines the context of women's rights in Central America and the non-governmental organizations (NGOs) dedicated to women in the region. The main purpose of this investigation was to determine whether the NGOs dedicated to women's rights in Central America are primarily local grass roots organizations or if they developed outside of the region as international organizations. The findings reveal that the vast majority of these organizations have their roots in local communities, demonstrating the strength these women possess despite the oppression they have historically faced.

27 **Night Crawlers: Conductors Of Soil Movement**

Rowley, Matthew with Marilian Reyes, Rockwell Anyoha

Dr. Theodora Pinou - Biology

Studies have shown that *Lumbricus terrestris* moves through soil horizontally and vertically. Tracking this movement is useful in establishing a rate at which L. terrestris can disperse particles of soil. This experiment measured the rate at which these earthworms dispersed particles of soil. A known rate will enable scientists to calculate how long it will take earthworms to mix particles, for example, nutrients or contaminants, throughout the soil. This study demonstrates that the amount of soil moved is directly related to the number of earthworms in an area.

28 **Price Optimization of an Established National Brand: Revisiting the Industry Structure**

Sakurai, Cameron with Alex Potocki

Dr. Stavros Christofi - Mathematics

In this research, an industry structure involving an established national manufacturer, a competing national manufacturer, and a single retailer that produces a generic (private label) are considered. The manufacturer seeks to determine the optimal wholesale price to be charged to the retailer. The manufacturer will accomplish this by maximizing their profit, and it is assumed that both the competitor and the retailer are also maximizing their profits. From the point of view of the manufacturer, this is a profit maximization problem with equality constraints. Our goal is to use mathematics to optimize the wholesale price of the manufacturer's product.

29 **Patterns of Hypoxia in Long Island Sound: How Are We Accountable?**

Scott, Dana

Dr. Neeta Connally - Biology

Anthropogenic induced hypoxia in Long Island Sound exhibits regional patterns which may be analyzed using geographic information systems. Hypoxia is the depletion of dissolved oxygen in a body of water, and aquatic ecosystems struggle to survive in hypoxic zones. Human-induced hypoxia is generally the result of eutrophication, a large input of nutrients into the water. Several potential contributors of excessive nutrients were investigated including agricultural runoff, major coastal population centers, and wastewater treatment plant discharge. Developing more sophisticated methods to reduce the release of excess nutrients into Long Island Sound will assist in restoring ecological balance.

30 **Coordination chemistry of divalent group 12 thiocyanate complexes containing 2-amino-5-cyanopyridine**

Shoroye, Adebowale

Dr. Paula Secondo - Chemistry

A sequence of metal-organic frameworks containing 2-amino-5-cyanopyridine and group 12 thiocyanates has been prepared. Analysis of the fundamental mid - and far - range FT-IR vibrational modes of SCN^- (vCN, δNCS, and vCS), coupled with 13C NMR chemical shifts have elucidated the thiocyanate mode of coordination (terminal M-N, terminal M-S or binuclear bridging). Incorporation of elemental composition allows for structural supposition. Confirming X-ray crystallographic studies are underway and will be reported.

31 **Saving the Honeybees: Where should we place hives in Connecticut?**

Taylor, Lori

Dr. Neeta Pardanani Connally - Biology

Populations of honeybees are in decline. The widespread use of pesticides have been implicated as a contributing factor. Bees and organic farms could benefit from being located near each other. Geographic information system (GIS) technology, current honeybee hive placement data, as well as farm locations in Connecticut were used to identify towns where hives could be placed to protect bees and help with crop pollination at organic farms.

32 **Investigating Connecticut Water Pollution from Combined Sewer Overflows Using GIS**

Warren, Rebecca

Dr. Neeta Connally - Biological Sciences

Pollutants from industrialization have contaminated Connecticut's waterbodies monumentally since the end of World War II. Combined Sewer Overflows (CSOs) and the growth of impervious surfaces have contributed to increased contamination of these waterbodies. There are six towns in Connecticut that have retained old methods and still utilize CSOs. Using geographic information system (GIS) technology, we were able to assess number of CSOs, distribution of impervious surfaces, and waterbodies affected in each town. Data collected were used to create a ranking to determine which of the towns that implement CSOs are likely to contribute more to the pollution of Connecticut's waters.

Western Research Day is possible because of contributions of students, faculty, staff and administrators. It is sponsored by the Provost's Office at Western Connecticut State University.

Appreciation and thanks to people who made this event possible

Dr. James Schmotter, President

Dr. Jane Gates, Provost and Vice President of Academic Affairs

Office of Publications and Design

Office of Public Relations

Judges

Name	Department
Esther Boris	Administrative Services
Mark Case	Director – Administrative Services
Michael Chappell	English
Dr. Stavros Christofi	Math
Shona Cooper	Housing
Dr. Joshua Cordeira	Biology
Richard Corzo	Information Technology
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Dr. Nick Greco	Chemistry
Dr. Robin Gustafson	Psychology
Dr. Josie Hamer	Math
Dr. Stacey Alba Hawkins	Spanish
Dr. William Joel	Computer Science
Brian Kennison	Library
Dr. Rotua Lumbantobing	Economics
Dr. Jeanette H. Lupinacci	Nursing
Dr. Yuan Mei-Ratliff	Chemistry
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Roger O'Connor	Police
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Dr. J. Helena Prieto	Chemistry
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Dr. Casey Rudkin	Writing
Dr. Jeffrey Schlicht	HPX
Thomas Schmiedel	Library
Dr. Ed Wong	Biology

Volunteers

Pedro Alves
Francesca Golightly
Shughla Ghafoor
Jenny Kry
Nadly Louissaint
Nathaniel Nisly
Lexi Watkins

WRD Planning Committee

Dr. Susan Maskel, WRD Chairman, Biological & Environmental Sciences
Debbi Johnson, Biological & Environmental Sciences
Dr. Michelle Monette, Biological & Environmental Sciences
Dr. Anne Roberts, Chemistry
Brian Stevens, Library and WCSU Archives