2.13 DR. TARASENKO’S STUDENTS ACHIEVEMENTS

SOUZAN EASSA, 2010

Souzan, PhD student of Dr. Tarasenko, received “2010 Outstanding 1st year graduate student”

Publications
§ corresponding author, co-authored by ‡ undergraduate or †graduate student,
* authors contributed equally to this work


Abstracts and presentations


3rd place

Souzan Eassa

TITLE OF POSTER PRESENTATION: "Glycoconjugates Influence Caspases Release and Minimize Production of Lactate Dehydrogenase upon Pathogen Exposure"

ADVISOR: Tarasenko, M.D., Ph.D.
MOHAMED LAHIANI, 2010

Mohamed, student of Dr. Tarasenko, was awarded by Lester Hosto Award based on his research achievement and decision of the Department of Biology, College Science and Mathematics in April 2010.

Mohamed received 1st place at the UALR’s Undergraduate Expo. He is among other two nominees for Posters on the Hill sponsored by the national organization the Council on Undergraduate Research. Student will present his research at a national undergraduate research symposium in Washington, DC.

2nd place at the poster competition, 94th Annual Meeting of the Arkansas Academy of Science, April 9-10, 2010, University of Arkansas at Little Rock, Little Rock, AR

Lahiani M.; Tarasenko O. “Stimulatory and protective role of glycoconjugates on rice seeds from Bacillus spores infection during germination and growth”
Publications

§ corresponding author, co-authored by ‡ undergraduate or †graduate student,
* authors contributed equally to this work


Your article has been downloaded 250 times!

From: "skuo" <skuo@poly.edu>
To: o_tarasen@yahoo.ca
Forwarded Message: Your article has been downloaded 250 times!

Your article has been downloaded 250 times!

From: njp@iop.org
To: skuo@duke.poly.edu

Dear Professor Kuo,

I am pleased to tell you that your article, "Contribution of a portable air plasma torch to rapid blood coagulation as a method of preventing bleeding", by Kuo SP, Tarasenko O., Chang J., Popovic S, Chen CY, Fan HW, Scott A., Alusta P., Lahiani M., Drake JD, Nikolic, in New Journal of Physics, Vol 11, pp115016 (2009), has been downloaded 250 times so far.

To put this into context, across all IOP journals 10% of articles were accessed over 250 times this quarter.

You can link directly to your article at: http://stacks.iop.org/1367-2630/11/115016

I would like to thank you for supporting New Journal of Physics and I trust that you have found our publication process to be friendly and efficient. I hope you will consider submitting further papers to the journal and encourage your colleagues to do likewise.

Our publication times are highly competitive and we use a fully electronic editorial process from submission to peer review to production. Electronic submission to Institute of Physics journals can be done very simply at the following web page: http://www.iop.org/journals/authorsubs

We look forward to working with you again. If you have any queries about the journal, please don't hesitate to contact me.

If you would prefer not to receive further updates on the number of times this article has been downloaded, please reply to this email with the word remove in the subject line.
Abstracts and presentations

1. Lahiani M.; Tarasenko O. Stimulatory and protective role of glycoconjugates on rice seeds from *Bacillus* spores infection during germination and growth 94th Annual Meeting of the Arkansas Academy of Science, April 9-10, 2010, University of Arkansas at Little Rock, Little Rock, AR (2nd place, poster competition)


Publications


Abstracts and presentations:

2. Pavan C.; Rasol, A.; Tarasenko O. From recognition to disinfection of *Bacillus cereus* spores. 5th International Conference on Environmental Science and Technology sponsored by the American Academy of Sciences, July 12-16, 2010, Houston, Texas, USA (poster)

3. Rasol, A.; Tevebaugh, W.; Bush, J; Tarasenko, O. Binding and Recognition of *Bacillus cereus* by *Dictyostelium discoideum* Using Glycoconjugates. 94th Annual Meeting of the Arkansas Academy of Science, April 9-10, 2010, University of Arkansas at Little Rock, Little Rock, AR (oral)


ASHLEY SCOTT, 2008-2009

Ashley received two awards: 2009 Tomas Hogue Outstanding Research and Martha Couch Outstanding Graduating Senior.
Publications

§ corresponding author, co-authored by ‡ undergraduate or †graduate student,
* authors contributed equally to this work


Abstracts and presented presentations


6. Scott A., Tarasenko O. Comparison of Bacillus cereus and Bacillus anthracis Infection Models and Glycoconjugate Induced Immunomodulation. 93rd Arkansas Academy of Science Meeting University of Ozarks, Arkansas, April 3-4, 2009.


21. Castleberry J., Scott A., Soderberg L., Alusta P., Tarasenko O. Nitric Oxide Involved in Macrophage Activation and Neutralization of Bacillus anthracis toxins during Glycoconjugate Treatment. 5th International Conference: Biology, Chemistry and Therapeutic Applications of Nitric Oxide. Festspielhaus Bregenz, Austria, Aug. 24-26, 2008 (poster)


Ashley received SURF, American Society for Microbiology Teaching, American Society for Microbiology Research, Mid America Science Museum grants and scholarship in order to work on glycoconjugates in Dr. Tarasenko’s research lab. In addition, she received several travel awards to present the obtained data at the National and International Conferences.

Arkansas Department of Higher Education
114 East Capitol • Little Rock, Arkansas • 72201-3818 • (501) 371-2000 • Fax (501) 371-2001

Mike Beebe
Governor

Dr. Jim Purcell
Director

January 21, 2009

Ms. Angela Willis, Associate Director
Office of Research & Sponsored Program
University of Arkansas at Little Rock
2801 S. University Avenue
Little Rock, AR 72204-1099

Dear Ms. Willis:

Enclosed is warrant #09W-0343173 in the amount $7,300.00 for the Student Undergraduate Research Fellowship (SURF) Program. These funds are to provide support for the SURF awardees research and travel cost along with their respective mentor’s cost.

These funds are to be used according to the conditions set forth by the SURF regulations and should be accounted for as restricted funds.

I have enclosed a list of student and mentor names along with their respective grant amount. Please complete the enclosed receipt confirmation form and return to our offices.

If you have questions regarding your award, you may call me at (501) 371-2053 or (800) 547-8839.

Sincerely,

Julie A. Phillips
Assistant Coordinator of Student Financial Aid

Enclosure(s)
<table>
<thead>
<tr>
<th>Student</th>
<th>Student Name</th>
<th>Mentor</th>
<th>Mentor Name</th>
<th>Inst</th>
<th>SURF Cost</th>
<th>Mentor Cost</th>
<th>Travel Cost</th>
<th>Total Cost</th>
<th>Mahlon Martin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eller</td>
<td>Jonathan</td>
<td>Berry</td>
<td>Brian</td>
<td>UALR</td>
<td>$1,250.00</td>
<td>$1,000.00</td>
<td>$400.00</td>
<td>$2,650.00</td>
<td></td>
</tr>
<tr>
<td>Scott</td>
<td>Ashley</td>
<td>Taraseko</td>
<td>Olga</td>
<td>UALR</td>
<td>$625.00</td>
<td>$1,000.00</td>
<td>$400.00</td>
<td>$2,025.00</td>
<td></td>
</tr>
<tr>
<td>Shepherd</td>
<td>Andrew</td>
<td>Geoghegan</td>
<td>Sean</td>
<td>UALR</td>
<td>$1,250.00</td>
<td>$975.00</td>
<td>$400.00</td>
<td>$2,625.00</td>
<td></td>
</tr>
<tr>
<td>University of Arkansas at Little Rock</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$3,125.00</td>
<td>$2,575.00</td>
<td>$1,200.00</td>
<td>$7,300.00</td>
<td></td>
</tr>
</tbody>
</table>
ARKANSAS DEPARTMENT OF HIGHER EDUCATION
114 EAST CAPITOL
LITTLE ROCK, AR 72201-3818
(501) 371-2000

STUDENT UNDERGRADUATE RESEARCH FELLOWSHIP (SURF) PROGRAM
AWARD NOTICE

December 5, 2008

NAME: Ashley Scott
ADDRESS: 2500 Kavanaugh Blvd., B5
CITY/ST/ZIP: Little Rock, AR 72205

FACULTY MENTOR: Dr. Olga Tarasenko

INSTITUTION: University of Arkansas at Little Rock

Student's Costs: $625
Mentor's Costs from SURF: $1,000
Student's Travel Costs from SURF: $400
TOTAL SURF GRANT AWARD: $2,025

University Match: $625

Mahlon Martin Fellowship: $

You have been awarded the Student Undergraduate Research Fellowship (SURF) for the 2008-2009 academic year with payments indicated above.

By signing this award notice, you agree to conduct in-depth research in the field of study indicated on your 2008-2009 SURF application under the supervision of your mentor. Additionally, you agree to present your research at a state or national conference in your discipline or attend a meeting of experts in your discipline as directed by your mentor.

Please sign this award notice to accept or decline the award and return it to the Arkansas Department of Higher Education by December 19, 2008.

CHECK ONE:
X. I ACCEPT THE STUDENT UNDERGRADUATE RESEARCH FELLOWSHIP.
     I DECLINE THE STUDENT UNDERGRADUATE RESEARCH FELLOWSHIP.

Signature of Recipient

Date

14
More than 65 UALR undergraduate researchers presented explanations of their study this week at the Undergraduate Research Expo. The projects focused on topics as varied as 17th century domestic crime to cutting-edge biochemistry searches for a vaccine for anthrax.

One of the researchers, senior Ashley Scott of Little Rock, was selected last week to receive the 2008 American Society for Microbiology Undergraduate Research Fellowship. She will receive a $4,000 stipend for 10 weeks of summer research and $1,000 travel expenses to present her research at the ASM General Meeting in Philadelphia in the fall.

“The Undergraduate Research Expo showcases and encourages research and creative endeavors by UALR undergraduates in all disciplines, provides a venue that supports UALR’s combined educational and research missions, and allows students to exchange ideas in a professional setting,” said Dr. Gail Hughes of the Department of Educational Leadership. She is chair of the UALR Undergraduate Research Committee that organized the event.

The top projects will be nominated for presentation in Washington, D.C., at the annual “Posters on the Hill” event organized by the Council on Undergraduate Research.

Updated 4.23.2008

The fourth annual campus-wide UALR Undergraduate Research Expo was held on Monday April 20, 2009 from 10 am to 3 pm in the Cal Ledbetter Assembly Hall (formerly Donaghey Student Center Rooms A, B, & C).

Triple major Ashley Scott’s science project took 1st place in the Physical and Life Sciences category (Mentor: Olga Tarasenko). Congratulations to Sarah Walker, whose project was awarded 1st place in the Humanities category, and Jay Jensen, who was awarded Honorable Mention in the same category.
Ashley Scott was also selected as 2008 American Society for Microbiology undergraduate teaching fellow.

<table>
<thead>
<tr>
<th>Name</th>
<th>University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phillip Adam</td>
<td>University of Kansas</td>
</tr>
<tr>
<td>Christopher Attaway</td>
<td>Clemson University</td>
</tr>
<tr>
<td>Sunjay Barton</td>
<td>Swarthmore College</td>
</tr>
<tr>
<td>Rachel Blumhagen</td>
<td>Western Washington University</td>
</tr>
<tr>
<td>Amy Brellin</td>
<td>Arizona State University</td>
</tr>
<tr>
<td>Michael Clezmeila</td>
<td>Rider University</td>
</tr>
<tr>
<td>Danielle Cogswell</td>
<td>Colorado State University</td>
</tr>
<tr>
<td>Aubrey Cypert</td>
<td>Juniata College</td>
</tr>
<tr>
<td>Patricia Davison</td>
<td>Coe College</td>
</tr>
<tr>
<td>Valentine Dimitrova</td>
<td>Agnes Scott College</td>
</tr>
<tr>
<td>Eric Estrin</td>
<td>University of Texas at Austin</td>
</tr>
<tr>
<td>Mary Eshem</td>
<td>University of Nevada, Las Vegas</td>
</tr>
<tr>
<td>Deborah Fretwell</td>
<td>Washington State University</td>
</tr>
<tr>
<td>Charles Garrigan</td>
<td>St. Lawrence University</td>
</tr>
<tr>
<td>Petra Geist</td>
<td>Colorado State University</td>
</tr>
<tr>
<td>Neil Goettler</td>
<td>University of Illinois</td>
</tr>
<tr>
<td>Tobin Hammer</td>
<td>University of California, San Diego</td>
</tr>
<tr>
<td>Laura Holtbauer</td>
<td>Marian College of Fond du Lac</td>
</tr>
<tr>
<td>Michael Hidy</td>
<td>Georgetown University</td>
</tr>
<tr>
<td>Stephanie Lehman</td>
<td>Colorado State University</td>
</tr>
<tr>
<td>Ashley Scott</td>
<td>University of Arkansas at Little Rock</td>
</tr>
<tr>
<td>Katherine Macnich</td>
<td>Colorado State University</td>
</tr>
<tr>
<td>Joseph Molenda</td>
<td>University of Wisconsin</td>
</tr>
<tr>
<td>Stephanie Moquin</td>
<td>University of New Mexico</td>
</tr>
<tr>
<td>Poonam (Vera) Patel</td>
<td>University of Georgia</td>
</tr>
<tr>
<td>John Pram</td>
<td>University of Texas at Arlington</td>
</tr>
<tr>
<td>Garrett Roney</td>
<td>University of Louisville</td>
</tr>
<tr>
<td>Max Schroeder</td>
<td>Ohio Wesleyan University</td>
</tr>
<tr>
<td>Julia Schwartzman</td>
<td>Middlebury College</td>
</tr>
<tr>
<td>Madelyn Shapiro</td>
<td>University of Massachusetts</td>
</tr>
<tr>
<td>Kristen Sukraw</td>
<td>Washington State University</td>
</tr>
<tr>
<td>Brittane Stahah</td>
<td>Lycoming College</td>
</tr>
<tr>
<td>Joshua Thomson</td>
<td>Rochester Institute of Technology</td>
</tr>
<tr>
<td>Bao Truong</td>
<td>University of California, San Diego</td>
</tr>
<tr>
<td>Colin Turney</td>
<td>Miami University</td>
</tr>
<tr>
<td>Kelsey Vilk</td>
<td>South Dakota State University</td>
</tr>
<tr>
<td>Fangfang Xing</td>
<td>UCLA</td>
</tr>
<tr>
<td>Brian Yagle</td>
<td>University of Michigan</td>
</tr>
</tbody>
</table>
The Undergraduate Research Committee would like to thank all the students and faculty who made the 2008 UALR Undergraduate Research Expo a success. The quality of student posters was impressive and we would like to congratulate all the students on their presentations.

.....

The committee would also like to recognize, with an honorable mention, Ashley Scott (Glycoconjugates Effect on Human Macrophage Viability During Exposure to Bacillus Cereus Spores) and Josua Blackstock (Assessment of Land-Use Trends From 1992 to 2006 and Adverse Effects to Water Quality in the Buffalo National River Watershed, Northern Arkansas).

Sincerely,

The Undergraduate Research Committee
Dear Ashley Scott:

On behalf of the Education Board of the American Society for Microbiology (ASM), it is with pleasure to congratulate you for being selected to participate in the 2008 ASM Undergraduate Research Fellowship (URF) Program. At ASM, we strive to afford this elite opportunity to the best and the brightest rising young scientists, whom we recognize will represent the society and themselves to their full potential. For this, we applaud your determination and motivation within the sciences and hope that you will enhance your research through the URF program.

As you know, this program is designed to assist you in your pursuit of a career in microbiological research and to provide you with a rewarding research experience. We sincerely hope that your summer experience will be a very enlightening one. An orientation booklet will be e-mailed to you before you begin your program.

**The award is for a minimum of 10 weeks of summer research beginning in June. You will be paid a $4000 stipend and up to $1000 for student travel to the 2009 ASM General Meeting.**

By accepting this award, it is understood that you will: a) complete a minimum of ten weeks of full time employment in your research project, b) prepare an abstract directly related to your research project, c) include your abstract for submission to the ASM General Meeting, and d) present your abstract and participate in other activities at the 2009 ASM General Meeting in Philadelphia, PA.

Please note that as an ASM Undergraduate Research Fellow, you are responsible for federal and state tax payment at the end of the year. ASM is not authorized to provide tax advice; therefore we urge you to contact appropriate federal, state, and local tax official and/or a tax advisor.

Please confer with your mentor regarding your ability to participate in the program and respond via email to Tiffani Fonseca, Coordinator, Fellowship Programs by 10AM (EST) Friday, April 18, 2008 to formally indicate your willingness to participate in the 2008 ASM Undergraduate Research Fellowship program.

If you have further questions or concerns about the program, please contact Tiffani via e-mail: tfonseca@asmusa.org or directly at 202.942.9283.

Sincerely,

Laurie Caslake, Ph.D. Chair,
Review Committee ASM Undergraduate Research Fellowship
<table>
<thead>
<tr>
<th>Subject</th>
<th>Congratulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>Michael Gealt <a href="mailto:magealt@ualr.edu">magealt@ualr.edu</a></td>
</tr>
<tr>
<td>Date</td>
<td>Thursday, April 17, 2008 10:48 am</td>
</tr>
<tr>
<td>To</td>
<td><a href="mailto:amscott1@ualr.edu">amscott1@ualr.edu</a></td>
</tr>
<tr>
<td>Cc</td>
<td>Olga Tarasenko <a href="mailto:omtarasenko@ualr.edu">omtarasenko@ualr.edu</a></td>
</tr>
</tbody>
</table>

Ms. Scott,
As a fellow microbiologist, I want to offer my congratulations. I hope that you enjoy the experience being offered by ASM. I especially look forward to seeing your research presented in Philadelphia.
Mike Gealt
--
Michael A. Gealt, Ph.D.
Dean, College of Science and Mathematics
University of Arkansas at Little Rock
2801 S. University Ave.
Little Rock, AR 72204 USA
501-569-3545
501-569-8017 fax
magealt@ualr.edu

<table>
<thead>
<tr>
<th>Subject</th>
<th>Good News!</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>Ashley Scott <a href="mailto:amscott1@ualr.edu">amscott1@ualr.edu</a></td>
</tr>
<tr>
<td>Date</td>
<td>Friday, June 20, 2008 3:06 pm</td>
</tr>
<tr>
<td>To</td>
<td>Olga Tarasenko <a href="mailto:omtarasenko@ualr.edu">omtarasenko@ualr.edu</a></td>
</tr>
</tbody>
</table>

Dr. Tarasenko
I got a call from the Mid America Science Museum and I was awarded their $1500 scholarship! The lady said it was due in a large part to your excellent recommendation letter, so thank you so much.

Ashley
Good Morning,
Thank you for applying to the ASM Undergraduate Research Fellowship Program.
Please read the enclosed letter below.
<<Scott.pdf>>
Again, thank you and have a nice week.
~Tiffani Fonseca

Tiffani D. Fonseca  
Coordinator, Fellowship Programs  
American Society for Microbiology  
1752 N Street, NW  
Washington, DC 20036  
Tel: 202.942.9283  
Fax: 202.942.9329  
E-mail: tfonseca@asmusa.org  

For information on ASM Fellowships please visit:
For Immediate Release
Contact Joan I. Duffy (501) 569-8600, (501) 837-8378 (cell)
Broadcasters: Contact Angela Parker (501) 683-7245, 554-1527 (cell)

UALR Undergrad Picked for Microbiology Teaching Fellowship

LITTLE ROCK, Ark. (Sept. 26, 2008) – UALR English major Ashley Scott of Little Rock has received an undergraduate teaching fellowship from the American Society of Microbiology in Washington, D.C., the organization announced Wednesday.

She was one of five higher education undergraduates selected for the two-year fellowship, which is aimed at highly motivated and competitive students interested in teaching careers. Scott’s goal is to pursue a Ph.D. to teach and research at the college level while integrating high school students into college programs by introducing them to microbiology research experiences.

The award provides the opportunity to develop a project to provide instruction in a scientific discipline in a local school or community setting in partnership with a mentor at their home institution and a teacher or site coordinator from the host site. Scott will receive $2,500 stipend, a two-year ASM student membership, and up to $500 for supplies and instructional materials. She will also be encouraged to to submit abstracts and applications to attend the 2009 ASM Conference for Undergraduate Educators (ASMCUE).

Dr. Olga Tarasenko, an assistant professor of biology in UALR’s College of Science and Math, will serve as Scott’s faculty mentor. Melissa Donham, a teacher from Little Rock Central High School, is acting as Scott’s school teaching mentor.

This summer, Scott and her mentors brought two groups of high school students into research labs and exposed them to scientific research experiences studying sugar polymers in microbiology. The students were allowed to conduct their own small projects and present their findings to their peers.

“One of the students has elected to continue his research with us this term and will enter a poster in the 2008 BioNanoTox Conference at UALR in October,” Scott said. “In addition, this has spawned an interest in exposing high school students to the research process and I have been invited twice to give presentations to Mrs. Donham’s biology classes at Central.”

The American Society for Microbiology, headquartered in Washington, D.C., is the oldest and largest single biological membership organization, with over 40,000 members worldwide.
Banner Fund Notification

TO: Dr. Olga Tarasenko, Ashley Scott and Edna Mack

FROM: DeShun L. Graham, Grants and Contracts Manager
       Office of Research and Sponsored Programs

DATE: June 12, 2008

RE: Sponsor: ASM's Undergraduate Teaching Fellowship (UTF)

Title: From educational to scientific perspectives: sugar polymers in microbiology

User IDs: Dr. Olga Tarasenko (omtarasenko), Edna Mack (ermack)
POUYA PARSIAN, 2008- 2009

Pouya Parsian has received the 2nd place for his poster “Glycoconjugates to prevent binding of anthrax toxins to macrophages” at the 2008 BioNanoTox Conference

Abstract and presentation:

The Little Rock School District continued its strong participation in the Susan G. Komen Race for the Cure this year. An $8,550 contribution is the latest addition to a long list of contributions, including $10,000 from the RITC, $4,000 from the district’s Educational Foundation, and $2,000 from each of the district’s high schools. The district also has a strong presence in the Komen Foundation, which has set aside funds for breast cancer research.
The Undergraduate Research Committee would like to thank all the students and faculty who made the 2008 UALR Undergraduate Research Expo a success. The quality of student posters was impressive and we would like to congratulate all the students on their presentations.

We are proud to announce that Jill Castleberry, Biology major (Glycoconjugates Present Potential Antitoxin Therapeutics for Bacillus Anthracis Toxins and Their Complexes) and Ivy Renfro, History major (The Changing Images of Anne Frank) are the two nominees for Posters on the Hill sponsored by the national organization the Council on Undergraduate Research. If CUR chooses one of these projects, the student will present at a national undergraduate research symposium in Washington, DC.

... 

Sincerely,

The Undergraduate Research Committee
February 7, 2008

Olga Tarasenko, M.D., Ph.D.
Department of Biology
University of Arkansas at Little Rock
Little Rock, AR 72204-1099

RE: Jill Castleberry

Dear Dr. Tarasenko:

On behalf of the Board of Directors of the Arkansas Science & Technology Authority (Authority), I am pleased to notify you that your student, Jill Castleberry, has been awarded a grant in the amount of $1,500 for Proposal No. 08-EPSCoR-008-REU entitled “Glycoconjugates Inhibit Protective Antigen and its Interaction with Anthrax Toxin Receptor.” Funding of the proposal was approved by the Board of Directors in Resolution No 08-12 dated January 18, 2008. All award funds must be spent by December 31, 2008. Final reports are due within 60 days after expiration of the award period (one year) and no later than March 18, 2009.

Funding of the proposal is contingent upon the receipt of a preliminary budget and plan for spending the awarded funds. This money is to be used for student support and supplies; facilities and administration charges by the university cannot be made against this fund. Once a budget outlining the anticipated expenditures has been submitted to the Arkansas Science & Technology Authority, a warrant will be mailed out.

A final summary report must be submitted to the Authority and shall include:

- A topic sentence stating the project’s major focus and service area;
- The primary objectives and scope of the project;
- The summary of the techniques or approaches used to establish the research;
- The results of the research efforts stated as concisely as possible with a description of the evaluation procedures used to assess results;
- A copy of the budget showing expenditures; and
- Other information as requested by the Board of Directors.

Should any publications or presentations result from this research, the National Science Foundation EPSCoR RII Grant, “Arkansas ASSET Initiative” (# EPS-0701890), and the Arkansas Science & Technology Authority should be acknowledged and a copy of the publication should be forwarded to the Authority.
Dr. Tarasenko
Page 2
February 7, 2008

This award is based on the understanding that all federal, state, and local rules, regulations, and procedures governing this research have been and will be followed. And that by funding this research, the Arkansas Science & Technology Authority does not assume responsibility for any violations of such requirements.

We wish you success.

Sincerely,

John W. Ahlen
John W. Ahlen, Ph.D.
President
MEMORANDUM

TO: Dr. Olga Tarasenko  
    University of Arkansas at Little Rock  
    2801 S. University  
    Little Rock, AR 72205

FROM: Lillian K. Williams, SURF Program Coordinator

DATE: December 10, 2007

SUBJECT: Mentor SURF Award Notice

STUDENT: Jill Castleberry

The student listed above has been chosen as a recipient for the Student Undergraduate Research Fellowship (SURF) Program for the **2007-2008 academic year**. You have been designated as his/her faculty mentor. The student has been notified by mail of the award and has been told to sign and return the award notice to the Arkansas Department of Higher Education (ADHE) by **December 21, 2007**. Please advise the student to return the SURF award notice by the deadline date or they will forfeit the fellowship.

Thank you in advance for your assistance and if you have any questions, please contact me at (501) 371-2038.
Jill Casselberry

A) President of the Biology Club at the University of Arkansas at Little Rock, AR

B) Jill Castleberry (Dr. Tarasenko, PI/ Mentor) received SURF and National Science Foundation EPTCoR MI “Arkansas ASSET Initiative” (# EPS-0701890) grants for the research entitled “Glycoconjugates Inhibit Protective Antigen and its Interaction with Anthrax Toxin Receptor “

C) Jill Casselberry authored/co-authored


Kristin Hester, April Jones, Jill Casselberry, Michelle Park Kim received a travel grant from the American Chemical Society in order to present their research at the ACS 235th National Meeting, New Orleans, Louisiana, April 6-10th, 2008.
SAMEA LONE, 2007

A) President of the 2007 BioNanoTox International Society at the University of Arkansas at Little Rock, AR

B) Her paper and poster presentation entitled “Glycoconjugates as a potential decontaminant of bacterial spores” (Authors: Lone S., Tarasenko O.,) was awarded in the category “Student Paper Award” during 3rd International Conference on Environmental Science and Technology Sponsored by the American Academy of Sciences, Houston, TX August 6-9, 2007.

C) Samea Lone authored/co-authored publications


Abstracts and presentations


---

**Glycoconjugate- Nanoemulsion for Decontamination Bacillus spores**

![Graph showing % of spore killing vs Glycoconjugate concentration](image-url)
Abstracts and presentations


2007 SCIENCE FAIR

<table>
<thead>
<tr>
<th>Category</th>
<th>First Place</th>
<th>Second Place</th>
<th>Third Place</th>
<th>Honorable Mention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microbiology</td>
<td>Sai Desikan</td>
<td>Amanda Weir</td>
<td>Erica Akel</td>
<td>Phillip Brown</td>
</tr>
</tbody>
</table>
Abstracts and Presentations


Congratulations to awarded students and their mentors in each category:

(II) Biological Sciences

**Paul Bobryshev**, Department of Biology, University of Arkansas at Little Rock, Little Rock, Arkansas, USA

Dr. Olga Tarasenko, Mentor

Glycoconjugates Recognize *Bacillus* spores in Fluid Food Products

**Paul Bobryshev** and Olga Tarasenko

Department of Biology, University of Arkansas at Little Rock, *Little Rock, Arkansas, USA.*

*Bacillus anthracis* species are considered as potential bioterrorism agents. Recent advances in pharmaceutical and biomedical research reveal the potential use of glycoconjugates for detection and recognition of spores in food supplies. Our goal was to study whether glycoconjugates are capable to recognize and entrap *Bacillus* spores during filtration of fluid food products.

Filter membranes were modified using studied GC1 and GC2 glycoconjugates. Non-modified filters were used as controls. Pre- and post-modification were analyzed using scanning electron microscopy and colony forming unit (CFU) assay. Milk and apple juice were used as study samples. Recognition and retention of spores were accomplished by filtration of studied samples through treated / untreated filters.

CFU was directly indicative of glycoconjugate-treated efficacy filters. The latter increased spore retention compared with untreated filters. As far for juice, the spore retention rate of GC1-treated filters was 67-99.5%, whereas it was 56-95% for GC2-treated filters. Untreated filters retained 53% of spores in juice. Assessment of the total number of CFU formed in untreated filters was up to 90% higher than in treated filters. GC1-treated filters retained 86-96%, whereas GC2-treated filters retained 67-97% of spores in milk. Untreated filters retained only 6.7% of spores in milk.

Glycoconjugates provided high affinity ligands for recognition and retention of spores during filtration using treated filters. This study offers a new model for monitoring spores contamination in fluid food supplies.

Talk entitled “Glycoconjugates recognize *Bacillus* spores in food supply” (authors: Bobrushev P. ‡, Alusta P. †, and Tarasenko O. §) was selected to be covered by MicroWold radio station during 5th ASM Biodefense and Emerging Diseases Research Meeting, Washington DC, February 27th - March 2nd, 2007.
Glycoconjugates Recognize Bacillus Spores in Food Supply

P. V. Bobryshev, P. Alusta, O. Tarasenko; University of Arkansas at Little Rock, Little Rock, AR.

**Background:** The Bacillus species are known to cause problems such as food spoilages and food-borne illnesses. Given the severity of the threat and potential problems from imported food, the detection of harmful spores in food products needs to be rapid and extremely sensitive since the presence of a single pathogen bacteria can lead to infection. Recent advances in pharmaceutical and biomedical research reveal the actual use of carbohydrate-bearing polymers for biodefense in order to prevent bioterrorism through animal and human food supplies. **Methods:** Filter's membranes were treated using glycoconjugates. Untreated filters were used as control. Pre- and post-treated filters were analyzed using scanning electron microscopy. Milk and apple juice were used as a study samples. Recognition and inhibition of spores were accomplished by filtration of milk and juice through treated and untreated filters. Pellets were serially diluted, and plated. Resulting colony forming units (CFU) were counted after 16 hours of incubation at 57°C. **Results:** Glycoconjugates increased spore retention in treated filters compared to untreated. Assessment of CFU of passed spores was directly indicative of glycoconjugate efficacy. Over 90% of spores were recognized and retained in glycoconjugate-treated filters. And only 15% of spores were retained in untreated filters. **Conclusions:** Glycoconjugates provide high affinity ligands for the recognition and retention of spores in treated filters. This study offers a new model to monitor bacterial spores in fluid food supplies. Furthermore, the use of treated filters can lead to prolonged shelf life of fluid food products.
Paul Bobryshev, student of Dr. Tarasenko, was awarded by Thomas Hogue Memorial Award as outstanding researcher based on decision of the Department of Biology, College Science and Mathematics, April 2007
MICHELLE PARK-KIM, 2007

Publications


Abstracts and presentations


Congratulations to awarded students and their mentors in each category:

**(II) Biological Sciences**

**Michelle Park-Kim**  
Department of Biology, University of Arkansas at Little Rock, Little Rock, Arkansas, USA  
Dr. Olga Tarasenko, Mentor and Dr. Lee Soderberg, UAMS Co-Mentor

Study of Extracellular and Intracellular Inhibition of Bacterial Spores using Glycoconjugates.  
*Park-Kim M.*, *Soderberg L.*, *Tarasenko O.*

After the 2001 anthrax attacks, health leaders have realized the necessity of increasing knowledge regarding *Bacillus* spores and developing of new methods in order to prevent and minimize the impact of bioterrorist attacks. Our goals were to study the extra- and intracellular effects of glycoconjugate ligands contributing to the inhibition of *Bacillus cereus* spores.

Extra- and intracellular inhibition, exposure of glycoconjugate treated or untreated spores, and colony forming unit (CFU) assays were used to assess glycoconjugate ligands. In extracellular inhibition, *B. cereus* spores were treated with glycoconjugates, plated on trypticase soy agar petri dishes, incubated overnight at 37°C, and resulting CFU were counted. For intracellular inhibition, spores were treated with glycoconjugates and exposed to macrophages within 20-24 hrs (37°C, 95% air / 5% CO₂). Undigested spores were released from macrophages, plated onto trypticase soy agar petri dishes, incubated overnight at 37°C, and resulting CFU were counted.

Our results have shown that certain glycoconjugates inhibited spore germination, both extra- and intracellularly in macrophages. Low spore survival and high extra- and intracellular inhibition were observed for two glycoconjugates that were studied. The glycoconjugates were most effective at a dilution of $10^{-6}$. glycoconjugates were more effective at extracellular inhibition compared with intracellular.

The glycoconjugates were able to inhibit spore germination, presumably by binding and altering receptors on the spores. In addition to binding to spores, glycoconjugates may serve as chemoattractants for macrophages.
NATHAN AVARITT, 2006


ARKANSAS DEPARTMENT OF HIGHER EDUCATION
114 EAST CAPITOL
LITTLE ROCK, AR 72201-3818
(501) 371-2000

STUDENT UNDERGRADUATE RESEARCH FELLOWSHIP (SURF) PROGRAM
AWARD NOTICE

November 28, 2005

Nathan Avaritt
101 Spring Valley
Hot Springs, AR 71901

FACULTY MENTOR: Olga Tarasenko

INSTITUTION: University of Arkansas at Little Rock

Student’s Costs: $1,218.75
Mentor’s Costs from SURF: $1,000.00
Student’s Travel Costs from SURF: $400.00
TOTAL SURF GRANT AWARD: $2,618.75

University Match: $1,218.75
Mahlon Martin Fellowship:

You have been awarded the Student Undergraduate Research Fellowship (SURF) for the 2005-2006 academic year with payments indicated above.

By signing this award notice, you agree to conduct in-depth research in the field of study indicated on your 2005-2006 SURF application under the supervision of your mentor. Additionally, you agree to present your research at a state or national conference in your discipline or attend a meeting of experts in your discipline as directed by your mentor. Please sign this award notice to accept or decline the award and return it to the Arkansas Department of Higher Education before December 9, 2005.

CHECK ONE:
I accept the Student Undergraduate Research Fellowship.
I decline the Student Undergraduate Research Fellowship.

Signature of Recipient

Date

12-1-05
Nathan Avaritt, student of Dr. Tarasenko, was awarded by Lester Hosto Award based on his research achievement and decision of the Department of Biology, College Science and Mathematics, April 2006.
McNair Scholars worked under guidelines of Dr. Tarasenko, 2007-2010

April Jones, 2007

Jesse Parsons, 2007

Nancy Rodriquez, 2008

Damone Dickerson, 2009, 2010

Taneicie Sabb, 2010
### Awarded Grants for Summer Research

<table>
<thead>
<tr>
<th>Year</th>
<th>McNair Scholars Program</th>
<th>Investigator(s)</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>“Role of glycoconjugates on plant germination, growth, and resitancy to bacterial infection caused by B. cereus spores”</td>
<td>Tarasenko / Damone Dickerson</td>
<td>$3,800</td>
</tr>
<tr>
<td></td>
<td>“Role of glycoconjugates on germination and growth of rice exposed to B. cereus spores”</td>
<td>Tarasenko / Taneiccie Sabb</td>
<td>$3,800</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>McNair Scholars Program</th>
<th>Investigator(s)</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>“Role of glycoconjugates on plant germination and growth”</td>
<td>Tarasenko / Damone Dickerson</td>
<td>$3,800</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>McNair Scholars Program</th>
<th>Investigator(s)</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>“Role of glycoconjugates on Caspases release by macrophages exposed to B. anthracis toxins and B. cereus spores”</td>
<td>Tarasenko/ Nancy Rodriguez</td>
<td>$3,800</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>McNair Scholars Program</th>
<th>Investigator(s)</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>“B. anthracis toxins recognition and binding using glycoconjugates”</td>
<td>Tarasenko/ April Jones</td>
<td>$3,800</td>
</tr>
</tbody>
</table>

### Abstracts and presentations authored/ co-authored by McNair Scholars

2. Dickerson D., Role of glycoconjugates on plant germination and growth. UALR’s Undergraduate EXPO, Little Rock, Arkansas, April, 2010 (poster)


