A Message from the Dean

Dear Friends,

Greetings! Here’s the latest news from the Fisher College. Our college as a whole is thriving, despite some setbacks in the area of funding and state support. We have, indeed, just experienced a cut to this year’s budget and a somewhat larger one to next year’s, but we’ve been able to handle them. More troubling, the new science building has been delayed by one more year due to cuts in the state capital budget. We are actively fighting to ensure that the building, now due for completion in 2020, won’t slip any further.

The university is currently searching for two leadership positions that are key to the Fisher College: a President and a Dean of the College of Education. I am serving on the search committees for both of these positions, and will do my best to help the university choose strong new leaders.

Enjoy the newsletter and enjoy a beautiful spring season as we prepare for a commencement that will mark the beginning of Towson University’s 150th anniversary year.

Sincerely,

David A. Vanko
Dean
Peer-Reviewed Research Publications


Book Chapters


¹TU graduate student; ²TU undergraduate student; *corresponding author

Manuscripts Reviewed

Dr. Vonnie Shields reviewed a manuscript for Scientific Reports.

Dr. Jay Nelson reviewed a grant proposal to the United States Department of Defense.

Dr. Jay Nelson reviewed a manuscript entitled: “Integration of fish response to ambient oxygenation through the concept of aerobic metabolic scope” for the Journal of Fish Biology.

Dr. Jay Nelson reviewed a manuscript entitled “Adaptive plasticity to water flow habitat in the damselfish, Acanthochromis polyacanthus: linking phenotype to performance” for the journal Public Library of Science.

Dr. Jay Nelson reviewed a manuscript entitled: "Method matters: Considering locomotory mode and respirometry technique when estimating metabolic rates of fishes" for the journal The Journal of Experimental Biology.
Panel Review

Dr. Barry Margulies served on an NIH Review Panel for Development of Novel Therapeutics for Select Pathogens: Influenza.

Other Professional Outreach

Dr. Vonnie Shields was invited to serve as a Review Editor on the Editorial Board of the peer reviewed journal, “Invertebrate Physiology”, a specialty journal of Frontiers in Physiology.

Dr. Vonnie Shields served as a moderator for a set of oral presentations that were presented at the 13th Annual Colonial Academic Alliance Undergraduate Research Conference, Drexel University, Philadelphia, PA, March 27-29, 2015.

Grants and Donations

Dr. Richard Seigel received a new grant from Exelon Corporation for $90,000 entitled “Ecology and Management of Northern Map Turtles in the Susquehanna River, 2015.” Funding from this project goes largely to support hiring undergraduate and graduate students to conduct field work on this endangered species.

Dr. Chris Salice received research funding from the U.S. Air Force through Texas Tech University. The project title is: “Focused Remedial Investigation of Potential Ecological Effects of Perfluorinated Compounds and Associated Human Exposures from Fish Consumption”. The award amount is $58,735.

Dr. Chris Salice and Dr. Valery Forbes (University of Nebraska, Lincoln) submitted a proposal for a working group project to the National Institute of Mathematical and Biological Synthesis (NIMBioS). The proposal was titled: "Dynamic models to link organism performance to ecosystem service delivery for ecological risk assessment of chemicals." If funded, the project will involve a series of work group meetings with participants from the U.S. and Europe to develop a framework for linking ecological effects of anthropogenic activities across multiple scales.

Spotlight on Centers within the Department of Biological Sciences at TU

The TU Biodiversity Center was established by an NSF collections improvement grant to Drs. Lapolla and Roberts. The center provides a focal point for Towson Universities biological collections. For more information visit the TU Biodiversity Center website.

The Women in Science Program seeks to enhance the enrollment and retention of female students in the sciences through interactive teaching methods and effective mentoring. An additional goal is to enhance recruitment, mentoring, retention and visibility of female faculty in the natural, physical, mathematical and computing sciences with an emphasis on those fields where women are underrepresented. Visit the Women in Science website for more information.

The Herpetology website was developed by student as part of their work in Herpetology (BIOL 467). The website describes the common species of amphibians and reptiles found in Maryland.
Publications

Kelly Elkins published the following paper, coauthored by former graduate research student (MSFS graduate) Zoe Krohn:


Kelly Elkins published the following book chapter:


John Sivey published the following paper, coauthored by his undergraduate research students Mark Bickley (senior chemistry major) and Dan Victor (chemistry alumnus):


Research Presentations

Several Chemistry faculty and research students attended and presented research results at the 249th National Meeting of the American Chemical Society in Denver, CO, March 22-27, 2015.

Tim Brunker gave the following platform presentation:

Krause, S.B.*; Brunker, T. J.; Rheingold, A. L. “Cyclic hydroboration using borenium cations.”

Tim’s research student David Szymanik presented the following poster:

Szymanik, D.* and Brunker, T.J. “Triflimide activation of Azaferrocene-boranes for Hydroboration of Linear Alkenes.”

Kelly Elkins coauthored two invited platform presentations and two poster presentations. Graduate research students Jenna Roussillon and Kate Sweetin presented the posters:

Roussillon, J.**; Elkins, K.M. “Multiplex real-time PCR detection and identification of food-borne pathogen *Bacillus cereus* and related *Bacillus* species (poster).”

Sweetin, K.**; Elkins, K.M. “Multiplex real-time PCR detection and identification of food-borne pathogens *Salmonella enterica*, *Escherichia coli* and *Shigella flexneri* (poster).”

Schelble, S.M.; Elkins, K.M.; Walker, R.; Wieder, M.; Tsai, E. “Using TUES funds to create undergraduate scholarship (platform).”

Schelble, S.M.; Elkins, K.M. “Using spectra from undergraduate projects to improve higher order cognition (platform).”

Ryan Sours’ research student, Ravleenkaur Khalsa, presented the following poster (Shannon Stitzel collaborated with Ryan and Ravleenkaur on the research):

Khalsa, R.*; Stitzel, S.E.; Sours, R.E. “Using trace element signatures to determine cocoa liquor provenance.”
Research Presentations

Jon Jopse, an undergraduate research student in Ellen Hondrogiannis’ lab, presented a research poster at the Colonial Academic Alliance Undergraduate Research Conference at Drexel University, Philadelphia, PA, March 2015:


John Sivey delivered invited research seminars in the Department of Chemistry at Bucknell University and in the Department of Civil and Environmental Engineering at the University of Delaware.

Faculty Professional Development/Disciplinary Service

John Sivey reviewed research articles for Environmental Science and Technology as well as Environmental Science and Pollution Research.

Outreach Activities

Mark Burton (senior chemistry major), Allison Ricko (environmental science MS candidate), and John Sivey delivered an educational outreach activity entitled, “The Mathematics of Color and Light” with 6th grade students at a local middle school.

Department Seminars

Dr. Matt Nee, Western Kentucky University, ”Solvation to kinetics: the surprising impacts of ions at Earth’s wet surfaces on the global atmosphere,” March 12, 2015.

Dr. Beth Herndon, Kent State University, “Biogeochemistry of manganese contamination in the critical zone,” March 26, 2015.
Publications and Presentations

Josh Dehlinger and Suranjan Chakraborty's research with Christoph Rosenkranz of University of Cologne, “Getting to the Shalls: Facilitating Sensemaking in Requirements Engineering” was published in the journal *ACM Transactions on MIS*.

Charles Dierbach has had a paper accepted (with lead author James Braman of CCBC) titled “Utilizing Virtual Worlds for Personalized Search: Developing the PAsSIVE Framework” to be presented at HCII 2015 (International Conference on Human-Computer Interaction) in August. The paper will appear in the conference proceedings published by Springer.


Michael McGuire, Martin Roberge (Geography and Environmental Planning), and Jie Lian had their paper entitled “Channeling the Water Data Deluge: A System for Flexible Integration and Analysis of Hydrologic Data” accepted for publication in the *International Journal of Digital Earth*. It will appear in an upcoming issue focused on the storage, integration and processing of digital earth data. The work presented in this publication was supported by a grant from the School of Emerging Technologies.

Jonathan Lazar and Irene Briggs (Baltimore County Public Library) published a paper titled "Improving Services for Patrons with Print Disabilities at Public Libraries" in the journal Library Quarterly. Jonathan Lazar and Michael Stein (Executive Director, Harvard Law School Project on Disability) led a three day long workshop in February at the Radcliffe Institute for Advanced Study at Harvard University, titled "Frontiers in US Law: Equal Access to Information Technology for People with Disabilities," which was attended by some of the nation's top policymakers, lawyers, and computer scientists.

Andrew Mangle and Sandip Patel (Morgan State University), “Issues in user authentication using security questions” was published in the *International Journal of Information and Computer Security*.

Robert Hammell, Ziying Tang, doctoral student Sheng Miao, and collaborators from the U.S. Army Research Laboratory (Dr. Tim Hanratty, John Dumer, and John Richardson) had their paper entitled "Integrating Complementary/Contradictory Information into Fuzzy-Based Vol Determinations" accepted for publication and presentation as part of the Eighth IEEE Symposium on Computational Intelligence for Security and Defense Applications (CISDA 2015) to be held May 26-28, 2015 in Verona, NY.


Sidd Kaza and Blair Taylor conducted a workshop attended by faculty from 14 different institutions entitled: Introducing Secure Coding in CS0, CS1, and CS2 at the 46th ACM Technical Symposium on Computer Science Education (SIGCSE 2015) in Kansas City, MO on March 7, 2015.

Sagar Raina (doctoral student), Siddharth Kaza, and Blair Taylor had a poster entitled, Security Injections 2.0: Using Segmentation, Instant-feedback, and Auto-grading to Enhance Secure Coding Modules for Lower-level Programming Courses, at SIGCSE 2015 in Kansas City, MO.
Publication and Presentations


Sagar Raina, Sidd Kaza, and Blair Taylor had a paper entitled, Security Injections 2.0: Increasing Engagement and Faculty Adoption using Enhanced Secure Coding Modules for Lower-level Programming Courses, at the Ninth World Conference on Information Security Education (WISE 2015).

Shiva Azadegan, Sidd Kaza and Blair Taylor, along with students, Lauren Harris and Jenna Kingsbury attended the Women in Cybersecurity Conference (WiCyS 2015) in Atlanta Georgia on March 27-28, 2015.


Faculty Spotlight

Aristotle said, “Excellence is an art won by training and habitation. We are what we repeatedly do. Excellence, then, is not an act but a habit.” Jess and Mildred Fisher College of Science and Mathematics associate professor Wei Yu, Ph.D. proved once again that Towson University is home to some exceptional faculty and staff.

Wei is the recipient of a 2015 USM Regents’ Faculty Award for Excellence in Scholarship, Research, or Creative Activity. This award is the highest honor that the Board of Regents bestows to recognize exemplary faculty achievement. “Winning a National Science Foundation CAREER grant is a huge accomplishment, and we were so very proud of Dr. Wei Yu when that was announced,” said Fisher College Dean David Vanko. “Now, we’re very pleased that the University System and the Board of Regents have chosen Dr. Wei for a Regents’ Award recognizing his outstanding research record and for his dedication to Towson students.”

Wei is an associate professor of computer and information sciences who has research accomplishments in the areas of cybersecurity, computer networks and cyber-physical systems. In 2012, he received the Fisher College Excellence in Scholarship Award, and just last year, earned a National Science Foundation Faculty Early Career Development (CAREER) award of nearly half a million dollars over the next five years.

His was named Best Paper at the 2013 IEEE International Conference on Communications, and he supervises eight doctoral candidates expected to graduate between December 2014 and May 2017.

—Megan Bradshaw, University Marketing & Communications
Grants

Linda Cooper, and Felice Shore, in partnership with Baltimore County Public Schools, were awarded grants ($23,941) from the National Security Agency to implement summer workshops for Maryland mathematics middle and high school teachers. Drs. Cooper and Shore authored a proposal submitted via Baltimore County for a workshop on Statistics and Probability. The workshops will focus on relevant content in the Common Core State Standards and will highlight pedagogy consistent with the Standards for Mathematical Practices.

Gail Kaplan, Michael Krach, and the Worcester County Public Schools (WCPS), in a first time partnership, collaborated to create a proposal for the Chesapeake Common Core Algebra Academy (C$^3$A$^2$), a professional development program that will focus entirely on the content and pedagogy of new national Algebra standards and related conceptual categories of public middle and high school mathematics programs, as outlined in the Common Core State Standards for Mathematics (CCSS-M) and accompanying (8) Standards for Mathematical Practice. The National Security Agency (NSA) has funded the 2015 - 2016 program for middle and high school mathematics teachers employed by school districts in Maryland and Delaware on the lower Chesapeake Bay region of the Delmarva Peninsula.

Todd Moyer, Wei Sun, and Baltimore County Public Schools (BCPS), in a first time partnership, collaborated to create a proposal for the Common Core Geometry, a professional development program that will focus entirely on the content and pedagogy of new national Geometry Standards, as outlined in the Common Core State Standards for Mathematics (CCSS-M) and accompanying (8) Standards for Mathematical Practice. The National Security Agency (NSA) has funded the 2015-2016 program for middle and high school mathematics teachers employed by school districts in Maryland, Washington DC, and Virginia. The total funding is $23,941.

Papers Published or Accepted for Publication

Alexei Kolesnikov's paper “Characterization of the second homology group of a stationary type in a stable theory”, joint with John Goodrick and Byunghan Kim, was accepted for publication in Proceedings of the Asian Logic Conference.

Coy L. May and Jay Zimmerman have just had the paper “The Density of the Real Genus Values of p-Groups” accepted for publication in the Mathematical Proceedings of the Royal Irish Academy.

Tatyana Sorokina's paper (joint with P. Alfeld) entitled "Linear Differential Operators on Bivariate Spline Spaces and Spline Vector Fields" has been accepted by BIT Journal of Numerical Mathematics published by Springer.

Conference and Seminar Presentations

Alexei Kolesnikov gave a talk “Homology groups in model theory” at the University of Pennsylvania Logic Seminar on March 23, 2015.

Alexei Kolesnikov gave a talk “Polygroupoids 2.0” at the University of Maryland Logic Seminar on February 24, 2015.

On Friday, March 27, 2015, Tatyana Sorokina gave her sabbatical talk “Intrinsic Supersmoothness of Bivariate Functions and Vector Fields.”

Workshops

On February 5th and 6th Honi Bamberger traveled to Middletown, New York to conduct a fraction workshop for all of the newly hired 3rd through 5th grade teachers. During the evening of the 5th she worked with all of the school system's administrators where a consensus was decided upon of what both formative and summative assessment would look like in K - 8 mathematics classrooms. During Towson University's Spring Break, Honi Bamberger, Fran Arbaugh, from Penn State, Cindy Langrall, from Illinois State, and Verna Washington, from the Office of Early Childhood in Montgomery County Public Schools, spent the week in Middletown, New York. The team observed in every kindergarten through sixth-grade mathematics teacher's classroom. In addition to these observations, Dr. Bamberger and her team conducted grade specific workshops.

Other Professional Activities

As part of her continuing work with the Kindergarten students at The Park School of Baltimore, Honi Bamberger taught a measurement lesson in Joanne Yamaka's classroom. After students determined how tall they were in colored links they separated these and created a graph to represent the different colors they had used.

Michael Krach was invited to be a judge at the 2015 Summit Park Elementary School STEM Fair, which was held on Thursday, March 26. There were approximately 100 projects, created by 4th and 5th grade students, to be judged.

Student Clubs

On Monday, February 23rd Ms. Elizabeth (Betsy) Williams, mathematics support teacher from The National Presbyterian School in Washington, D.C. and Ms. Kelly Krownapple, mathematics support teacher from Phelps Luck Elementary School, in Howard County, talked with Mathematics Education Club (MEC) members about how they prepared for the careers they had chosen.

On Thursday, March 12th four Towson University graduates led a panel discussion for the MEC about what it is really like to be a first-year teacher. Russell McCray, Emma Davis, Angela Snyder, and Joanna Gibbs shared how they got hired in Howard, Anne Arundel and Baltimore County and what their first year had been like, so far.
The Fourth Regional Undergraduate Research Conference

The fourth Regional Undergraduate Mathematics Research Conference at Towson University was held on March 7, 2015. Six student speakers from Towson University and five student speakers from the neighboring universities were joined by 30 student participants and 18 faculty and graduate students from as far away as Carnegie Mellon University. Dr. Sergiy Borodachov organized the event, helped by Dr. Min Ji, Dr. Alexei Kolesnikov, and the students of Actuarial Science and Risk Management Club. The event was funded by a grant from the National Science Foundation via the Mathematical Association of America and by the Department of Mathematics.

Student talks at the Conference

Zeba Ahmed gave a talk on “Exact geometry and dimension of bivariate splines” at the Undergraduate Mathematics Research Conference at Towson University. The project was supported by Fisher Foundation as a part of the student activity group “AGAT” led by Dr. Alexei Kolesnikov and Dr. Tatyana Sorokina.

Larry Allen gave a talk titled “Characterization of unconfinable hexagonal cells” at the Undergraduate Mathematics Research Conference at Towson University. The project was completed during the summer 2014 REU at Carnegie Mellon University.

Devan DiMatteo gave a talk on “Dimension of trivariate C¹ splines on double pyramid cells” at the Undergraduate Mathematics Research Conference at Towson University. The project was supported by Fisher Foundation as a part of the student activity group “AGAT” led by Dr. Alexei Kolesnikov and Dr. Tatyana Sorokina.

Andrew Francis gave a talk on “Comparing the bounds of trivariate spline spaces” at the Undergraduate Mathematics Research Conference at Towson University. The project was supported by Fisher Foundation as a part of the student activity group “AGAT” led by Dr. Alexei Kolesnikov and Dr. Tatyana Sorokina.

Rachel Jones gave a talk on “Teachers’ solution to an algebraic and geometric problem” at the Undergraduate Mathematics Research Conference at Towson University. The project was supported by Fisher Foundation as a part of the undergraduate research project “STEM Sports” directed by Dr. Diana Cheng.

Rebecca Spencer-Strong gave a talk on “Calibrating a trinomial Maple model to compute the current values of call options” at the Undergraduate Mathematics Research Conference at Towson University. The project was completed during the summer 2014 REU at Carnegie Mellon University.
Proposals

Vera Smolyaninova was a PI on Towson subcontract ($300,000) of a collaborative proposal entitled MIP: Combinatorial Materials Discovery Center, submitted to NSF.

Joel Moore and Ron Hermann were co-PIs on a NSF IUSE proposal entitled "TU GEO Careers (Towson University Geoscience Educational Opportunities for Careers)" ($316,962) and Rachel Burks, David Vanko, Amy Williams (incoming tenure-track geologist), and Wendy Nelson (incoming tenure-track geologist) were senior personnel. The proposed activities have the goal of increasing recruiting and retention of geoscience (geology, earth-space science, and geology track of environmental science) majors at TU.

Joel Moore was a co-PI along with Vanessa Beauchamp (PI, Biology) and Ryan Casey (co-PI, Chemistry) on a proposal to the Chesapeake Bay Foundation entitled: "The effects of site conditions of the efficacy of stream restoration with regenerative stormwater conveyance systems." $397,745.

Publications

Rommel Miranda’s and Julie Damico’s research paper entitled, “Changes in Teachers’ Beliefs and Classroom Practices Concerning Inquiry-Based Instruction Following a Year-Long RET-PLC Program”, was accepted for publication in the journal, Science Educator.

Rommel Miranda and Ron Hermann’s manuscript entitled, “Integrating continuous formative assessment into inquiry- based classroom instruction,” was accepted for publication in the National Science Teachers Association journal, Science and Children.


Presentations and Abstracts

Rommel Miranda was an invited speaker for the American Geophysical Union Conference in San Francisco, California. He presented a research paper entitled, “Changes in Teachers’ Beliefs about Reformed Science Teaching and Learning, and their Inquiry-Based Instructional Practices Following a Year-Long RET-PLC Professional Development Program.”

Rommel Miranda and Julie Damico presented a research paper entitled, “Changes in Teachers’ Beliefs about Reformed Science Teaching and Learning and Practices Concerning Inquiry-Based Instruction”, at the International Association for Science Teacher Education Conference in Portland, Oregon.

Ron Hermann and Rommel Miranda presented a workshop entitled, “Embedding Vocabulary in an Inquiry-Based Lesson on Stratigraphic Principles”, at the Maryland Association for Science Teachers Conference in Baltimore, Maryland.

Rommel Miranda and Ron Hermann presented a workshop entitled, “Integrating Scientific and Engineering Practices in an Inquiry-Based Lesson on Wind Powered Cars”, at the Maryland Association for Science Teachers Conference in Baltimore, Maryland.

Faculty Spotlight

Dr. Rommel Miranda received the “Outstanding Alumni Award” for exceptional contributions to the field of science education during the Founder’s Day Convocation at Morgan State
Presentations and Abstracts

Rommel Miranda and Julie Damico presented a research paper entitled, “Changes in STEM Teachers’ Beliefs about their Knowledge of, Experience with, and Comfort Level Planning and Implementing Inquiry-Based Instruction”, at the Association for Science Teacher Education Mid-Atlantic Regional Conference in Blowing Rock, North Carolina.

Vera Smolyaninova presented a paper entitled “Experimental demonstration of superconducting critical temperature increase in electromagnetic metamaterials” by Vera Smolyaninova, Bradley Yost,** Kathryn Zander,* Thomas Gresock,** Michael Osofsky, Heungsoo Kim, Shanta Saha, Richard Greene, Igor Smolyaninov, at the March 2015 Meeting of the American Physical Society, San Antonio, TX.

Vera Smolyaninova presented a paper entitled “Self-assembled tunable photonic hyper-crystals,” by Igor Smolyaninov, Vera Smolyaninova, Bradley Yost,** David Lahneman,* Thomas Gresock,** Evgenii Narimanov, at the March 2015 Meeting of the American Physical Society, San Antonio, TX.

Vera Smolyaninova was invited and participated in the press conference organized by the APS at the APS March Meeting 2015, San Antonio TX, were she talked about her work “Experimental demonstration of superconducting critical temperature increase in electromagnetic metamaterials.”

A video showing formation a photonic hyper-crystal produced by Vera Smolyaninova's research group was included in the APS March Meeting 2015 media gallery: http://www.aps.org/meetings/march/vpr/2015/videogallery/index.cfm

Joel Moore gave a seminar talk as part of the the TU Geography "What Matters" series.

Spotlight on Community Engagement

Jane Wolfson, Asli Sezen-Barrie, Ronald Herman and Joel Moore (The MADE-CLEAR Towson University team) supported and co-sponsored, along with Mary Stapleton and Christina Romano (the Towson University Center for STEM Excellence), the first meeting of a two-day ‘Climate Literacy Workshop’ for 20 in-service middle and high school teachers on March 7. The goal for this workshop was to provide information and materials to these teachers so that they could implement a specific laboratory activity about climate change in their classroom. In preparation for the workshop there was extensive development of a teacher manual [including background materials for the teachers, curriculum guidance and relationship of the activity to educational standards, student protocols, etc.] Twenty loaner kits were developed and teachers returned to their classrooms ready to implement this activity “It’s a Gassy World” which explores the relationship between greenhouse gases, carbon dioxide and oceans.
Community Engagement and Professional Service

Rommel Miranda was nominated and elected to serve a 3-year term as the Regional Director for the Mid-Atlantic Association for Science Teacher Education.

After an international/national search, Ron Hermann and Rommel Miranda were unanimously voted by the Executive Board of the Association for Science Teacher Education to serve a second 3-Year Term as Editors of the ASTE Newsletter.

Rommel Miranda reviewed a research manuscript for the journal, Urban Education.

Rommel Miranda was invited and served as a panel member on the NSF "Innovative Technology Experiences for Students and Teachers" Program.

Rommel Miranda served as a Science Fair Judge at the St. Joseph School in Cockeysville, Maryland.

Rommel Miranda facilitated a 2-hr Star Party and facilitated activities on Constellations and Comets with 18 sixth grade students and their families at St. Joseph School in Cockeysville, Maryland.

Rommel Miranda presented 7 planetarium shows and had broader impacts on 131 students at the Benjamin Banneker Historical Park and Museum in Catonsville, Maryland, and the Mt. Washington Elementary School in Baltimore, Maryland.

Vera Smolyaninova served the CLEO2015 Technical Program Committee, Metamaterials and Complex Media Subcommittee, where she reviewed and rated 105 conference papers.

Vera Smolyaninova reviewed an NSF proposal.

Joel Moore presented on the science of climate change as part of the MADE-Clear workshop for local teachers at SciTech on March 12, 2015.

Joel Moore gave a talk on road salt to the Baltimore County of Environmental Protection and Sustainability.

Student Achievements

Kathryn Zander was awarded the Towson University Undergraduate Research Committee Grant for her project “Light Propagation in Luneburg Lens Waveguides,” faculty mentor Vera Smolyaninova.

William Zimmerman was awarded the Towson University Undergraduate Research Committee and FCSM Undergraduate Research Grants for his project “Role of Annealing in Nanoparticle-based Metamaterial Superconductors,” faculty mentor Vera Smolyaninova.


*TU undergrad student **TU grad student
Urban Environmental Biogeochemistry Laboratory News

The UEBL has a new instrument!

Mark Monk, Ryan Casey, and Joel Moore organized the receipt and setup of an elemental analyzer from McCormick Company. A huge thanks to Walter Roy of McCormick (now retired) who offered the instrument to the UEBL and helped get the instrument setup. The elemental analyzer as currently set up can analyze the carbon, nitrogen, and sulfur contents of solid materials (from ~0.03 mg to ~20 mg of each). The instrument also has the capability to analyze for the hydrogen and oxygen content of solid materials.

Student Accomplishments and Activities

Allison Ricko (environmental science MS candidate), Mark Burton (senior chemistry major), and John Sivey implemented an educational outreach activity entitled, "The Mathematics of Color and Light" with 6th grade students at a local middle school.

The Environmental Science and Studies Club (President: Lee Ackerman) has started the semester with goals to increase student involvement in the club through participation in campus- and locally-oriented environmental service activities.

Service to Discipline

Dr. Chris Salice served as editor for two manuscripts in *PLoS ONE* and two manuscripts submitted to *Environmental Toxicology and Chemistry*.

Publications and Presentations

Dr. John Sivey, undergraduate Mark Bickley, and undergraduate alumnus Daniel Victor published the following paper based on work performed in association with the Urban Environmental Biogeochemistry Laboratory:


Dr. Chris Salice gave a seminar at the Patuxent Wildlife Research Center in Laurel, MD: “Climbing the slippery slope: predictive ecotoxicology and risk assessment in a complex environment.”

Dr. Chris Salice had a paper accepted with several co-authors:

Sponsored Research Activity

Joel Moore and Ron Hermann were co-PIs on a NSF IUSE proposal entitled "TU GEO Careers (Towson University Geoscience Educational Opportunities for Careers)" ($316,962) and Rachel Burks, Dave Vanko, Amy Williams (incoming tenure-track geologist), and Wendy Nelson (incoming tenure-track geologist) were senior personnel. The proposed activities have the goal of increasing recruiting and retention of geoscience (geology, earth-space science, and geology track of environmental science) majors at TU.

Joel Moore was a co-PI along with Vanessa Beauchamp (PI, Biology) and Ryan Casey (co-PI, Chemistry) on a proposal to the Chesapeake Bay Foundation entitled: "The effects of site conditions of the efficacy of stream restoration with regenerative stormwater conveyance systems." $397,745.

Chris Salice was the lead on a full proposal to the Strategic Environmental Research Development Program (SERDP). The proposal was submitted with collaborators from Texas Tech University, Oregon State University and CH2MHill:

Salice, C.J., Anderson, T.A., Field, J., McCarty, C: "Advancing the understanding of the Ecological Risk of Per- and Polyfluoroalkyl Substances" for a total award amount of $1,225,907.

Learn more about Environmental Science and Studies at Towson University

Faculty Research Interests:
http://www.towson.edu/ess/faculty_research.asp

Undergraduate and Graduate Programs:
http://www.towson.edu/ess/undergrad_programs.asp
http://www.towson.edu/ess/grad_programs.asp

Contact Us

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Towson University’s Office of Undergraduate Research Committee selected ten students to participate in this year’s Colonial Academic Alliance Undergraduate Research Conference at Drexel University, March 27-29, 2015. Among the 10 students selected were four students from the Fisher College of Science and Mathematics.

These students were:

**Saurabh Khatiwada** (oral presentation; Subrata Acharya (Computer & Info Sciences) & Kelly Elkins (Chemistry), faculty sponsors) presented an oral presentation entitled “Redesigning presumptive drug testing through modern technology.”

**Jonathan Jopse** (poster presentation; Ellen Hondrogiannis (Chemistry), faculty sponsor) presented a poster presentation entitled “Electronic cigarette analysis and testing: Instrumentation and method development.”

**Kathryn Zander** (poster presentation; Vera Smolyaninova (Physics, Astronomy & Geosciences), faculty sponsor) presented a poster presentation entitled “Nanoparticle size dependence of transition temperature of metamaterial superconductor.”

**Angela Ritenour** (poster presentation; Renée Dickie (Biology), faculty sponsor) presented a poster presentation entitled “Effect of vascular endothelial growth factor receptor inhibition on axolotl regeneration.”
The Jess and Mildred Fisher College of Science & Mathematics

Mission Statement

Through rigorous and high quality undergraduate programs in a wide variety of scientific, computing and mathematical disciplines and graduate programs in research-based, practice-based, applied and interdisciplinary fields, FCSM prepares its students to live and work productively in a scientific and technological world and to pursue learning throughout their lives. Faculty members engage both their undergraduate and graduate students through interactive teaching, advising, basic and applied research, and collaborative activities internally and externally. They form partnerships both to serve the metropolitan community as well as to meet regional, national and international needs. The result is dedicated, innovative, flexible, and highly prepared individuals who excel in graduate school, professional school, and careers in industry, government and teaching.

Memorial Gifts… from the Development Office - Gifts benefiting The Jess and Mildred Fisher College of Science and Mathematics or any of the departments mentioned in this newsletter, may be made to Towson University Foundation in honor of a birthday, anniversary or other special occasion, or simply as a thank you for a special favor. Gift acknowledgements will be sent to the donor as well as the individual being honored. For more information, contact the Towson University Development Office at 410-704-3375 or 1-866-301-3375 or write to the Towson University Foundation, 8000 York Road, Towson, MD 21252-0001.

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