



TOP STORY

CCM STUDENTS AND STAFF HONORED

On Friday, May 3, nine students and five CCM professionals were honored at the Center's annual Student Achievement Day.

"We have over 60 graduate and undergraduate students who do research with affiliated faculty and staff at the Center for Composite Materials," says Associate Director Suresh Advani. "We are very proud of the interdisciplinary research conducted by our students in exploring new frontiers in composite materials, and the students selected for the awards have shown special initiative to deserve this honor."

Congratulations
To Our 2013 Student Achievement Day
Award Winners



On Friday, May 3, nine students and five CCM professionals were honored at the Center's annual Student Achievement Day.

The following are this year's award recipients:

R. L. McCullough Scholars Award

Recipient: **Gaurav Pandey, PhDME**

Advisors: Dr. Dirk Heider and Professor Erik Thostenson

Progress Award

Recipient: **Thomas Cender, PhDME**

Advisor: Professor Suresh Advani

Achievement Award

Recipient: **Qi An, PhDME**

Advisor: Professor Erik Thostenson

Recipient: **Joseph Stanzone, PhDCE**

Advisor: Professor Richard Wool



Matthew Sinnot, BME, was one of the many recipients who received 2013 Achievement Awards from CCM Director, Prof. John W. Gillespie, Jr.

TOP STORY
Continued

Outstanding Senior Award

Recipient: **Christine Gregg, BME**

Advisor: Professor Erik Thostenson

Recipient: **Matthew Sinnott, BME**

Advisor: Professor Erik Thostenson

Undergraduate Research Award

Recipient: **Christopher Hewitt, BME**

Advisor: Dr. Shridhar Yarlagadda

Recipient: **Sarah Masters, BME**

Advisor: Professor Erik Thostenson

CCM Scholarship Award

Recipient: **Sanjib Chowdhury, PhD**

Advisor: Dr. Bazle Haque

Recipient: **Weibang Lu, PhD**

Advisor: Professor Tsu-Wei Chou

Directors' Award:

Dr. Bazle Haque • Dr. Nicholas Shevchenko

Mr. Subramani Sockalingam • Dr. Shridhar Yarlagadda



DARPA Warrior Web: A New Approach to Improving Soldier Performance demonstration was given by Dr. Shridhar Yarlagadda, Assistant Director for Research



2000-2013

13 Years of Achievements

Education is our most important product. UD-CCM considers it important to recognize the success of its students because the knowledge gained at UD-CCM furthers the scientific inquiry and technological advances in composites all over the world.

2013 CCM
Student Achievement Day
Event Photos

[Click Here to View](#)

ENGINEERING AWARDS

**SAMPE Honors****UD Students Win Big at SAMPE Conference**

Two University of Delaware Ph.D. students won grand prizes for their presentations at the recent Society for Materials and Process Engineering (SAMPE) international symposium and exhibition in Long Beach, Calif.

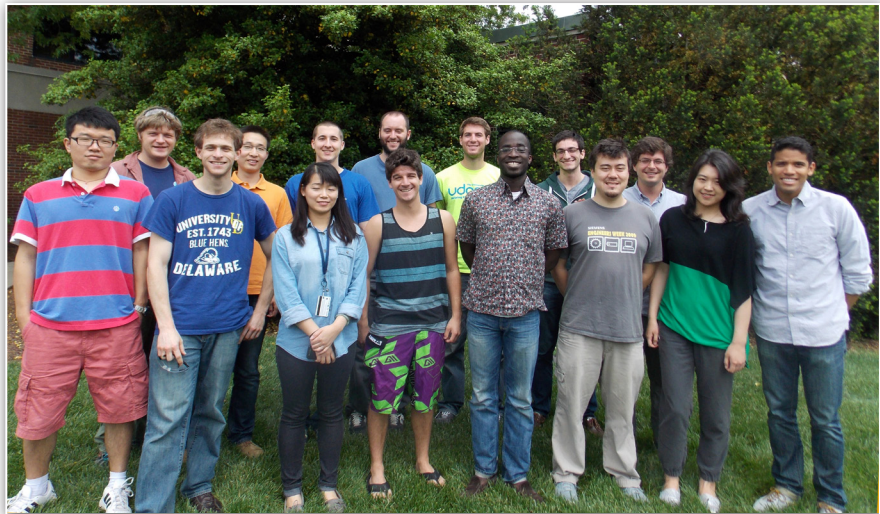
Qi An and **Jennifer Mueller**, both doctoral candidates in materials science and engineering and affiliated with the Center for Composite Materials, will move on to present their work at international SAMPE conferences in Europe and Japan, respectively.

“The students go through a rigorous process to reach this point,” says CCM director John W. Gillespie Jr., who also serves as faculty advisor to the SAMPE Student Chapter at UD. “They first present at the regional student competition, which is hosted by the SAMPE-Baltimore chapter. The winners there are awarded a free trip to the national meeting, where they compete against all other regional winners across the nation. Finally, the national winners are sponsored to present at the international conferences in Europe and Japan.”

Mueller, who is co-advised by Gillespie and Prof. Suresh Advani, took first place and will present her talk, “Diffusion as a Bonding Mechanism for Ultrasonically Consolidated Metal Matrix Composites,” in Nagoya this November.

An, who is advised by Prof. Erik Thostenson, was the second-place winner and will present “Carbon Nanotube Reinforced Fiber/Epoxy Multi-scale Hybrid Composites via Electrophoretic Deposition: Multifunctional Properties, Processing, Characterization and Modeling” in Paris, in 2014.

In addition to the doctoral winners, **Christine Gregg**, a senior in mechanical engineering, tied for first place in the undergraduate category, and a team from CCM placed second out of 17 teams in the bridge competition.

*Christine Gregg**Qi An**Jennifer Mueller**2013 UD SAMPE Team*

ENGINEERING AWARDS

“This is UD’s best showing ever, with success in both the academic and application-oriented aspects of the student competitions,” says Maxime Dempah, president of the SAMPE-UD student chapter.

A team of 13 students collaborated to submit five entries to the bridge competition. In addition to their second-place overall finish, they received the following top division awards:

- 1st place: Natural Fiber Square Beam
- 1st place: Natural Fiber I-Beam
- 2nd place: Glass Fiber I-Beam
- 3rd place: Glass Fiber Box Beam

“We received tremendous support from CCM faculty and staff, the College of Engineering, and SAMPE,” Dempah says. “We also have access to a wide range of state-of-the-art equipment and materials here at the center. It’s a great environment for carrying out these kinds of projects, and we continue to pass along what we’ve learned to the next generation of students through SAMPE.”

About SAMPE-UD

SAMPE-UD provides a venue for students in the materials and processing related fields to exchange ideas and interact with the professional sector. Current SAMPE-UD members include graduate as well undergraduate students from the departments of Civil & Environmental Engineering, Materials Science and Engineering, Mechanical Engineering, Chemical Engineering, and Chemistry, with most graduate students affiliated with the Center for Composite Materials. The group is also a leader in outreach, hosting programs that help to educate over 200 people per year, ranging from middle school students to adult community members. SAMPE-UD typically assists in running two to four engineering outreach programs each year. Along with outreach programs, SAMPE sponsors hands-on experience introducing students to composites manufacturing, providing them with a valuable skill set for careers. This is coupled with networking events, tours, seminars, technical talks and leadership opportunities.

The UD-SAMPE bridge team included Maxime Dempah (master’s, materials science and engineering), Chad Phillips (master’s, mechanical engineering), Alex Vanarelli (master’s, mechanical engineering), Jeffrey Lugo (master’s, mechanical engineering), Gerard Gallo (master’s, mechanical engineering), John Gangloff (Ph.D., mechanical engineering), Hao Liu (Ph.D., mechanical engineering), Hong Yu (Ph.D., mechanical engineering), Zach Melrose (Ph.D., mechanical engineering), Phillip Mirabella (bachelor’s, mechanical engineering), Adrian Sawyer (bachelor’s, mechanical engineering), Raymond McCauley (master’s, mechanical engineering) and Michael Yeager (master’s, mechanical engineering).

Article by Diane Kukich



About SAMPE

SAMPE, an international professional member society, provides information on new materials and processing technologies through chapter technical presentations, two journal publications, symposia and commercial exhibitions in which professionals can exchange ideas and air their views. As the only technical society encompassing all fields of endeavor in materials and processes, SAMPE provides a unique and valuable forum for scientists, engineers, designers and academicians.

ENGINEERING AWARDS

Zhang wins MSEG Chairperson's Outstanding Graduate Student Award

Danning Zhang, a third-year Ph.D. student affiliated with CCM, has won the Materials Science and Engineering Chairperson's Outstanding Graduate Student Award. The award is given annually for overall contribution to the department by a student. The recipient of this award is expected to be an outstanding researcher and also contribute to the overall mission of the department outside of his/her research group. This is frequently demonstrated through service activities and leadership roles.

Zhang has made a number of contributions as the Materials Research Society (MRS)–UD Chapter President:

- Organized MRS research review sessions of MSEG department.
- Organized Career Day event providing face-to-face communication opportunities between students and industrial professionals and potential collaboration opportunities.
- Established POLY/PMSE student chapter at UD for potential activities with the POLY/PMSE community.
- Encouraged students involving into various research associations.
- Provided research and career information to graduate students.
- Assisted College of Engineering student activities.

Zhang's research addresses manufacturing of high-performance fiber-reinforced thermoplastic composites, focusing on void reduction mechanisms with low-cost thermoplastic out-of-autoclave processing. Advised by Professor Jack Gillespie, she is studying material properties with techniques such as high resolution X-ray micro-CT and optical microscopy, experimentally and analytically investigating void reduction mechanisms, and elucidating the material properties–processing–quality relationship of high-performance thermoplastic composite materials with a low-cost manufacturing method.



*Danning Zhang, Ph.D.
student affiliated with CCM*

Departmental and University Awards

- **Qi An:** Best Poster Award at the Society of Plastics Engineers (SPE) Polymer Nanocomposites Symposium.
- **Francis Fish:** Mechanical Engineering Freshman Design Competition.
- **Christine Gregg:** W. Francis Lindell Mechanical Engineering Award, given to Distinguished Seniors, and the Mary and George Nowinski Award for Excellence in Undergraduate Research
- **Cedric Jacob:** University Graduate Fellow Award
- **Zachary Melrose:** Graduate Achievement Award
- **Matthew Sinnott:** Ralph M. Newman, Jr. and Sara Joe Newman Fund

OTHER NEWS

Karbhari named president at UT Arlington

Vistasp Karbhari, who earned his doctorate at the University of Delaware and was a scientist in the Center for Composite Materials from 1991–95, is now the president of The University of Texas at Arlington. The appointment was effective June 1.

The University of Texas System Board of Regents named Karbhari lone finalist for the position at a meeting in February and unanimously approved the appointment at a special board meeting on Tuesday, March 12.

“We are fortunate to have a leader of Dr. Karbhari’s caliber take over the reins of UT Arlington, and we know he is the perfect fit to make sure excellence, accessibility and affordability remain top priorities at UT Arlington,” Regents Chairman Gene Powell said.

Karbhari’s work at CCM focused on the resin transfer molding process for aerospace and automotive applications, cost modeling of advanced composites, durability and damage tolerance, crash energy management, and the use of composites for civil infrastructure applications.

“UD was a great place to get my start in composites research,” Karbhari says. “I really appreciated CCM’s facilities, collaborative and multidisciplinary environment, and connections to industry and federal/DoD laboratories. My time there laid the foundation for everything I’ve done since, and I credit the leadership of Byron Pipes, Roy McCullough, Tsu Wei Chou, Dick Wilkins and Jack Gillespie for creating an environment and ethos that enabled a large number of students, like myself, to become leaders in our fields of research and scholarship. We all learned to appreciate the necessity of integrating advances in fundamental research with the drive for practical solutions through applied research and technology development.”

CCM Director Jack Gillespie recalls Karbhari’s contributions to Bridge Infrastructure Renewal programs funded by DARPA. “He worked closely with Dennis Mertz, Michael Chajes, and me on this program,” Gillespie says, “which led to a national university/industry/government partnership that also included the University of California San Diego, the Federal Highway Administration, and the Delaware Department of Transportation.”

Karbhari was the provost and executive vice president for academic affairs at the University of Alabama in Huntsville. Prior to that, he served as professor, chair and vice chairman of the structural engineering department at the University of California-San Diego.



Dr. Vistasp Karbhari, president,
The University of Texas at Arlington

OTHER NEWS

“UT Arlington is an incredible institution, and I am committed to advancing UT Arlington toward Tier One status, while maintaining and strengthening excellence in both research and education and ensuring the success of our undergraduate and graduate students,” Karbhari said. “I am honored by the Board’s decision to name me as president, and I am looking forward to leading this wonderful University and building on the tremendous foundations laid by President Spaniolo.”

Karbhari is a noted researcher and scholar and is a published author or co-author of more than 460 scientific papers in archival journals and conference proceedings. He received his bachelor’s and master’s degrees from The University of Poona in India. He earned his doctorate at UD Department of Civil Engineering in 1991.

POSITIONS AVAILABLE

The Center for Composite Materials in the College of Engineering at the University of Delaware is currently recruiting applicants for the following positions:

Postdoctoral Researcher

This position is in the area of electrical conductivity modeling of carbon composites. Qualifications include a PhD in engineering, physics, materials science or related field with an emphasis in electromagnetic and/or composites. Research work will be aimed at the development of a modeling foundation to capture the fundamental electrical transport mechanisms for CFRP materials. The conduction physics will be developed initially for unidirectional prepreg and extended for other material forms. The influence of high electric currents due to high intensive electrical field will be evaluated. The position requires a good understanding of FEA and multi-physics modeling. Hands on experience in fabricating and testing of composites are also a plus. Good written and oral communication skills are required, as well as the ability to interact effectively with industrial/government sponsors and other CCM staff and students.

[To apply for this position, please go to the UD JOBS website.](#)

Postdoctoral Researcher

This position is in the area of thermoplastic process modeling. Qualifications include a PhD in engineering or related field with an emphasis on polymer composites. Applicants are required to be knowledgeable in thermoplastic processing (PEEK, PEKK, PEI), first principle process modeling and finite element analysis. Hands on experience in fabricating and testing of composites is required. Good written and oral communication skills; ability to interact effectively with industrial and government sponsors, as well as other CCM staff and students.

To apply for this position, submit a cover letter and resume to Corinne Hamed at hamed@udel.edu

POSITIONS AVAILABLE

Postdoctoral Researcher

This position is in the areas of numerical analysis & design and/or process modeling and manufacturing science of composite materials structures. Qualifications include a PhD in engineering or related field with an emphasis on polymer composites. Applicants are required to be knowledgeable in finite element analysis and current state-of-the-art FEA software, possess a solid understanding of the basic principles of structural mechanics and be able to apply these principles to composite structures. Hands on experience in fabricating and testing of composites are also a plus. Good written and oral communication skills are required, as well as the ability to interact effectively with industrial/government sponsors and other CCM staff and students. To apply for this position, submit a cover letter and resume to Corinne Hamed at hamed@udel.edu

Limited Term Researcher

This position is in the areas of numerical analysis & design and/or process modeling and manufacturing science of composite materials structures. Qualifications include a Masters in engineering or related field with an emphasis on polymer composites. Applicants are required to be knowledgeable in finite element analysis and current state-of-the-art FEA software, possess a solid understanding of the basic principles of structural mechanics and be able to apply these principles to composite structures. Hands on experience in fabricating and testing of composites are also a plus. Good written and oral communication skills are required, as well as the ability to interact effectively with industrial/government sponsors and other CCM staff and students. To apply for this position, submit a cover letter and resume to Corinne Hamed at hamed@udel.edu

Industrial and Government Sponsors

Engineer, Oxford, PA

Leading Edge Composites

Requirements:

- Minimum 2 years experience with a 3D CAD design software package
- Experience in creation, modification, and interpretation of technical engineering drawings
- Basic knowledge of composites manufacturing techniques, materials, and terminology
- Experience with shop tools and measurement equipment commonly used in composites fabrication
- Detail oriented and self motivated, ability to be productive with little or no supervision
- Strong written communication and organizational skills
- Ability to effectively communicate with customers and various shop personnel
- Willingness to learn and research current and future technologies related to composites
- Ability to work well under pressure and short timelines when necessary

Additional Qualities Preferred:

(Continued)

POSITIONS AVAILABLE

- Experience in composite tooling design
- Knowledge of ISO9001 and AS9100 quality control practices
- Knowledge of FAA – PMA and STC procedures
- Experience with CNC operation and/or programming
- Experience with process engineering and documentation

We encourage skilled and motivated professionals to submit their resumes.

Please send to Sue Corby: scorby@lec-composites.com

Leading Edge Composites is an Equal Opportunity Employer.

Early-Stage Researcher Position, RWTH Aachen University

3T TextilTechnologie Transfer GmbH

In close collaboration with the Institut für Textiltechnik of RWTH Aachen University, the new employee will work on methodical approaches to analyse and increase energy efficiency in textile machines. The job includes the enrollment in the doctoral programme of the faculty of mechanical engineering at RWTH Aachen University.

[Click here for details.](#)

Employment opportunities are posted on the CCM website as a benefit offered to consortium and affiliated members only.

An Equal Opportunity/Affirmative Action Employer: The University of Delaware is committed to assuring equal opportunity to all persons and does not discriminate on the basis of race, color, gender, religion, ancestry, national origin, sexual orientation, veteran status, age, or disability in its educational programs, activities, admissions, or employment practices as required by Title IX of the Education Amendments of 1972, Title VI of the Civil Rights Act of 1964, the Rehabilitation Act of 1973, the Americans with Disabilities Act, other applicable statutes and University policy.

Inquiries concerning these statutes and information regarding campus accessibility should be referred to the Affirmative Action Officer, 305 Hullihen Hall, (302) 831-2835 (voice), (302) 831-4552 (TDD).

MEMBER NEWS

We would like to thank **JML Engineering**, Newark, DE for becoming our newest consortium member. We would also like to thank **3M**, Maplewood, MN, **Graco**, Minneapolis, MN, and **Pratt & Whitney**, Middletown, CT, for the recent renewal of their memberships. Thanks to our many other consortium members for continuing to participate in CCM's research and development activities.

To learn more about the benefits of becoming a member, please visit us on the web at www.ccm.udel.edu/Consortium/benefits.html



*Celebrating 40 years
of significant
contributions to
composites science
and technology, the
education of students,
and the creation and
transfer of technology
to industry.*

Please visit us on the web at <http://www.ccm.udel.edu>

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