UT, SuGanit receive $2 million from state to scale up biofuel research, production

By Jon Strunk

In 2006, Praveen Paripati started collaboration with researchers at The University of Toledo who were investigating a unique pretreatment to help convert the sugars in cellulosic biomass — forest residues, switchgrass, corn stalks, etc. — into ethanol.

Initially working at the milligram level, researchers also tried to convert one of glucose’s trickier cousins, xylose, into ethanol. Over the next four years, efforts were made to scale up the process to larger input levels. It seems to be working.

Last month, the Ohio Third Frontier granted UT and Paripati’s Reston, Va.-based SuGanit Systems Inc. $2 million to implement the process using inputs of one ton of biomass waste.

“The grant will enable us to scale up the process and operate a pilot facility while we plan for a larger production line,” said Paripati, whose labs with UT researchers soon will be occupying space in the University’s new Nitschke Technology Center.

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Rockets’ 2011 football recruiting class rated No. 1 in MAC

By Paul Helgren

The University of Toledo football program unveiled its 2011 recruiting class last week, and for the second year in a row Head Coach Tim Beckman and his staff have signed one of the top classes in the Mid-American Conference.

Rivals.com and Scout.com both rank Toledo’s 2011 recruiting class as No. 1 in the MAC. A year ago, UT’s 2010 recruiting class also was ranked No. 1 in the MAC by Rivals.

The Rockets added 19 signees to a group of eight players who joined the program in January, bringing the total number of new players to 27. Those eight players are enrolled at UT and participating in off-season workouts. Fourteen of the new players are ranked as either three-star or four-star recruits.

The new players who were ranked as four-star recruits by at least one recruiting service coming out of high school include three transfer students: running back Josh Haden (Boston College), safety Vladimir Emilien (Michigan) and safety Jordan Haden (Florida). The fourth is defensive end Andre Sturdivant, a signee from Glenville High School in Cleveland.

Beckman said the relentless efforts of his staff, combined with a successful 2010 season, aided in UT’s success in securing another top recruiting class.

“I think the word is getting out about all the great things that are happening in our program,” said Beckman, who led the Rockets to an 8-5 record and an appearance in the Little Caesars Pizza Bowl in 2010.

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Journal article looks at chemistry of possible new life form

By Jon Strunk

On Dec. 2, 2010, NASA held a press conference to announce a new form of life had been discovered — bacteria with a molecular DNA structure based on the element arsenic instead of phosphorus, an element previously thought essential for life.

But almost immediately, there was skepticism among the scientific community, questioning whether an element poisonous to most life could in fact be one of its building blocks.

In January’s issue of the journal Biochemistry, Dr. Ronald Viola, UT Distinguished University Professor of Chemistry, and Dr. Dan Tawfik of the Weizmann Institute of Science in Israel explore the possibilities of the compound arsenate replacing phosphate in biomolecules and advise not dismissing too quickly the possibility of arsenic-based life.

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INSPIRING SPEAKER: Dr. Shanda Gore, assistant vice president for equity and diversity, talked with U.S. Army combat veteran, business leader and author Wes Moore, who signed her program at UT’s 27th Annual Aspiring Minority Youth Conference last month. Moore was the keynote speaker at the event; this year’s theme was “Success or Failure: The Consequence of Choice.” He shared his story about growing up in Baltimore and the Bronx and making some poor choices before excelling in military school. Moore was a paratrooper and captain in the Army who served a combat tour of duty in Afghanistan in 2005 and 2006 and then was a White House Fellow from 2006 to 2007 and a special assistant to Secretary of State Condoleezza Rice. He is the author of The Other Wes Moore: One Name, Two Fates (2010).

UT, SuGanit

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Commercialization Complex. His production line also will be built in Toledo.

Working with researchers in UT’s colleges of Engineering and Natural Sciences and Mathematics, the seven-person company hopes to nearly double the number of its workers over the next year as its new process creates between 60 to 90 gallons of ethanol per ton of biomass.

“The goal is to get to a point where we’re processing 40 to 50 tons of biomass per day,” Paripati said, highlighting that he chose Toledo despite his Virginia home address due to regional logistic assistance and the efforts of economic development partners in northwest Ohio.

“This is what successful economic development looks like,” said Megan Reichert, director of UT incubation.

“Whether the Port Authority or the city or the Regional Growth Partnership, each partner offers something different to help entrepreneurs and small business succeed.”

SuGanit and UT researchers Dr. Sasidhar Varanasi and Dr. Patricia Relue have developed a catalyst that enables yeast to convert glucose and xylose into ethanol.

Reichert said northwest Ohio’s agricultural infrastructure offers, literally, tons of biomass, which would otherwise be thrown away or left to rot, that can be converted.

“Not only will this result in growth for SuGanit, but also the opportunity for jobs across the supply chain,” she said.

Even better, according to Paripati, is that the process leaves no waste. Lactic acid, another product of the process, can be used to create plastics and environmentally friendly cleaning solvents, he said. The rest of the material not converted to ethanol can be changed to other products.

“The flexibility of our process allows us not to depend on a single type of biomass, which means we’re impacted less by the seasonal variations of when particular types of biomass waste are available,” Paripati said.

Since 2006, Reichert and Paripati said UT and SuGanit have received more than $4 million in state and federal grants to support biofuel research activities.

Journal article

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According to Viola, the supporting data for the research NASA announced are slim.

“While there is evidence of the compound arsenate in the study, there is also evidence of the compound phosphate. There’s no direct evidence the arsenate has taken the place of the phosphate molecule in the organism’s DNA structure,” Viola said.

But the pair argue that questions about the NASA announcement shouldn’t eliminate the notion of arsenic-based life, but instead should promote new research into the element’s place in biochemistry.

“At the center of the debate is whether arsenic, which has a similar chemical structure to phosphorus, can be substituted for each other among some organisms,” Viola said.

“For this interchange to occur, organisms would need to develop extremely selective enzymes to detect the differences between arsenic- and phosphorus-based compounds.”

Viola and Tawfik said that the “promiscuity” or willingness of organisms to accept different compounds on which to build “generally provides the starting points for the evolution of new protein functions.”

“The notion of life without phosphate might be proven wrong, but life with arsenate presents extreme challenges as well as intriguing research opportunities,” Viola and Tawfik wrote.

The biggest challenge that must be overcome is the low stability of arsenate compounds, which is especially critical when the integrity of an organism’s genetic information must be maintained.

“The study of the structural, functional and evolutionary aspects of arsenate-phosphate discrimination and of the mechanisms for the discrimination of similar ions may therefore yield key insights into the possibilities of alternative life chemistries,” the researchers wrote.

Viola
In memoriam

Dr. Robert C. Bobo, Sylvania, a longtime faculty member in the College of Medicine, died Jan. 25 at age 68. He was an associate professor of clinical pediatrics from 1990 to 1995, and served as a volunteer clinical professor in the Department of Pediatrics from 1977 to 1990 and from 1995 until his death. An avid golfer, Bobo volunteered for some 10 years at the Jamie Farr Owens Corning Classic.

Dr. Bogdan C. Novak, Toledo, whose internationally recognized work in Slavic and Slovene history included three decades of teaching in the UT Department of History, died Feb. 1 at age 91. He joined the University in 1961 as an assistant professor and was promoted to associate professor in 1969, and professor in 1970. In 1964, he was given the Outstanding Teacher Award. A member of several professional organizations that included the American Association for the Advancement of Slavic Studies and the Society for Slovene Studies — which he co-founded — the Slovenian native and naturalized American citizen wrote a book, Trieste 1941-1954: The Ethnic, Political and Ideological Struggle, that was published by the University of Chicago Press in 1961 (second edition in 1996) and was later translated into Italian. He was named professor emeritus at his 1989 retirement and continued to teach for another two years. His papers, including research materials, were given to the Ward M. Canaday Center for Special Collections in 1992.

UT to present MLK Scholarship awards Feb. 18

The Dr. Martin Luther King Jr. Scholarship was established in 1969 and has helped 95 University of Toledo students pay for their education and, in return, honor the American leader’s legacy.

Two more students will be added to that group when the 2011 recipients are announced Friday, Feb. 18, at a reception from 6:30 to 8:30 p.m. in the Driscoll Alumni Center on Main Campus.

“The reception is open to the public and we hope that members of the UT community come out to support these students as they receive this prestigious award,” said Vern Snyder, vice president for institutional advancement.

The scholarship is based on academic standing and community service.

Kristian Brown, a 13 ABC News anchor, will be the emcee for the event. Joseph High, a member of the UT Board of Trustees, will be the keynote speaker.

High will speak about the importance of stewardship and transformation personally and collectively as part of the University’s community.

“As the winds of transformation blow across our world and campus, it is wise and wonderful to reflect on principles that guide us and honor people who inspire us to new levels of being and performance,” High said.

The scholarship has been funded for the last 16 years by the presenting sponsor Paramount Advantage. Paramount will be represented by Mark Moser, vice president of marketing. He and UT President Lloyd Jacobs will give opening remarks.

Admission for the reception is $25 per person and $10 for students. Attendees are asked to RSVP by Friday, Feb. 11, to the Special Events Office by e-mailing specialevents@utoledo.edu or calling 419.530.2200.

 TICKLED PINK: The Blue Crew went pink — and expanded for a good cause last month. For a donation, Rocket fans became honorary members of Blue Crew and cheered on the Toledo women’s basketball team, which downed Kent State, 66-53, in Savage Arena. A total of $1,125 was raised for Susan G. Komen for the Cure of Northwest Ohio.
The University Fellowship is the highest award that the College of Graduate Studies provides to doctoral students who display exceptional achievements and academic promise in their fields of study.

This highly competitive honor is awarded to up to 10 students, providing them with a stipend, tuition waiver and remission of other fees. The fellowship is designed for incoming doctoral students or current students in the first year of their program and can be renewed for up to three years if the student maintains an outstanding academic record.

Although the awards have been given for more than 20 years, a recognition event was held for the first time for the new group of fellows at the December Graduate Council meeting. Dr. Patricia Komuniecki, vice provost for graduate affairs and dean of the College of Graduate Studies, and Dr. Mark Tempelin, associate professor of curriculum and instruction and chair of the Graduate Council Executive Committee, presented the students with recognition certificates.

“We are very excited to start this tradition of publicly recognizing the University Fellowship recipients,” Komuniecki said. “This also is a chance for the students to be introduced to the Graduate Council and to meet other University Fellows. The doctoral advisers were also present to be recognized for the important mentoring role that they play.”

The five newest recipients are Maria Hurtado Alvarado in psychology, Qingnian Goh in exercise science, Robert Layne in cell/molecular biology, Kelly Marbaugh in biomedical engineering, and Vafa Saboorideiliami in manufacturing and technology management.

They join five continuing fellows: Christa Graham in chemistry, Marco Nardone in physics and astronomy, Megan Powell in mathematics, Mohamed Tesfaye in civil engineering, and Adam Keith in chemistry.

The University Fellowship Program was expanded in 2010 from a group of six students to 10 at a given time to allow more students the opportunity to be recognized and to highlight this program as a recruiting tool for UT.

“Last year, we had 34 applicants competing for the five available fellowships. All of the applicants displayed excellent credentials, so the Committee on Scholarships and Fellowships had a difficult task in selecting the finalists,” Komuniecki said. “The competition for new fellowship applicants for academic year 2011-12 is now open, and we hope to welcome several new fellows to the graduate community this fall.”

Applicants interested in applying for the University Fellowship Program should visit http://www.utoledo.edu/graduate/scholarships/index.html.
Call for art: Students invited to submit works

The Art Department will hold its 2011 Juried Student Exhibition Feb. 28 through April 1 in the Center for the Visual Arts Gallery on the Toledo Museum of Art Campus.

This exhibition is open to all undergraduate, graduate and post-baccalaureate students in any discipline enrolled at The University of Toledo.

Students who wish to submit artwork for consideration should bring no more than three entries to the Art Department in the Center for the Visual Arts between 9 a.m. and 5 p.m. Friday and Saturday, Feb. 18 or 19.

The exhibition is open to all media. Original artwork, including paintings, drawings, prints, photography, sculpture, ceramics, mixed media, time-based work and animation, may be submitted. Two-dimensional work must be ready to hang; three-dimensional works must be stable.

Contact a UT studio art faculty member or Dr. Leanne Gilbertson, gallery director, if you have questions about preparing artwork for entry.

For entry forms and details, go to http://www.utoledo.edu/as/art/juriedStudentinfo.html.

For more information, contact Gilbertson at 419.530.8320.
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UT Hockey to face off against winter weather

By Sarah Riemann

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he UT Hockey Club will host a “Winterfest” outdoor game modeled after the National Hockey League’s Winter Classic.

The game against the Jackson Community College Jets will be at 3 p.m. on Saturday, Feb. 12, at Ottawa Park. Free admission is offered to UT students with their Rocket Cards and includes free skate rental and open skate following the game. Cost for the public is $5.

“We want to get students outside and when you have something fun, like a hockey game, it’s easier to get them moving and outside,” Coach Brent Figueira said.

“I started playing hockey outside, so I’m hoping this event gets people interested in the game.”

The hockey team will also host the benefit game against Wright State University Saturday, Feb. 19, at 3 p.m. at Tam O’Shanter Ice Arena, 7060 Sylvania Ave. in Sylvania. The proceeds from game admission, which is $5 for the public and $3 for students, will benefit the Big Brothers Big Sisters of Northwest Ohio.

“UT Hockey wants to give back to the community, and while we may not always be able to do this financially, we can certainly do it by being role models for the kids of the Big Brothers Big Sisters program,” said Greg Urig, team general manager.

Open skate and a pizza lunch will precede the game for all Big Brothers Big Sisters participants and volunteers. An autograph session for hockey fans will follow the game.

“I feel that doing something for a child is the best thing you can do,” Figueira said.

“We always want people to show support for us as a team but, more importantly, we want to show support for the community and the UT campus.”

For more information, visit www.utoledohockey.com or contact Urig at 440.225.6827.

Rockets’ recruits

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“The winning tradition is back at Toledo, and a lot of young men want to become a part of that. This year’s recruiting class is a very talented and committed group. They will be a major part of the Rocket family for the next four or five years.”

Locally, UT signed three student-athletes: Kyle Cameron, a center from Toledo Central Catholic; Gabe Gilbert, a linebacker from Clyde High School; and Eddie “Cheatham” Norrils, a defensive back from Toledo St. John’s who was named The Blade Player of the Year in northwest Ohio. Norrils joins Rockets Eric Page (Springfield High School) and Isaiah Ballard (Toldeo Rogers) as The Blade Player of the Year selections.

“We really put a lot of emphasis on recruiting in our own backyard, not only in northwest Ohio but in the five-hour radius around Toledo that we call ‘Rocket Nation,’” Beckman said. “There’s a lot of great talent in the state of Ohio, and we signed some of the best players in the state. Locally, we really want the best players from northwest Ohio to stay at home and play at Toledo. Our coaching staff is working very hard to make that happen. In the last two days of recruiting, each of our seven assistants visited eight schools in the area, so we visited a total of 112 schools in Ohio in those last two days. That shows you the level of commitment we are making to recruit locally.”

Beckman noted that 16 of the new players attended a Rocket football summer camp, either at the Glass Bowl or at one of the satellite camps that the Toledo coaches conducted around the state. “That shows how important those high school camps are,” Beckman said. “High school recruits are getting a chance to become familiar with our coaching staff, and we get a chance to see a lot of young football talent from around the state.”

Eight of UT’s 27 new players previously signed letters of intent and are enrolled in school: line backer Jordan Barnes, defensive back Vladimir Emlien, defensive lineman Keenan Gibbs, defensive back Jordan Haden, cornerback John James, tight end Colby Kratch, defensive lineman Phil Lewis and cornerback Keith Suggs. Gibbs, James and Suggs will have freshman eligibility in 2011. Barnes, Kratch and Lewis are junior college transfers; Barnes will be eligible as a sophomore in 2011, while Kratch and Lewis will be juniors. Emlien (Michigan) and Haden (Florida) are transfers who will have to sit out a year before becoming eligible to play in 2012.

To see a synopsis of the Rockets’ 2011 recruiting class as of Feb. 2, go to utrockets.com.

80 companies to participate in business job fair Feb. 11

By Bob Mackowiak

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though they build their futures in a recovering economy, 80 regional and national companies will participate in a job fair for students and alumni of The University of Toledo College of Business and Innovation Friday, Feb. 11, from 1 to 4 p.m. in the Student Union Auditorium.

This sets the record for the largest number of participating companies at the college’s annual spring job fair and is 26 more companies than last year. Employers will be looking for students to participate in business internships programs, as well as for seniors and graduates seeking full-time employment.

Among the companies planning to participate are Eli Lilly, Frito-Lay, Kraft, Owens Corning, Savage & Associates, the Internal Revenue Service and the Cleveland Cavaliers.

“The fact that so many well-known companies are coming to the UT College of Business and Innovation to find the talent they need reflects very positively on the quality of both our programs and our students,” said Dr. Terribeth Gordon-Moore, associate dean of the college. “It also demonstrates the extremely dynamic and mutually beneficial relationship enjoyed by our college and the business community.”

“This semiannual job fair is part of what we do to prepare our students for their futures,” she added. “We strive to provide the necessary resources so our students can conduct their own tailored job searches.”

Approximately 450 UT College of Business and Innovation undergraduates, graduates and alumni are expected to attend the event.
Focus on customer satisfaction begins at UT Medical Center

Customer service hasn’t always been a top priority in the health-care setting. As Ioan Duca, director of patient satisfaction at UT Medical Center, explained, many seeking medical attention are unsure of what to expect, worried and scared about their situations.

“Service excellence in a hospital setting is not a smile-and-feel-good, flavor-of-the-month philosophy,” he said. “It’s about delivering an outstanding, quality, healing experience for all of our customers and their family members. Ultimately, it’s about creating and sustaining a patient-centered environment.”

During his first 90 days at UTMC, Duca has conducted a thorough cultural audit, launched a comprehensive strategic plan aimed at improving the overall patient experience, and laid the foundation for a program called iCARE University.

The audit was revealing. “We have amazing people working here who want to make a difference.” Duca said.

However, with patient satisfaction scores hovering at about 30 percent, change is imperative. Duca’s goal is to achieve a 15 percent increase in satisfaction ratings by the end of this year.

“Looking across the nation, when an organization’s patient satisfaction scores are in the bottom quartile, it is a good indicator that creating optimal patient experiences has not been our focus,” he said. “Although not easy to face, it is our reality, but we know exactly where we are starting. We have a huge opportunity to make a difference.”

Duca expects the manager for the iCARE University to be on board by mid-February to guide a program focused on accountability and best practices in health-care service. “iCARE University will be the nursery for raising true service champions,” he said. “We will focus on leadership and staff alike.”

Dr. Scott Scarborough, interim vice president and executive director of UTMC, and senior vice president for finance and administration, is among those participating in service training. “Each one of us is responsible for improving patient and customer satisfaction in our circle of responsibility,” he said, noting that insurance reimbursement rates are increasingly connected to satisfaction scores. “It includes everyone, from the employee clearing the sidewalk of snow, to the person ringing up the lunch charge, to our nursing and physician personnel.”

Employees will learn more about iCARE University and their roles in UTMC’s performance improvement strategy during a service excellence fair slated later this month on Health Science Campus. Duca said part of the message to employees is “expect to be respected, praised and stretched” as part of new service standards.

“We need to spread the word and engage the entire employee populace. Imagine what we can do when we have 3,200 people on the same page.”

Tracking the storm

Before the big snow arrived last week, someone walked by Austin Collins’ “Temple VI” sculpture, which sits on the south side of the Health Education Building on Health Science Campus.