**Professor unlocks black hole mystery**

Someday scientists will trace gravitational waves backward in time and space to their originating source—to the collisions of compact masses that created them and, perhaps, to the beginning of the universe.

While technology to detect and observe gravitational waves improves, scientists like RIT’s Manuela Campanelli are realizing important advances that will make the field of gravitational wave astronomy a reality. In 2005, Campanelli and her colleagues, Carlos Lousto and Yosef Zloschewitz, were one of two groups of scientists credited with simulating the merger of two black holes on a supercomputer according to Albert Einstein’s theory of general relativity for strong field gravity.

Campanelli’s team solved the 10 interrelated equations for strong field gravity that comprise Einstein’s famous field equations, explaining the connection between matter, space and time. The ability to detect gravity waves has surged for years on solving the equations and simulating the environment—the merger of two black holes—that would lead to them.

Building on their breakthrough, Campanelli and her team, collaborating with RIT astrophysicist David Merritt, recently observed changes in the gravitational field when spinning black holes collide. Their papers, posted on an ArXiv.org, show spinning black holes wobbling like a top and confirm the spinflip phenomenon that occurs when the remaining black hole in a merger changes its orientation. Her research also verifies the occurrence of recoil or “kick” that moves or displaces a black hole after merging with another of unequal size and different spin orientation.

Campanelli recently joined RIT’s School of Mathematical Sciences from the University of Texas, Brownsville, to direct the new Center for Relativity and Gravitation, which focuses on computational gravitational physics and astrophysics research. Following her from the Center for Gravitational Wave Astronomy are Lousto, Zloschewitz and postdoctoral researcher Hiroki Yokoh.

“To do this level of research and to stay ahead of the competition really depends on direct access to supercomputing facilities,” Campanelli says. “It comes down to computer brainpower.”

“It is a real coup for RIT to have attracted a world-class researcher of the caliber of Manuela Campanelli,” says RIT Provost Stanley McKenzie. “She will further enhance our already formidable group of astrophysics faculty and serve as a mentor and role model for faculty in our School of Mathematics.”

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**RIT men capture Atlantic hockey title**

Back in September, RIT was picked to finish eighth in the Atlantic Hockey Association pre-season poll. The Tigers were the new kids on the block, having made the jump from Division III to Division I the season before.

However, the Tigers had one goal or staff member who has demonstrated a commitment to public service.

Frisina has been a pioneer in the field of deafness and hearing loss. Her research focuses on computational gravitation for Relativity and Gravitation, which focuses on strong field gravity. Einstein’s theory of general relativity for strong field gravity was solved for the first time in 2005 by Campanelli’s team.

Campanelli’s research on black hole mergers has earned her a Distinguished Alumnus Award from the Rochester School for the Deaf and the Lyon’s Founder Award from the Rochester School for the Deaf. She has served as an advisor and on the board of directors for many organizations in leadership roles, including Highland Hospital, Upstate Health System, St. Ann’s Home, WXXI-TV and the George Eastman House.

"Bob has been a major force at RIT, with the creation and growth of NTID, and in the Greater Rochester community," says one nominator. "He has focused his impressive energies in three principal domains: education, healthcare and cultural enrichment." In addition to earning many RIT awards, such as the Presidential Medallion, the Principal Investigator Award and the RIT Diversity Trailblazer Award, he has earned the Distinguished Alumnus Award from Westminster College and the Bicentennial Medal of Excellence Award from the New York State Board of Regents, the Civic Award for Education from the Rochester Chamber of Commerce, the Lyon’s Founder Award from the Rochester School for the Deaf and the Special Recognition Award from University of Buffalo.

Frisina will donate his $2,500 gift to Davis from RIT to Rochester Rehabilitation Center, Rochester Hearing and Speech Center and the Rochester School for the Deaf.

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A group of eight RIT community members will make guest appearances on the NBC drama Law & Order: Criminal Intent March 20. The group, which includes five students from the National Technical Institute for the Deaf, an NTID alumnus, NTID assistant professor Louise Davis Haggerty and Public Safety senior officer Idalia Vazquez, served as extras in the episode, which will deal with several deaf issues.

The opportunity arose when Davis Haggerty, a union attorney who runs a theatre company in New York City, was contacted by an agent who said the show was seeking deaf actors who could sign. Davis Haggerty agreed to accept the opportunity and offered the services of her students, as well.

The group drove to New York City Feb. 15 and was on the set for nearly 14 hours. Davis Haggerty says the experience was more than worth it. "It was an added benefit for the students who, as all aspiring actors, want to add to their experience, their resumes and theirrésumé, as if we were all on the cast of the show," she says. "We were treated very well, we all got the experience, and it was a great first job."

Davis Haggerty says the experience was more than worth it. "It was a fabulous experience," she says. "We were treated very well, very well indeed. We all added to the experience, and the professional paycheck. Every actor must work a minimum of three Screen Actors Guild certified jobs (one in which you get paid and treated like a professional) in order to join its union. His experience was counted as one of those jobs for each of the students.

"Screen Actors Guild really helps their members do bigger work, so it’s a big deal," Davis Haggerty says. "They may not become stars, but it helps them do regular extra work like this."

RIT students, staffers appear on NBC drama

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A healthy balancing act

While RIT faculty and staff members embark on the annual Eat Well Live Well Challenge, RIT students are maintaining their physical fitness in wellness classes offered at the Student Life Center. Due to increasing popularity, the Student Life Center offered a record number of core courses offerings during the winter quarter. The Core Stability class, pictured above, is one of the most popular classes offered. To view more photos of RIT wellness classes, visit www.rit.edu/news and click on “Photo Gallery.”

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Class stresses importance of quality writing skills

Lisa Hermen has pried open the door to the classroom. “I think students are told they have to know how to write, but it doesn’t sink in,” Hermen says. “It’s kind of like being told you have to eat your vegetables.”

Refocusing writing skills in all majors provides students with the context for learning a skill many say they do not use enough.

“In industry, students might be asked to research new technology and write specifications, requests for proposals and other documents,” Hermen says. “They’re being evaluated in their discipline and someone says, ‘I’m not good at that’—so they have to learn to write.”

And that if they can’t communicate their ideas effectively, that’s a problem.

Lisa Hermen, director of the Institute Writing Committee, shows students enrolled in Professor Stephen Zilora’s Technology Transfer class how to hone their writing skills. She and her colleague, Lisa Hermsen, director of the Institute Writing Committee, knows that the quality of a student’s writing ability may influence their career opportunities.

New graduates entering the workforce can expect to write communications that are often time sensitive. As an example, Hermen says, “Rarely does a day go by that you don’t have to write a memo or report by someone,” she says. “It’s all about communication.”

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Hermen hopes to recruit a wider circle of faculty next year who are willing to take the challenge to teach writing in a class like Technology Transfer. “Part of this involves bolstering faculty members’ confidence in their own ability to teach and critique student writing.”

“Considering all of the factors, improving the quality of student writing here will increase the institution’s standing,” she says. “And that if they can’t commucate their ideas effectively, that’s a problem.”

In his choosing, President Simone has asked the Academic Senate to consider creating a Presidential Award an annual tribute at RIT.

“The more effectively we are able to respond to the present and future challenges and stresses, the more effectively we are able to engage our students, the more effective we are as a community of learning,” she says.

This column presents opinions and ideas on issues relevant to higher education. To suggest an idea for the column, e-mail newsview@rit.edu.
RIT's 2007 United Way poster families

When you see the smiles on Brennan Coon and Angela Hauser’s faces, you’d be hard pressed to realize the health challenges they face. Coon was diagnosed with cerebral palsy as a baby; Hauser discovered she had health challenges they face. Coon’s kidney failure diagnosis was made when a nugging cold sent her to a Miami physician for a quick checkup in 1999—one week before moving to Rochester with her husband, Peter Hauser. “Lucky for me—the cold led to the discovery—because the toxins in my body were so high, it would have been fatal,” says Angela, a staff sign-language interpreter at RIT’s Golisano College. “I went on dialysis when I was pregnant, a preferential donor transplant from Peter, who works as a professor in the research department at NTID. He is deaf and white, and I am hearing and black, and two years post-surgery, we went through fertility to have a beautiful daughter, Nyia.”

The United Way-funded National Kidney Foundation provided continuous support—from medication and dialysis, to donor testing and the transplant. “They were such a blessing,” says Hauser. Marcia Fordley | mfordley@rit.edu

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March 8, 2007 | www.rit.edu/news/events

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Redevelopment

Hockey

Two participants observe an autonomous vehicle that they designed and built using LEGO Mindstorms transverse an obstacle course during Park and Ride: Amusement Park Ride Design, Feb. 10-11. They were among 55 sixth- and seventh-grade girls who participated in the annual pre-engineering program introducing them to engineering and programming concepts through hands-on activities that included designing and building an amusement-park-themed device. Participants also heard from Molly Kearns ’04 (B.S./M.S. industrial engineering), who works as an industrial engineer for Walt Disney World. Thirty-two RIT students assisted with activities, organized by WEHRIT, an organization within the Kate Gleason College of Engineering that sponsors programs for young women interested in engineering studies and careers.

Submitted by Dan Brevner

Public market

Bittnerman and Brandeke are hopeful that the market will reach out to RIT and partner with the students to bring some of their ideas to fruition. Many of the students agreed that the market faces a substantial problem due to a lack of control over the mix of pedestrian and vehicular traffic, which could potentially result in unsafe conditions. The students felt that environmental graphic design elements could be used to separate the two forms of traffic.

Therefore, Bittnerman encouraged the students to be creative and innovative—considering limited resources and existing constraints. Many of the students also adopted a phased plan, where pieces of their projects can be implemented over time, while addressing the most critical needs first.

“We want to see nonprofit and government folks in the community that we have some great students here with fantastic skills and we can help you to identify design issues and develop realistic design solutions,” Bittnerman says.

Marcia Fordley | mfordley@rit.edu

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