

SPRING 2015

EXCHANGE

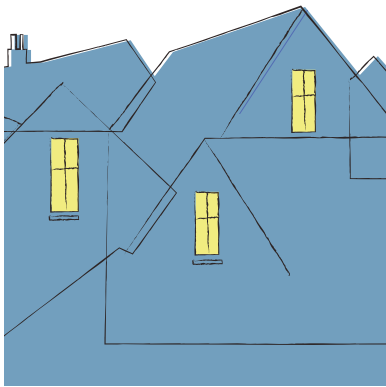


THE LANGUAGE OF BEES
The Evolution of Collective Decision-Making



UNC CHARLOTTE
College of Liberal Arts & Sciences

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The College of Liberal Arts & Sciences
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9201 University City Blvd.
Charlotte, N.C. 28223
clas.uncc.edu
exchange.uncc.edu (online magazine)

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We also welcome submissions of news to our online magazine, exchange.uncc.edu.

5,000 copies of this public document were printed at a cost of \$1.27 per piece, for a total cost of \$6,333.

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Dear Alumni & Friends,

Homo sum, humani nihil a me alienum puto. (“I am a human being, I consider nothing that is human alien to me.”)

— Terence

The conflict in the Middle East and the Ebola epidemic in West Africa both came home to the College of Liberal Arts & Sciences this past summer and fall.

One of our Levine Scholars, Kevin Caldwell, worked in June and July as a “staffer” at the University’s Mount Zion archaeological project in Jerusalem. When violence erupted, he decided to stay to complete his commitment to the project — a decision that was closely monitored by all of us here back in Charlotte. He returned safely to the U.S. at the end of July, happy to have completed his work but sobered by the hostilities he witnessed.

Ben Sanvee, a 2012 political science graduate and Liberian Senate candidate, came back to campus in early October, to talk with students and community members about the epidemic that was ravaging his country. As a new father, with family in Charlotte, he took all precautions to insure his own health and the health of those around him, but still was aware that the fear being caused by the epidemic put him in the American spotlight. His talk not only focused on the crisis in his country, but also on the sometimes conflicting democratic values of public health safety and civil liberties. We all were chastened by his somber accounts of the effects of Ebola on his countrymen.

So often in this letter I celebrate the intellectual excitement that characterizes the work of our faculty and students. These two harrowing experiences — both life-threatening in the extreme — remind us that the work we do in the college is anything but intangible and abstract: it is, rather, immediate, vital, and necessary. Imagination and empathy, in addition to intellectual acuity, are the marks of a liberal education. We want our students to develop emotional intelligence so that they can grasp, in a visceral and imaginative way, the different lives people lead and the exotic stories people tell. We want them to be able to look into another world and realize a reality unlike their own.

So, we work with our students to help them develop the habits of mind and the intellectual courage that will allow them to make a difference in their communities. Kevin and Ben are consummate exemplars of this so-important purpose in a liberal arts and sciences education.

In this issue of *Exchange*, either directly or indirectly, we see students and faculty making an imaginative leap out of their own worlds. Perhaps the stories do not evince the trauma of either Middle East unrest or an uncontrolled epidemic, but they ground us in the vital concerns of our culture: social justice questions, particularly in the areas of race (Sullivan), health (Quinlan), and disease (Scheid); the cultural issue of body image as it affects health (Webb); the interplay of the natural world and human culture (Schneider); and the disquieting practice of using law enforcement to commit suicide (Lord). With Stan Schneider’s research on the communication signals of honeybees, we gain revelatory narratives of collaboration and of conflict, suggestive of our human realm.

Terence’s famous words, which I use for my epigraph, can easily serve as the mission of any college of liberal arts and sciences, and I claim it here as the CLAS mission as well. The experiences of our students, Kevin and Ben, remind us that understanding what it means to be human is at the heart of our work. &



Nancy A. Gutierrez

DEAN NANCY A. GUTIERREZ
COLLEGE OF LIBERAL ARTS & SCIENCES

News Briefs



Meteorology students and faculty showcased their research in March at Charlotte WeatherFest at UNC Charlotte, with support from the local meteorological community.

“I firmly believe that every profession seeks people who are articulate and who can think on their feet. Ethics Bowl participation provides that, along with valuable experiences that bring out the best thinking and work habits in students.”

— Ethics Team Advisor Beth Mason

1

Science & Technology Expo Offers Activities For The Science-Curious

Each year, the science-curious of all ages turn out for the UNC Charlotte Science & Technology Expo. This year's expo on Sunday, April 26 from noon to 4 p.m. offers activities, including robotics, rocketry, virtual people, live animals, lab experiments, explosive chemistry, exotic plants, fire engines, race cars, boats and drones.

Students, faculty and staff from the College of Liberal Arts & Sciences contribute significantly to the expo with their time and expertise. The UNC Charlotte Observatory also offers a night of expertly-guided star-gazing, as it hosts its second annual N.C. Science Festival Star Party this year on Friday, April 24 at 8 p.m. Other activities each year include expert talks and films on timely science and technology topics. Learn more: ncsciencefestival.uncc.edu.



2

Ethics Team Takes Third In National Competition

A UNC Charlotte team won third place in the nation in the Intercollegiate Ethics Bowl Competition in February in a contest designed to consider complex, contemporary ethical issues. This is the highest a UNC Charlotte team has ever placed.

Teams from over 100 universities and colleges had competed in regional competitions earlier this year, and 32 regional finalist teams from those contests came together for the national event in Costa Mesa, California. UNC Charlotte's team consisted of Ashley Williams, Lloyd Wymore, Jerry Butler, Michael Haag, Carston Allen and Derek Creason.

The team used work from critical theorists to support solutions and arguments, in addition to pulling from community-based experiences.

“I firmly believe that every profession seeks people who are articulate and who can think on their feet,” said team advisor and philosophy instructor Beth Mason. “Ethics Bowl participation provides that, along with valuable experiences that bring out the best thinking and work habits in students. I'm proud to see these hard-chargers recognized for all their hard work and effort.”

3

UNC Charlotte Names Mickelson Chancellor's Professor

UNC Charlotte named Roslyn Arlin Mickelson the 2014 Chancellor's Professor in recognition of her outstanding scholarly achievement in a professional field, as well as demonstrated ability to excel in interdisciplinary research, teaching, and service. The University Professor is recommended to the Board of Trustees by the Chancellor and holds this title for life.

Mickelson's scholarship first gained national prominence in the late 1980s with a series of papers examining race and gender inequality in education. Her research on the effects of inter- and intra-school segregation and tracking constitute part of the canon of sociological research on the power and influences of educational opportunities. She has been at the forefront of scholarship addressing the resegregation of schools in cities across the American South, including Charlotte-Mecklenburg Schools, following the end of court-ordered desegregation in these communities.

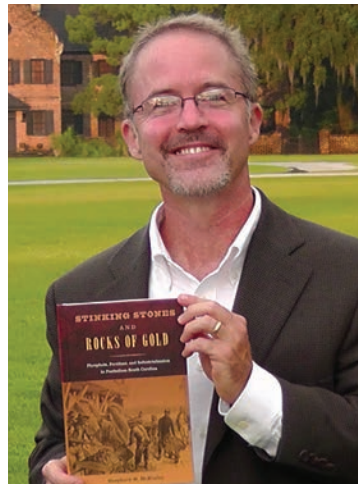


5

Historian Wins Top Prize For Book of S.C. History

UNC Charlotte historian Shepherd W. McKinley's book, *Stinking Stones and Rocks of Gold: Phosphate, Fertilizer, and Industrialization in Postbellum South Carolina* (University Press of Florida,) has been named the best book of South Carolina history published last year, as the winner of the South Carolina Historical Society's 2014 George C. Rogers Jr. Book Award.

The book is the first book written about how phosphate mining affected the South Carolina plantation economy. His research considered how the convergence of the phosphate and fertilizer industries held significant and long-lasting impacts for America and the American South. The book explores business, labor, social, and economic aspects, while also detailing the influence on a variety of people in the post-emancipation American South.



4

Sociologist Joins Select Researchers With National Cooley-Mead Award

In recognition of his distinguished research and dedication to others' scholarship over an almost 50-year career, UNC Charlotte sociology professor Murray Webster has received the national 2015 Cooley-Mead Award from the American Sociological Association's Social Psychology Section.

Webster joins a select group of researchers from institutions including Harvard University, Stanford University, Duke University, Columbia University, Johns Hopkins, University of California, Berkeley, and University of California, Los Angeles. The award recognizes lifetime contributions to distinguished scholarship in sociological social psychology.

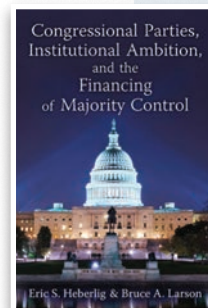
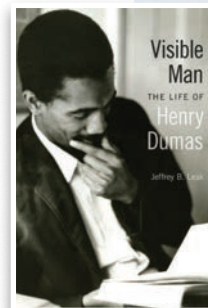
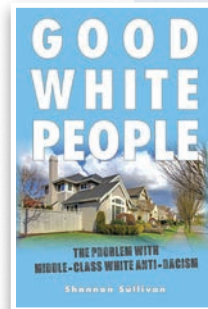


6

Discover The Stories Through Personally Speaking Series

The Mexican Revolution, white liberals and racism, African-American author Henry Dumas, and Congressional campaign financing will spark intriguing conversation during the 2015-2016 UNC Charlotte Personally Speaking author series.

Four UNC Charlotte researchers will talk about their books and how they came to write them. All talks will be at UNC Charlotte Center City. Learn more: clas.uncc.edu/ps. The talks are:



- **Jürgen Buchenau**, *Mexico's Once and Future Revolution: Social Upheaval and the Challenge of Rule since the Late Nineteenth Century*. Tuesday, September 1, 2015.

- **Shannon Sullivan**, *Good White People: The Problem with Middle-Class White Anti-Racism*. Tuesday, November 10, 2015.

- **Jeffrey B. Leak**, *Visible Man: The Life of Henry Dumas*. Tuesday, February 16, 2016.

- **Eric S. Heberlig**, *Congressional Parties, Institutional Ambition, and the Financing of Majority Control*. Tuesday, March 15, 2016.

Images: **Book covers used with permission. Mickelson: Wade Bruton. McKinley: Courtesy of McKinley. Others: Lynn Roberson**

THROUGH THE *EYES* OF YOUTH

Research Paper Earns Top National Spot

A research paper co-authored by UNC Charlotte student and faculty researchers has been named the most influential research related to health care disparities for 2014, according to the *Culture of Health* Reader Poll by the Robert Wood Johnson Foundation. The Foundation is considered the largest philanthropic effort devoted to public health.

“Por Nuestros Ojos: Understanding Social Determinants of Health through the Eyes of Youth,” published by The Johns Hopkins University Press, details the use of Photovoice in a research project considering elements that influence a neighborhood’s health. Project Muse also included the paper in its electronic journal collections.

Claire Schuch and Brisa Hernandez, who are pursuing doctoral degrees in geography and urban regional analysis at UNC Charlotte, are the lead authors. Other authors are Department of Geography and Earth Sciences faculty members Heather Smith, Ph.D., Janni Sorensen, Ph.D., and Owen Furuseth, Ph.D., along with Lacey Williams of the Latin American Coalition and Michael Dulin, MD and Ph.D., of the Department of Family Medicine at Carolinas HealthCare System.

For the inaugural Robert Wood Johnson Foundation poll, a panel of experts considered and chose research published in 2014 that highlighted the identification and elimination of disparities in health care. The foundation conducted an online poll asking *Culture of Health* readers to choose the most influential research effort from those identified. The readers ranked the UNC Charlotte study as the most influential in the nation.

The research team’s paper documents the use of Photovoice as part of a broader research study considering data and models used to address socio-spatial determinants of health in at-risk neighborhoods. The larger study seeks to develop novel and innovative approaches to reduce health disparities and improve access to – and use of – primary care and preventive services, particularly among Hispanic immigrants.

For the Photovoice part of the work, Hispanic youth who were part of the Latin American Coalition’s United 4 The Dream Program were paired with UNC Charlotte undergraduate students in a neighborhood planning seminar taught by Sorensen. They were asked to take pictures of aspects of their neighborhoods that they believe affect community health and to explain what they were portraying.

Negative factors included poor pedestrian access, trash and lack of property maintenance, water and air pollution, and evidence of gangs, criminal activity, and vagrancy, according to the paper. Positive features included public service infrastructure such as a fire station, schools and outdoor recreation.

The collaborative organization driving the work, the Mecklenburg Area Partnership for Primary Care Research, has involved researchers from Carolinas Healthcare System and from UNC Charlotte’s Department of Geography and Earth Sciences in the College of Liberal Arts & Sciences, the Metropolitan Studies and Extended Academic Programs unit and the College of Health and Human Services. Charlotte’s largest and oldest Hispanic service and advocacy organization, the Latin American Coalition, is a core collaborator through its United 4 The Dream Program. &

TRAVELING THE GLOBE

Sharing Research and Relevance

For more than two decades, David Goldfield, Robert Lee Bailey Professor of History at UNC Charlotte, has traveled the globe sharing his research and the relevance of the American experience.

He has recently traveled to Israel and the West Bank to talk with high school and college students, faculty, government officials, the media and community leaders about contemporary topics including the American election process, hate crimes, environmentalism and civil rights.

For Goldfield, this work is a way of sharing his research while also repaying a debt.

“Both sets of my grandparents arrived in the U.S. virtually penniless from Ukraine early in the twentieth century,” he said. “Had they not made that difficult journey, had they not had the courage and foresight to imagine a better life in the U.S., they most likely would not have survived, or would have lived under a dehumanizing regime. To honor them and the nation that made both their success and my existence possible, I engage in this work for the State Department.”

Goldfield draws from his research, which has resulted in 16 books on various aspects of Southern and American history, including two nominated for The Pulitzer Prize. His books include his best-selling *America Aflame: How the Civil War Created a Nation* and his book *Black, White, and Southern, and Still Fighting the Civil War*.

His journeys began in 1987 when the U.S. State Department reached out to the American Historical Association in search of an urban historian familiar with the rural-to-urban migration in the United States.

He had just published his book, *Cotton Fields and Skyscrapers*, detailing this process and its impact in the American South. The State Department asked him to offer a one-month course at Sichuan University in China. “The Chinese believed that they could learn from the American example,” he said.

Sichuan University became the first institution of higher education in China to offer an American Studies program. This success resulted in other opportunities with the State Department. In the early 1990s, German unification presented problems of adjustment and integration, especially for the former East Germany.

“The State Department wanted someone to talk about the U.S. experience with reconstruction and reconciliation after the American Civil War, another area of my expertise,” Goldfield said.

Goldfield has traveled to Germany on an almost annual basis ever since. In late November he participated in the U.S. Embassy’s “Going

Green” campaign, detailing the history of U.S. environmental policy. He talked with high school students and presented a seminar on environmental policy at the Bavarian Academy of Public Policy in Munich.

During his most recent trip to Israel and the West Bank in late October and early November, Goldfield spoke on U.S. midterm elections results and the implications for U.S. foreign policy.

“Given our Embassy’s commitment to outreach in the Palestinian territories, the State Department felt that I would be a good fit for this initiative, with my background in electoral politics, civil rights legislation – particularly since it was the 50th anniversary of the 1964 Civil Rights Act – and my work on Civil War and Reconstruction history,” he said.

While on this trip, he gave a lecture at Hind Al-Husseini Women’s College, East Jerusalem. He also gave talks to or spoke with Palestinian journalists; Israeli Arab student leaders at Sakhnin College for Teacher Education in Sakhnin, Israel; Bethlehem

Mayor Vera Baboun; Israeli policymakers and youth leaders dedicated to fostering Israeli-Palestinian dialogue; Gaza university students via video conference; high school students in Ramallah; and the Youth Presidents Foundation, which trains future Palestinian leaders.

“I believe that education is a much stronger ally of good than military force,” Goldfield said. “If we want to live in a safe and productive world, this is the better path to peace.” &

“I believe that education is a much stronger ally of good than military force. If we want to live in a safe and productive world, this is the better path to peace.”

Words: **Seth Allen** | Image: **Courtesy of David Goldfield**



Goldfield often speaks to students around the world.

GOOD WHITE PEOPLE

The Complexities of Race and Class

When UNC Charlotte researcher Shannon Sullivan mentions her critically acclaimed book, *Good White People: The Problem with Middle Class White Anti-Racism*, listeners at times look away or laugh awkwardly.

After all, she says, it simply is not done to speak openly about race and class and their complicated interplay. Yet, Sullivan has done just that in her new book, published by SUNY Press. Named a 2014 CHOICE Outstanding Academic Title, her work makes the case for a new approach to confront systemic racism and privilege.

“All of us, whatever our race is, in the United States, we can’t escape having to deal with white privilege. It’s affecting us in different ways, but it’s in our lives and influencing health, wealth, education, and all kinds of things.”

“The “good white person” is someone who knows what to say and what not to say,” Sullivan said. “There’s a great deal of avoiding the topic. You see a lot of that in raising white children. You’re supposed to be colorblind and

not talk about it. You teach your children not to talk about it, and that’s how they learn to be a good white person.”

Talking about race can seem to some people as jeopardizing class status, yet staying silent avoids the overarching issues, she said.

“It’s actually supporting racial injustice,” she said. “Supposedly it’s about fighting it, but it’s really about a kind of moral redemption, to be in the clear, rather than making changes in the world that actually would help eliminate racial injustice.”

Her research offers a theoretical, practical instrument for understanding and finding new ways to address white privilege.

“All of us, whatever our race is, in the United States, we can’t escape having to

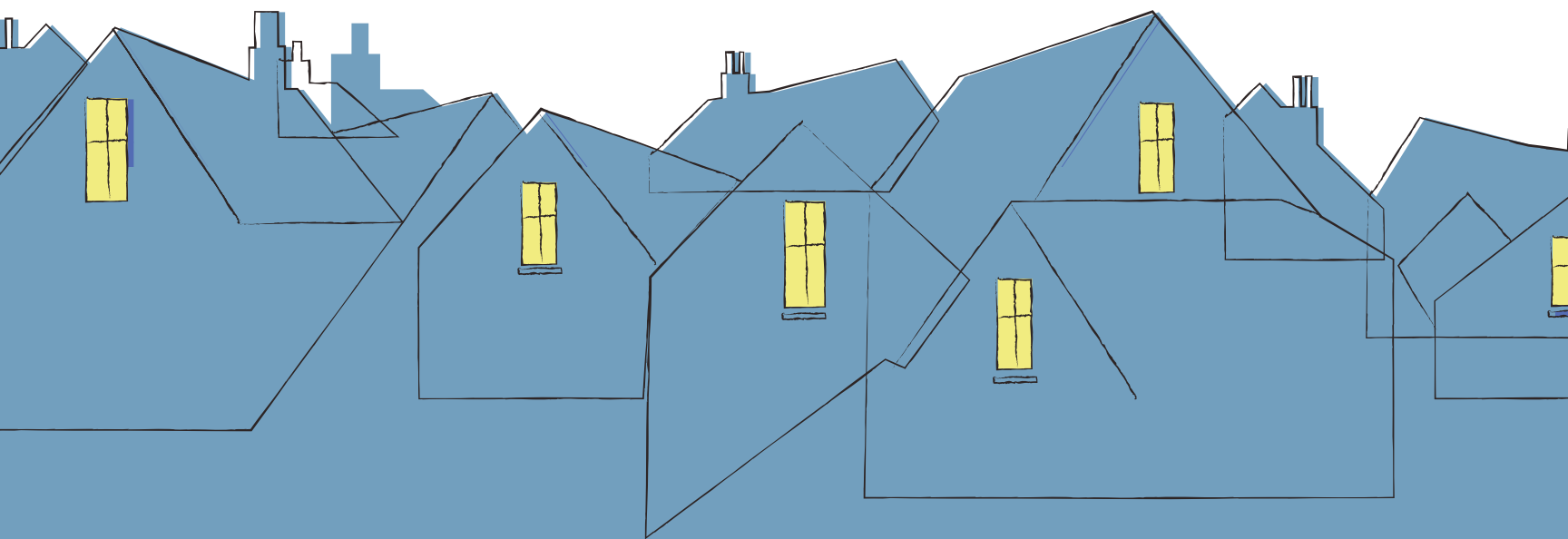
deal with white privilege,” Sullivan said.

“It’s affecting us in different ways, but it’s in our lives and influencing health, wealth, education, and all kinds of things.” While the book speaks to white privilege, its intended audience goes beyond that demographic.

The book outlines four ways that well-intentioned middle-class white people seek to establish their anti-racism, documenting how these can distance and distract people from addressing systemic problems.

One way middle-class white people approach the issue is through the denigration of lower-class white people as responsible for ongoing white racism, or what she terms “dumping” on them. The other three ways Sullivan explores are the demonization of antebellum slaveholders, an emphasis on colorblindness and the cultivation of attitudes of white guilt, shame, and betrayal.

“A great deal of what you see when you look at critical approaches to race and whiteness is that the dominant relationships to whiteness are guilt, shame and betrayal,” Sullivan said.



“In critical philosophy of race and critical theory more broadly, this is the notion of a race traitor,” she said. “If you’re a white person, you need to be a traitor to your race because your race stands for racial injustice or cruelty or white domination.”

Sullivan first began thinking about the book as the mother of daughters. She found herself thinking about gender issues, then considered her children within a racial context. In the book, she delves into her own past with candor and writes about how she has treated people in her life.

“A lot of my work starts this way,” she said. “I want an answer to a question I’m grappling with that I see going on in my life or the lives of people I know or society in general. So I read to get some answers. There’s help there, but I don’t feel like the question’s quite been answered.”

As she read the materials available, she was struck by the consistent theme that to be a “good white person” carried the burden of shame, guilt and betrayal.

“There must be a more positive affective relationship to oneself as a white person if

long-term positive affects in racial justice movements are going to be made,” she said. While the book began with her personal quest, her research links to the broader issue.

“The work I do always feels very personal to me, but I try to make sure that the question I’m hooking into is one with which the U.S. society is grappling,” she said. “In many ways I think the questions in my life are not unique.”

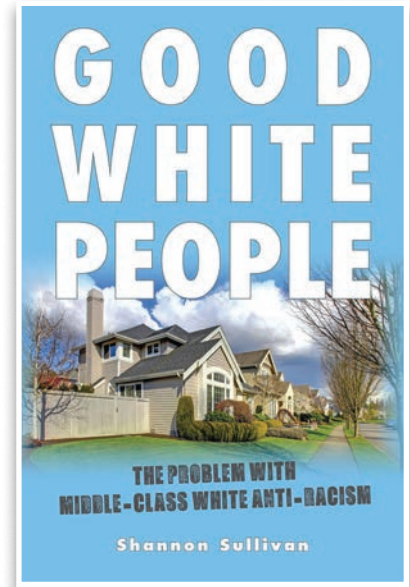
The research draws from a variety of disciplines when addressing the issues of guilt and shame. “There’s a great deal of empirical work from sociology, psychology and other fields talking about the harmful effects of guilt and shame,” she said.

Some have worried that Sullivan’s approach feeds into white supremacy arguments. Others, like CHOICE, have greeted the book as essential. “With its highly sophisticated method and edgy straight talk, this provocative little book is required reading for anyone who aspires to destabilize racist systems of undeserved power and privilege.”

Ms. Magazine has named the book to a list of “Must-Read Feminist Books of 2014,” and

said, “Like W.E.B. Du Bois and James Baldwin before her, Sullivan sees white domination as a spiritual problem that afflicts one group in particular but that touches us all.” &

Words: **Lynn Roberson**



Sullivan joined UNC Charlotte as chair and professor with the Department of Philosophy in the 2014-15 academic year. She teaches and writes in the intersections of feminist philosophy, critical philosophy of race, American pragmatism, and continental philosophy. She also wrote *Living Across and Through Skins: Transactional Bodies, Pragmatism and Feminism* (2001) and *Revealing Whiteness: The Unconscious Habits of Racial Privilege* (2006). She is the co-editor of several books including *Race and Epistemologies of Ignorance* (2007). Her book on *The Physiology of Sexist and Racist Oppression* is forthcoming in July 2015.





THE COURAGE OF CREATIVITY

Impact of Arts and Creativity on Healing

Children form a drumming circle around the musician, following on their own instruments the beat from his drum. Parents, nurses and doctors hover nearby, their worn expressions softened by the sight of this refuge from the somber world of the children's serious illnesses.

This is the scene at Chapel Hill, N.C. non-profit DooR to DooR. It is also a symbol of what drives UNC Charlotte researcher Margaret M. Quinlan and her colleagues at Ohio University. This team is researching the impact of the arts and creativity on healing and well-being in health-related contexts.

To share and translate their research for the public, they are creating a series of documentaries titled *The Courage of Creativity*. They have already won a regional EMMY® from the Ohio Valley Regional Chapter of the National Academy of Television Arts and Sciences on the strength of a promotional trailer. The first film in the series, *Beautiful Remedy*, was released in early 2015.

"This is my passion," Quinlan said. "Finding ways for people who are marginalized to find a voice is what I try to do in both my academic career and my personal life."

Quinlan, an associate professor in Communication Studies and core faculty with the Health Psychology doctoral program at UNC Charlotte, is an associate producer. Lead producers are Lynn Harter, professor, Scripps College of Communication, Ohio University; and Evan Shaw, chief videographer/editor, WOUB. Thomas Hodson, WOUB director and general manager, is an associate producer on the series. Kristen Okamoto, who earned her master's degree in communication studies from UNC Charlotte in spring 2013, is an assistant producer.

While Quinlan and Harter have published in academic journals their research on the connection between the arts and well-being, they acknowledge the difficulties of reaching a broader audience.

"With this series, people are going to have the opportunity to see the research that often gets lost in journals," Quinlan said. "My work is applied research, and I would not be able to do what I do if it weren't for these people who are willing to share their lives."

The three-part series will feature DooR to DooR, Arts in Medicine at MD Anderson Cancer Center in Texas and Collaborative Art International, based in Ohio. The researchers perceived that each of the three organizations

told a unique story that merited its own stand-alone feature film.

“Our goal is to illustrate how the making and viewing of art can help participants to be resilient in the midst of vulnerability,” Harter said. “Nearly half of healthcare institutions in the U.S. have integrated art programming in their practices. We hope to inspire the other half to begin including artists in their healthcare teams.”

DooR to DooR, operated by founder and coordinator Joy Javits, was established as a non-profit in 1993. Since then, the organization has grown and now brings over 250 artists each year into hospitals.

Prior to joining the faculty at UNC Charlotte, Quinlan completed field work with Harter in Athens, Ohio, bringing together people with developmental disabilities and professional artists. The research resulted in book chapters and journal articles. Since joining UNC Charlotte, Quinlan has continued to collaborate with Harter on research projects.

These experiences, along with her dissertation on Dancing Wheels, an integrated dance company for people with and without disabilities, have helped Quinlan recognize the benefits that the arts have when it comes to the care of patients. After UNC Charlotte Communication Studies colleague Dan Grano referred her to DooR to DooR, she spent three years traveling to Chapel Hill to volunteer and perform observations.

As an ethnographer, Quinlan collects data through observation, interviews, and analysis of organizational documents. When working with DooR to DooR, she pays close attention to interactions between artists, patients, staff and family members.

Quinlan developed four research questions to guide her study related to professional artists: How do performers describe their experiences with DooR to DooR? How do they find it valuable? In what ways can hospital-based art programs benefit people? Finally, what do nurses need to know about arts in the hospital to better serve their patients?

Working with then-UNC Charlotte nursing graduate student Caitlin Hurdle, she published results in the *Journal of Holistic Nursing* in June 2014. Their article, titled “A Transpersonal Approach to Care,” noted common and recurring responses that they used to identify emergent themes.

Quinlan and Hurdle found that hospital-based arts programs may improve patient outcomes by reducing pain and depression and by relieving stress among staff and family members. The research found an overarching theme of the arts being therapeutic for all involved, by facilitating healing and providing respite for patients, families and nurses.

The artists involved found that the arts touch the lives of patients, families, and nurses by breaking down personal walls, providing rest



With their regional EMMY. Evan Shaw (from left) Margaret Quinlan, Lynn Harter.

from emotional stress, bringing the familiar into the unknown, or allowing one to transcend suffering. Art creates a relaxed state in a patient’s mind that can change a mood and help reduce stress and pain, allowing the patient to heal more efficiently, the study suggested.

“Music is so powerful, especially if it is something that patients recognize,” said one blues singer working with DooR to DooR. “There is probably nothing there in the hospital they are familiar with. Music brings them some sense of normalcy, familiarity, and joy to a dismal place.”

The research also emphasizes the importance of art transforming the hospital environment. Quinlan and Hurdle found the arts act as a unifying force, humanizing nurses and encouraging social support among patients.

For founder Javits, also a public speaking coach and former theatre teacher, it makes sense that the arts bring benefits to the hospital setting.

“Fear makes you tight, makes you numb, makes you contract,” she said. “But when I bring musicians, dancers, or poets into the room, people connect to themselves and to their emotions, and are so much more alive.”

Plans are to distribute the documentary through PBS affiliates across the United States. Quinlan will show the first documentary, *Beautiful Remedy*, during Communication Studies Celebration Week on Thursday April 23 at 2 p.m. in McKnight Hall in The Cone University Center.

“It really is an honor to be able to work with these organizations and learn from them,” Quinlan said. “These organizations work on shoestring budgets, and what they are able to do with very little, to improve people’s lives, is incredible. It shows that we haven’t really tapped into all that art can do.” &



THE CENTER FOR FREEFORM OPTICS

Joining the Freeform Revolution

Drivers who vigilantly check their side mirrors still can miss life-threatening hazards, because of the mirrors' design limitations.

"The traditional shape for mirrors is like the traditional shape for lenses," said Angela Davies, who with Chris Evans co-directs the Center for Freeform Optics at UNC Charlotte. "The mirrors are spherical surfaces or spherical geometries. Freeform optics allows the designer to move away from that traditional shape and make the mirror any shape desired, to see a much richer field of view."

With the emergence of freeform optics, this kind of design constraint can be left in the rear view. The researchers, students and industry partners who are part of the Center share a vision for compact, affordable, high-performance optical systems that will permeate precision technologies.

"Optical systems have been constrained by symmetry about a central line for hundreds of years," said Glenn Boreman, chairman of the Department of Physics and Optical Science. "Most optical systems are rotationally symmetric around a center axis. With the freeform concept, we are no longer constrained by those sorts of fabrication outcomes. We can specify and then fabricate specific profiles in three-dimensional space that are not constrained by any kind of rotational symmetry – that are not constrained by any kind of symmetry at all."

The freeform revolution holds immense potential for transportation; lighting efficiency and effectiveness; the medical field; energy research with photovoltaics and laser beam transport; remote sensing with astronomical instrumentation; the semiconductor industry and many other fields.

The Center is the latest National Science Foundation-funded Industry/University Cooperative Research Center at the University.

It is an equal collaboration between the College of Liberal Arts & Sciences and the William States Lee College of Engineering. Nationally, the collaboration includes universities – UNC Charlotte and University of Rochester – government labs and industry.

This type of Center carries out industry-driven pre-competitive research in a specific technology area. The results lie at the interface between fundamental research and company-specific product development. Each industrial affiliate provides funds to support the research, including graduate students' work.

Industry affiliates for 2014-2015 are The Air Force Research Laboratory, ARRI, Ball Aerospace & Technologies Corp., Carl Zeiss

AG, OptiPro Systems, LLC, PerkinElmer, PolymerPlus LLC, Rochester Precision Optics, SCHOTT North America, Inc., and Zygo Corp.

The UNC Charlotte effort joins the disciplines of precision engineering and the optics community, with particular strength in fabrication of freeform surfaces.

"We have a very strong tradition in precision metrology," Evans said. "What we bring is a team of people from across the two colleges who care about measurement and who know about manufacturing, and we have design expertise."

The departments and centers involved at UNC Charlotte are Physics and Optical Science, Mechanical Engineering and Engineering Science, the Center for Optoelectronics and Optical Communications and the Center for Precision Metrology, which is a "graduated" NSF I/UCRC.

"Because of the experiences we have had through the Center for Precision Metrology, we also have a group of faculty who are knowledgeable in working with companies," Evans said. "We know what pre-competitive research looks like."

To help guide the work, the Center has developed a technology readiness and manufacturing readiness roadmap.

"We look at questions such as what is commercially possible to do," Davies said. "What equipment can you buy to make the kinds of things you want to make? What things can be done in a research lab that are not commercially accessible yet? Where are the holes in the technology infrastructure that are keeping people from designing and making these systems?"

Graduate students actively participate in the research, joining in meetings with industry partners, working on projects and publishing non-proprietary findings.

"The collaboration involves our graduate students in the conversation," Boreman said. "They have close contact with the industry representatives. It gives them real-world experience. It gives them exposure to the thinking processes that can be found in high-quality research endeavors in industry."

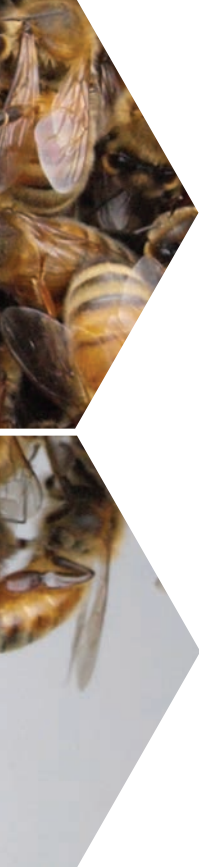
For these graduate students, the view ahead is clear. &

Words and Image: **Lynn Roberson**



THE LANGUAGE OF BEES

The Evolution of Collective Decision-Making



“In a university, teaching and research are inextricably interlinked. Lectures give people the background information necessary to train them to start applying it. Research training trains them to generate that knowledge themselves. The interaction of those two is what moves education forward and what moves human understanding forward.”

– Stan Schneider

Honeybee colonies continue to disappear because of a mysterious condition called Colony Collapse Disorder, which threatens pollination and influences the world’s food supply.

The decline has stimulated an enormous body of research to understand the reasons behind the decline of bee populations. UNC Charlotte’s Stan Schneider and colleagues are exploring how honeybees communicate, with potential implications for honeybee health.

“I’ve always been interested in the evolution of social behavior and how solitary animals have evolved to live in social groups and especially the very complex societies like honeybees and human societies,” said Schneider, a professor in the Department of Biological Sciences.

“Initially I was more focused on individual communication signals that were used to coordinate specific activities, and now I’m more interested in the global process of decision-making in insect colonies and how hundreds or thousands of individuals interact to generate a group level response that’s adaptive,” he said.

“In other words, I am looking at how a group makes a decision and how interactions among individuals generate this group-level decision in an adaptive manner. Of course, what natural selection will act upon is the consequence of those decisions. And so, selection is acting at the level of the colony, not just the level of the individual.”

His lab researches the communication signals that regulate and adjust colony activities in response to changing conditions. He explores something called the waggle dance to determine how it is used to regulate colony-level foraging activity and movement.

The lab also studies the role of the vibration signal in regulating cooperative activities within colonies. The research has determined that the signal functions as a type of modulatory communication signal that causes a non-specific increase in activity. It enhances many different behaviors, including foraging, brood care, food processing, nest maintenance, swarming and house hunting.

“It’s a way of fine-tuning responses,” Schneider said. “It helps to coordinate what many individuals are doing by up-regulating or down-regulating the likelihood that they’ll pay attention to other things in a similar manner. It’s like music. Music has a modulating influence on our behavior. We use music to set moods to change motivational state and also to coordinate activities.”



Schneider and colleagues published some of their latest findings in December in the journal *Animal Behavior*, in an article titled “The possible role of ritualized aggression in the vibration signal of the honeybee, *Apis mellifera*.” Other authors are R. Skaggs, J.C. Jackson and A.L. Toth.

“The complex social networks from which these group decisions emerge are based on communication,” Schneider said. “Something I’m very interested in is how did these communication signals evolve? It’s logical to assume communication signals in social species evolved from interactions in solitary ancestors; that those interactions laid the groundwork for the evolution of these complex communication signals we see today in highly social species.”

The research team looked at gene expression patterns associated with the performance of the communication signal called the vibration signal. “Honeybees use this signal to help coordinate many of the collective activities they engage in, including the raising of new queens and interacting with new queens,” Schneider said.

“We compared gene expression patterns from workers that are performing that vibration signal, for genes that are known to be associated with aggression in primitively social species,” he said. “The data suggest the vibration signal is a form of ritualized aggression and that this signal, which is now used in the context of cooperation, evolved from interactions that in the ancestors were aggressive.”

This suggests that these genes associated with aggression in ancestors in primitive species were co-opted in more advanced

cooperative societies. The process set in place the genetic underpinning for communication signals that now are associated with cooperation in the complex societies.

Schneider’s research holds significance in the quest to understand honeybee health.

“Central to honeybee health is the behavior and reproduction of the queen,” he said. “One thing I’ve become interested in, in the last decade or so, are worker-queen



Stan Schneider keeps calm in a swarm.

interactions and how these contribute to colony health by contributing to a healthy successful queen and thus a healthy, successful colony.”

One aspect of the research looks at how workers interact with virgin queens when colonies are raising replacement queens to see how workers influence the outcome of the queen replacement process and how they contribute to higher quality queens becoming the new queens of the colony.

“The more we understand about colony reproduction and the collective decision-making that governs reproductive output, the more we may be able to maintain colony health,” he said. “Related to that, we’ve also started looking at how workers interact with drones – the males – which has been largely ignored. Of course, the health and mating

status of males is the flip side of colony reproductive success and colony health.”

Through the decades of research in his lab, Schneider has engaged numerous undergraduate and graduate students in the work. He has seen many of them go on to become doctors, researchers, veterinarians and published authors.

In 2014, Schneider received the College of Liberal Arts & Sciences’ Award for the Integration of Undergraduate Teaching and Research. He has served as principal investigator or co-principal investigator on grants totaling \$1.3 million, including funding to support undergraduate research.

“I think it’s very important to take students through the entire process to completion, and completion is having the results published in a peer-reviewed journal,” he said. “They understand the importance of communicating your findings with the larger audience. That benefits them, and it benefits us and the university.”

Close to 60 percent of the Biological Sciences Honors students working with Schneider have published with him, some with multiple publications. Because of the finite time period during which undergraduates work with him, obtaining enough data to publish can at times prove difficult. This remains a goal for him, however.

“In a university, teaching and research are inextricably interlinked,” he said. “Lectures give people the background information necessary to train them to start applying it. Research training trains them to generate that knowledge themselves. So, you can’t separate the two. The interaction of those two is what moves education forward and what moves human understanding forward.” &

Words: **Lynn Roberson** | Images: **Courtesy of Stan Schneider**



STUNG by SCIENCE

Alumnus Becomes Veterinarian



As an undergraduate biology major, UNC Charlotte alumnus Andrew Pierce spent the hours just before dawn each day dabbing paint on honeybees' backs in professor Stan Schneider's biological sciences lab.

"We would collect the bees that emerged every day, and at 5 a.m. I would go in and paint the bees," Pierce said. "I would paint the bees a different color depending on what day they emerged. I spent a lot of mornings painting bees. On a really small scale, that's science."

By the time Pierce completed his biology degree with honors in 2007, he had co-authored an important academic paper in a major journal and set his course for N.C. State College of Veterinary Medicine. Now, as a veterinarian at East Lincoln Animal Hospital, he reflects on the grounding he gained in his humanities studies.

"It helped out a lot to be on the research side of things, to know all the tiny background work that goes into a research paper, and to understand the foresight that it took for Dr. Schneider to put this project together," Pierce said.

For the aspiring veterinarian, it was important that the research held broader implications in the study of animal behavior.

Honeybees may prove key to comprehending the dynamics of social animals such as man. The research was reported in the behavioral biology research journal *Ethology*. Pierce was the first author on the paper, which is a significant achievement for an undergraduate.

The lab's work confirmed the hypothesis that major colony activities are initiated by the collective actions of the colony's older workers. The researchers discovered that older workers send signals to the colony and the queen that it is time to leave the hive, giving the queen a signal to fly known as piping.

"Our paper began to open a door showing that, in fact, it was the older bees in the hive that were communicating with the queen more

than most people really ever had thought," Pierce said. "With the young bees, it's their job to take care of the queen, keep her clean and keep her fed. But we were able to see older bees coming in and communicating with the queen in one way or another."

Following graduation, Pierce's first applications to veterinarian school were unsuccessful. He turned to Elizabeth Hanie, UNC Charlotte's pre-health advisor, who advised him on how to strengthen his application. He volunteered at the Carolina Raptor Center, and he worked more hours at the East Lincoln Animal Hospital. Meanwhile, the academic paper was published. His second attempt to gain admission to veterinarian college proved successful.

In 2012, Pierce joined the animal hospital full-time. He plans to eventually purchase the hospital from its current owner, his uncle. He also has worked with Hanie to start an informal internship program, which has hosted several students. The internships help students gain a broader understanding of the science involved and the other knowledge needed in health careers. Pierce, for example, developed his communication skills through participation in roundtable discussions of research papers and through liberal arts courses, especially an ethics class.

"It helped my communication skills and helped me come out of my shell," he said. "I wanted to be the kid who sits in the back row but pays an incredible amount of attention and rarely asks for help, even if I needed it. Ethics helped me be more outspoken, and it really helped me change my world view in a lot of ways."

He draws upon all these lessons in his work.

"What I really enjoy the most about being a veterinarian is just talking to people and walking into an exam room with the pet and getting a feel for what that owner's goals are for the visit that day, as well as doing my best to achieve those goals," he said. &

Words: **Tyler Harris** | Image: **Lynn Roberson**

Andrew Pierce takes care of one of his patients.



BUTTERFLY HIGHWAY

Biodiversity Meets Social Justice



When people consider biodiversity, they often think of far-flung Amazon rainforests or vibrant coral reefs in tropical seas. While biodiversity ranks high on the global scale, it is also vital to the health of humans and the environment at the local level, something that UNC Charlotte doctoral student Angelique Hjarding conveyed to attendees at the Biodiversity Information Standards 2014 Conference in Jönköping, Sweden during a symposium on citizen science.

The workshop in late 2014 brought together biodiversity and biodiversity information scientists with citizen science project leaders, through funding from the National Science Foundation. Attendees reviewed case studies and proposed best practices based on science and informatics standards.

Hjarding, who is pursuing her doctorate in geography, presented on her examination of biodiversity data gaps in urban areas and her exploration of social justice issues resulting from those gaps.

She found inspiration at the conference in a conversation with a citizen scientist researcher, who described similarities between the challenges he faces in Botswana with biodiversity data gaps and conservation work to those Hjarding sees in disadvantaged communities in Charlotte. This experience, and others she had with citizen scientists from around the world, brought greater context to the importance of sharing data and connections.

"I began finding the challenges with doing conservation work in Charlotte as being very similar to the challenges doing the same work abroad," she said. "I previously did conservation work in Laos, and trying to get the villagers to buy into the conservation involving carnivores and large cats took some work. In Charlotte we're working in urban communities, but there's still the challenge of conveying the importance of biodiversity when food security is such a concern."

Her presentation addressed social and environmental equality issues she examines in her dissertation. Hjarding believes that underserved communities can benefit through community empowerment, sense of place and purpose, and connection to nature.

Hjarding highlighted that the lowest income areas have the highest burden of exposure to environmental pollutants. These underserved

communities can have inadequate food security and little access to nature, contributing to a social and environmental justice issue. She also found that research sampling efforts are reduced in areas with high minority and low income populations, leading to data gaps and sampling bias.

Scientists from around the globe who participated in the workshop in Sweden are seeking ways to effectively mobilize citizens to collect biodiversity data that they cannot gather alone. The researchers are sharing ideas on how to train, inform and engage volunteers, while also considering ways to ensure the data gathered is scientifically sound.

Hjarding practices what she promotes abroad back home in Charlotte, where she started the Butterfly Highway project. As part of her dissertation, she is working with Charlotte Action Research Project (CHARP) to transform gardens, green space and park fragments into new habitats for butterflies and other wild pollinator species.

This community-based project aims to create a Butterfly Highway in low-income urban residential areas as a low-cost way to increase biodiversity, by planting the food of native butterflies and other wild pollinators in new gardens. Volunteers include citizens of the participating neighborhoods: Enderly Park, University Park, Washington Heights, Graham Heights, and Northwood Estates.

Expected social outcomes from the project include neighborhood beautification, increased attachment to place and increased conservation knowledge. The National Fish and Wildlife Foundation and Bank of America have provided support for this initiative.

"Citizen science helps to break down the barrier between science and citizens," Hjarding said. "By working with these communities, I hope the experience acts as a gateway to a better understanding of biodiversity for these citizens."

By the time the project ends in September 2016, residents, experts and volunteers will have planted at least 10,000 native pollinator-friendly plants and mapped out butterflies within the neighborhoods. Hjarding will continue to raise awareness of the importance of biodiversity at campus and community events, focusing on the connection between social and environmental issues. &



Angelique Hjarding in the UNC Charlotte Botanical Gardens.

Words Well Written

College Authors Publish 32 Books in 2014

- *Materialities of Ritual in the Black Atlantic*, edited by Akinwumi Ogundiran of Africana Studies, and Paula Saunders. Indiana University Press.
- *Primates of Vietnam*, edited by Diane Brockman of Anthropology, and Tilo Nadler. Endangered Primate Rescue Center, Vietnam.
- *Native Plants of the Southeast: A Comprehensive Guide to the Best 460 Species for the Garden*, by Larry Mellichamp of Botanical Gardens, and photographed by Will Stuart. Timber Press.
- *Encyclopedia of Criminal Justice Ethics (Volumes 1 & 2)*, edited by Bruce A. Arrigo of Criminal Justice & Criminology. Sage Reference.
- *Emerging Trends in Drug Use and Distribution*, by John Stogner of Criminal Justice & Criminology, and David N. Khey and Bryan Lee Miller. Springer.
- *Moving Critical Literacies Forward: A New Look at Praxis Across Contexts*, edited by JuliAnna Avila of English, and Jessica Zacher Pandya. Routledge.
- *Real Talk: Reality Television and Discourse Analysis in Action*, edited by Pilar Garcés-Conejos Blitvich of English, and Nuria Lorenzo-Dus. Palgrave Macmillan.
- *Wynne's War*, by Aaron Gwyn of English. Houghton Mifflin Harcourt.
- *Discursive Ideologies: Reading Western Rhetoric*, by C. H. Knoblauch of English. Utah State University Press.
- *Visible Man: The Life of Henry Dumas*, by Jeffrey B. Leak of English. University of Georgia Press.
- *First-Year Composition: From Theory to Practice*, edited by Ronald F. Lunsford of English, and Deborah Coxwell-Teague. Parlor Press.
- *The Language of Adult Immigrants: Agency in the Making*, by Elizabeth R. Miller of English. Multilingual Matters.
- *By Avon River*, edited by Lara Vetter of English, and authored by H.D. University Press of Florida.
- *Producing Spoilers: Peacemaking and the Production of Enmity in a Secular Age*, by Joyce Dalsheim of Global, International & Area Studies. Oxford University Press.
- *To Plead Our Own Cause: African Americans in Massachusetts and the Making of the Antislavery Movement*, by Christopher Cameron of History. Kent State University Press.
- *Stinking Stones and Rocks of Gold: Phosphate, Fertilizer, and Industrialization in Postbellum South Carolina*, by Shepherd W. McKinley of History. University Press of Florida.
- *Recycling the Disabled: Army, Medicine, and Modernity in WWI Germany*, by Heather R. Pery of History. Manchester University Press.
- *Soldiering for Freedom: How the Union Army Recruited, Trained, and Deployed the U.S. Colored Troops*, by John David Smith of History, and Bob Luke. John Hopkins University Press.
- *We Ask Only for Even-Handed Justice: Black Voices from Reconstruction, 1865-1877*, by John David Smith of History. University of Massachusetts Press.
- *Éxito comercial: Prácticas administrativas y contextos culturales, Sixth Edition*, by Michael Scott Doyle of Languages & Culture Studies, and T. Bruce Fryer. Cengage Learning.
- *Más allá de las palabras: Intermediate Spanish, Third Edition*, by Concepción B. Godev of Languages & Culture Studies, and Mary Jane Kelley and Olga Gallego Smith. Wiley.
- *Colorín Colorado: Introducción a la Literatura Juvenil Hispana*, by Ann Gonzalez of Languages & Culture Studies. Panda Publications.
- *Five Days in One Week: Novels, Short Stories*, by Katerina Skorodinskaya of Languages & Culture Studies. Word (Tomsk, Russia).
- *Voyage de Campagne*, by Henriette-Julie de Castelnau, comtesse de Murat; critical edition by Allison Stedman of Languages & Culture Studies. Presses Universitaires de Rennes.
- *Identity, Political Freedom, and Collective Responsibility: The Pillars and Foundations of Global Ethics*, by Eddy M. Souffrant of Philosophy. Palgrave Macmillan.
- *Good White People: The Problem with Middle-Class White Anti-Racism*, by Shannon Sullivan of Philosophy. State University of New York Press.
- *The View from the Bench and Chambers: Examining Judicial Process and Decision Making on the U.S. Courts of Appeals*, by John Szmer of Political Science & Public Administration, and Jennifer Barnes Bowie & Donald R. Songer. University of Virginia Press.
- *Understanding Latin American Politics*, by Gregory Weeks of Political Science & Public Administration. Pearson.
- *South African Women Living with HIV: Global Lessons from Local Voices*, by Judy Aulette of Sociology, and Anna Aulette-Root & Floretta Boonzaier. Indiana University Press.
- *Middle Class Meltdown in America: Causes, Consequences, and Remedies, Second Edition*, by Scott T. Fitzgerald of Sociology, and Kevin T. Leicht. Routledge.
- *Comprehensive Care for HIV/AIDS: Community-Based Strategies*, by Teresa L. Scheid of Sociology. Routledge.
- *Laboratory Experiments in the Social Sciences, Second Edition*, edited by Murray Webster, Jr. of Sociology, and Jane Sell. Academic Press. &



ADVOCATES
for OUTCASTS



Comprehensive Care for HIV/AIDS

“I think the fact that I have a foot out there (in the community) makes me a much better educator. I can help the students gain more understanding, by introducing them to a world that is very far removed from the world that most of them know.”

– *Teresa Scheid*



Care for the 1.2 million people living with HIV/AIDS in the United States can prove fragmented, as agencies often work in isolation. A new book by researcher, educator and advocate Teresa L. Scheid serves as a roadmap for communities seeking a more unified approach.

Comprehensive Care for HIV/AIDS: Community-Based Strategies, published as part of the Routledge Series in Health and Social Welfare, draws upon Scheid's decades of working in the community. Her research occurs at the organizational level.

“The book looks at comprehensive care, or how we can integrate care for people

living with HIV/AIDS,” said Scheid, who is Professor of Sociology with appointments in Public Policy, Public Health and Health Services Research.

Comprehensive care includes physical health care, infectious disease management, crisis care, mental health care, substance abuse counseling, and social support services including housing, transportation, subsistence, and supports for dealing with multiple sources of stigma, Scheid indicated.

However, few service providers possess expertise in the converging issues of HIV/AIDS, poverty and mental illness, contributing to the fragmented care. Additionally, funding and advocacy most often focus on individuals rather than the systemic structures, she said.

This situation is different in Mecklenburg County, where Scheid has worked alongside people from the county health department, community based organizations and planning councils, as these organizations have sought to address the needs of people with HIV/AIDS. Her research highlights how community planning can lead to more comprehensive care and identifies factors that work against efforts to reform care systems.

“The information is based upon what we have done in the Charlotte-Mecklenburg community,” Scheid said. “It's not pie in the sky. The book will hopefully provide examples to other people who are wanting to know

more.” The book provides details of concrete steps that have worked in Mecklenburg County, including an adherence project and cross training.

“These are things that improved system of care at a small level without having to get a huge grant, completely change mental health system or hire a coordinator,” she said.

Meanwhile, the community-based research also adds relevance for the students in Scheid's classroom.

“Even if I'm not lecturing about HIV/AIDS, which I don't very often do, I think the fact that I have a foot out there makes me a much better educator,” she said. “I understand how the agencies work. I understand the kind of jobs many of the students will have. Describing to them the experience of illness is helpful. I can help the students gain more understanding, by introducing them to a world that is very far removed from the world that most of them know.”

Through the years, Scheid's involvement in the issue has evolved.

“My role has expanded a great deal over the years, from just being a researcher to also being an educator and now an advocate,” she said.

“The last chapter of the book talks about that, what it is to suddenly become an advocate. It goes back to this community-based research, which in part seeks to promote social justice.”

Community advocates speak about Scheid's influence on the issue and her commitment.

“I've been working with Dr. Scheid for 15 or more years on various HIV/AIDS initiatives and advisory groups,” said Deborah C. Warren, who is founder, president and CEO of RAIN, Inc. “She was instrumental in founding the Mecklenburg County HIV/AIDS Council and works tirelessly on many HIV initiatives.”

Scheid has demonstrated an unwavering commitment to the Council, said Terry Ellington, executive director of the Carolinas CARE Partnership. “She has the strong ability to contribute useful ideas with a positive impact on the work we conduct together in our fight against HIV/AIDS,” he said. &

CHANGING *of the* GUARD



STEVE FALCONER

Department Chair, Anthropology

Falconer holds a Ph.D. in Anthropology from the University of Arizona and most recently was head of the Department of Archaeology at Latrobe University in Australia. An archaeologist, he works in the eastern Mediterranean and adjacent areas of the Levant. He is interested in the development and decline of early cities, and the interrelationships of urban populations with environment and landscape.



KATIE HOGAN

Director, Women's & Gender Studies

Hogan earned her Ph.D. in English Literature from Rutgers University. She came to UNC Charlotte from Carlow University. Her research interests include queer ecologies/LGBT literature of environmental justice; critical university studies from a gender, race, class, and sexuality perspective; third wave feminism and girl studies; and gender, race, and AIDS culture.



STEPHANIE MOLLER

Department Chair, Sociology

Moller earned a Ph.D. in Sociology from UNC Chapel Hill in 2003. She is Professor and Chair with the Department of Sociology at UNC Charlotte. She conducts research on income inequality within the United States and cross-nationally and on mathematics achievement in primary and secondary schools, examining racial, ethnic and socio-economic gaps in achievement.



JOANNE MAGUIRE ROBINSON

Department Chair, Religious Studies

Robinson earned her Ph.D. from the University of Chicago. She joined the UNC Charlotte faculty in 1996 and now serves as Chair and Associate Professor with the Department of Religious Studies. Her research interests include the history of Christianity, medieval and reformation Christianity, the philosophy of religion, and religious experience.

Learn more about research areas of these and other faculty members: clasconnections.uncc.edu

New Chairs, Directors Join the College



RICHARD SANDERS
Commander, Aerospace Studies

Lt. Col. Sanders came to UNC Charlotte from the J-4 Logistics Directorate at HQ US Southern Command in Miami, Florida. He is the Liaison for Civil Air Patrol and the university scholarship program, the senior ranking active duty Air Force officer for the region, and an instructor and Department Chair of Aerospace Studies.



JULIAN MONTORO-RODRIGUEZ
Director, Gerontology

Montoro-Rodriguez comes from California State University, San Bernardino, where he taught as Professor of Sociology after earning a Ph.D. in Sociology from Case Western Reserve University. His research interests include the development of socio-cognitive community-based interventions to improve the quality of life of older adults and their families.



JARED SLOAN
Commander, Military Science

Lt. Col. Sloan graduated from the US Military Academy at West Point in 1996 and was commissioned as an aviation officer. He came to UNC Charlotte from Fort Leavenworth, where he was the Senior Aviation Observer Trainer for the Mission Command Training Program, and then the Secretary to the General Staff at the Combined Arms Center.



SHANNON SULLIVAN
Department Chair, Philosophy

Sullivan previously served as Head of the Philosophy Department and Professor of Philosophy, Women's Studies and African American Studies at Penn State University. She earned her Ph.D. in Philosophy from Vanderbilt University. She teaches and writes in the intersections of feminist philosophy, critical philosophy of race, American pragmatism, and continental philosophy.

Body Image ISSUES

Research Explores Impact of Caregivers' Messages

Body image concerns can plague college-aged women, contributing to eating disorders and other significant issues. As researchers worldwide seek to understand this phenomenon, a study published by UNC Charlotte psychology students Chesnee Daye and Nadia Jafari and psychology professor Jennifer Webb gives insight into the effect of early caregivers' messages on how young women perceive their bodies.

"There isn't a lot of literature trying to understand the developmental factors related to body objectification in young women, so this was one attempt at starting to scratch the surface," Webb said of the study, published in *Body Image* journal.

"This is especially the case as relates to the developmental factors that may affect how compassionate we are with ourselves in our approaches to eating and how we relate to our bodies," said Webb, who researches the positive psychology of eating, body image, and weight.

To explore these concepts, Webb and the students turned to data collected from a survey of 322 college undergraduate women ages 18-24.

"What we were considering was if self-compassion helped in relation to critical and restrictive eating messages received as a child, which may have contributed to body shame later on," said Daye, who since has completed her bachelor's degree.

The study primarily looked at eating messages received from early caregivers, such as parents, daycare providers or grandparents. Examples of these critical/restrictive messages could include 'Don't eat too much or you'll get fat,' or 'Eat everything on your plate.' The researchers studied the relationship between these messages and the way these women experience body objectification and how self-compassionate they are as young adults. The research also analyzed how often participants scrutinized themselves and worried that others were doing the same.

"We're a dieting society," Daye said. "We're constantly thinking about getting on or off diets, but I think we take those messages from the media, our family and peers, and we internalize them. We have



to learn how to separate the outside messages from our own personal values, our confidence, and how we can control our thoughts and perceptions about ourselves. Family messages about one's weight and eating patterns may replace your own perception and move towards looking at yourself from an outside view."

Conflicting messages have provided a point of observation and discussion in this research.

"We did demonstrate meaningful relationships between these caregiver messages and these components of body objectification," Webb said. "For example, how much do we worry about how our appearance looks to other people? How much are we experiencing shame because one's body does not meet up against certain cultural standards of beauty? How much do we feel we're supposed to be able to control our appearance?"

This is where the concept of self-compassion comes into play.

"Buddhism-inspired self-compassion encompasses the idea of valuing self-kindness over self-judgment," the researchers wrote in the paper. The study seeks to better understand if young women possess the coping skills to handle feelings that occur when dealing with negative thoughts and difficult emotions, such as shame.

Mainstream beliefs seem to constantly push the idea that "women have to look like Barbie," Daye said. This causes women to imagine improbable – or even impossible – images of how they should look.

"Something we don't emphasize enough is being kind to yourself and being more forgiving and less critical if your experience doesn't conform to what is considered the 'norm'," Daye said.

One aspect of the research assessed the participants' ability to do just that – be kind to themselves. The survey asked about body mass index and compared the responses with eating messages the subjects remember receiving from their early caregivers. The team considered this data with the participants' concept of self-compassion when monitoring how their bodies look and worrying how their bodies look to others.

"In our research, we're trying to apply self-compassion more in the context of how we relate to our bodies and how we relate to eating and weight," Webb said. "This particular study was one attempt at trying to better understand how remembering early life experiences surrounding eating and food from our primary caregivers could have actually engendered some memories related to having one's eating negatively evaluated. The study also considered how people begin to perceive the body as an object to be ashamed of, monitored and controlled."

While the survey was specifically targeted towards women, during the research process Daye realized that men are also affected by body objectification. "Guys are ignored a lot when talking about body image," Daye said.

Future research will take into consideration body image issues men face.

Webb said future research opportunities using experimental designs also will peer into early life experiences in relation to eating and food, and how self-compassion in the current moment could potentially be related to constructively managing the aversive emotions evoked by those past memories. They will explore how participants objectify their bodies in terms of body surveillance, body shame and appearance control.

This study focused primarily on college undergraduates because caregiver messages received from familial influences are still fresh on students' minds.

The researchers hope to set the foundation for a better understanding of how early caregivers might be socializing their children from a self-compassion perspective. Webb is teaming up with other faculty and a doctoral student to develop a "caregiver self-compassion messages scale," which will help researchers to better understand the memories of caregivers providing some messages of self-compassion growing up.

They also intend to research how early caregivers can become more educated about self-compassion as it relates to approaching eating and body image. Further research may lay the groundwork for intervention or prevention work with college women and men, as they adjust to college life and find more adaptive ways to cope.

Some of the things that they hope to understand better are who the "caregiver" is, and whether the messages differ based on the gender of the caregiver and in relation to the gender of the adult child.

There is also still much to learn about clarifying what type of food is being referred to, and also as it relates to some of the cultural differences related to race ethnicity. "We have a lot more to learn about cultural diversity and self-compassion," Webb said.

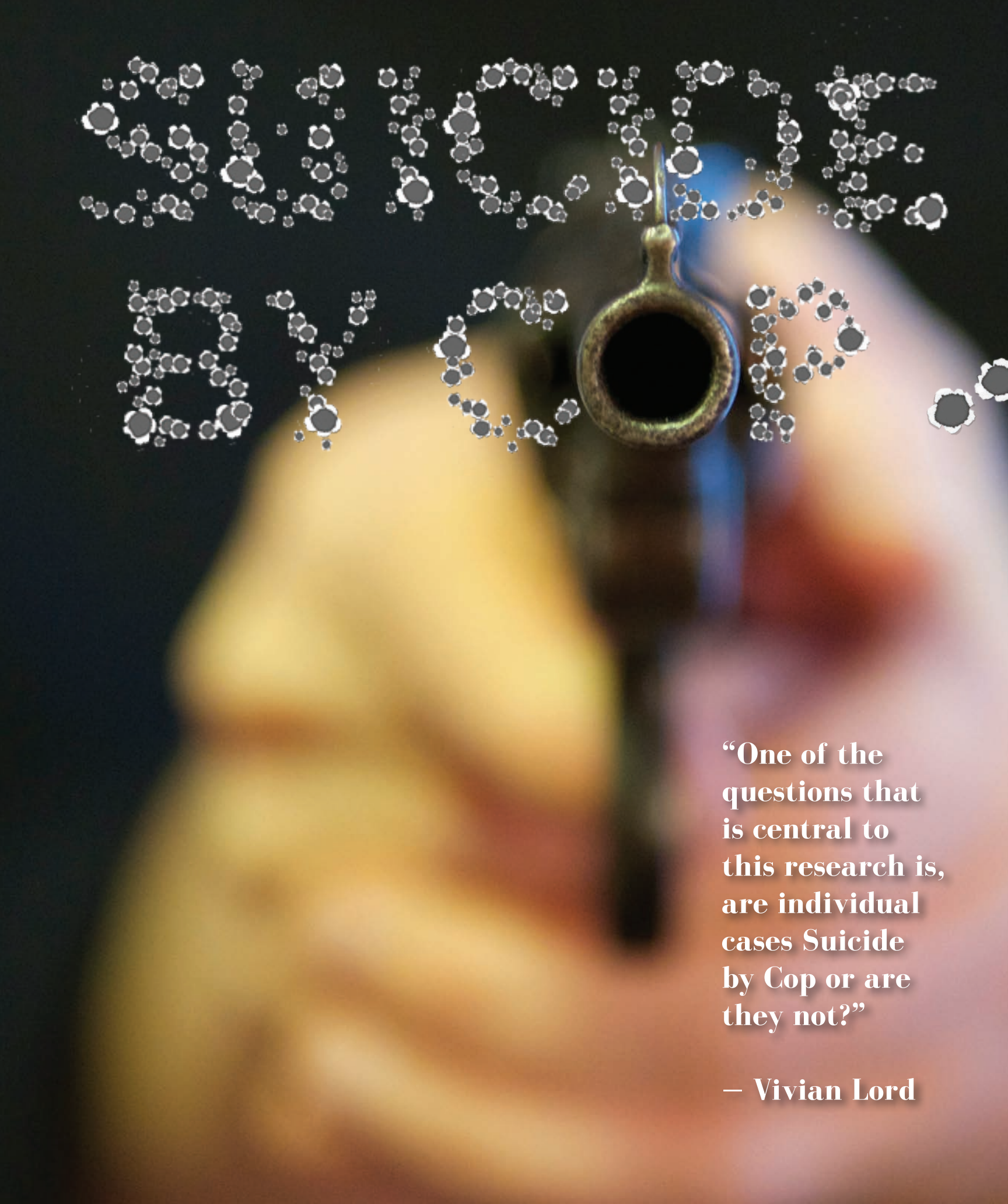
The researchers hope the study also can help break through people's feelings of being alone as they confront body image issues.

"Be more compassionate towards yourself, and that goes for anyone who may not even have an eating disorder or body dysmorphic disorder," Daye said. "We just have to be more kind to ourselves and not internalize those messages that we're supposed to be a size 4 with a certain shape, because that's unrealistic for everyone to live up to." &



Jennifer Webb and Chesnee Daye (l to r).

"In our research, we're trying to apply self-compassion more in the context of how we relate to our bodies and how we relate to eating and weight." – Jennifer Webb.



SUICIDE
BY COP

“One of the questions that is central to this research is, are individual cases Suicide by Cop or are they not?”

– Vivian Lord

RESEARCHER EXPANDS KNOWLEDGE OF CRITICAL ISSUE

Vivian Lord opened her mail one winter day 16 years ago and found a letter from an inmate describing his unsuccessful attempt to force police officers to shoot and kill him.

Media coverage of Lord's pioneering research — Suicide by Cop — had caught the inmate's attention. He told her about a life of drug abuse and self-destructive acts.

What Lord learned from him, and what she has uncovered in her subsequent years of research, has contributed significantly to the understanding of the phenomenon called SbC.

"There still exists just a small core of us who work in this area, but I think we've done a good job of posing some thoughtful questions and testing different models," said Lord, a licensed practicing psychologist and full-time professor in UNC Charlotte's Department of Criminal Justice and Criminology.

Lord's research has resulted in academic papers, expert witness consulting and testimony, and two books, including a second anthology published this spring by Looseleaf Law, *Suicide By Cop: A Comprehensive Examination of the Phenomenon and its Aftermath*.

"I think that anyone involved in law enforcement, particularly with internal affairs, with prosecution, or with defending officers either from criminal or civil charges, needs to be aware of the potential of what can happen in the use of force," said George Franks, who retired in 2014 as district court judge in Cumberland County and also is a

practicing psychologist and contributor to the book.

Another contributor, Tammy Hatley, drew on her experiences she has during her 30-year career at Charlotte-Mecklenburg Police Department, with 22 of those years as a SWAT negotiator and supervisor. Hatley earned her bachelor's degree in criminal justice and master's degree in liberal studies from UNC Charlotte and retired from CMPD in 2012.

"Suicide by Cop takes so many different forms," Hatley said. "It can be a person directly confronting police, saying, 'This is what I want you to do.' Or, it can be very discreet, and no one is able to recognize it until after the fact when the investigators are processing the scene and find a note."

Hatley sees particular importance for police training officers to understand the phenomenon so they can work with responding and supervising officers, 911 Center personnel and first responders such as emergency personnel.

Lord has analyzed reams of data from national databases that include hostage/barricade, suicide, kidnapping, and attempted suicide incidents. Lord also has interviewed dozens of officers and others involved in possible SbC scenarios

"One of the questions that is central to this research is, are individual cases Suicide by Cop or are they not?" Lord said. "Did the victims encounter the police as they are committing a criminal offense and they're just trying to get away, so they shoot at the police in order to get away? Or are they really trying to induce their deaths? And, if we assume by their behaviors that they are inducing the police to kill them, is it a rational thought or is it an irrational thought, and does that matter?"

Researchers D. Best, A. Quigley and A. Bailey developed a model that Lord has modified to consider such questions. The model takes into account primary indicators, including explicit communication of suicidal intentions, showing a weapon and deliberately engineering contact with the police.

Secondary indicators also are evaluated, including a history of suicide attempts and police contact through a criminal act or service of a warrant. Four state factors, such as evidence of irrational thought, and two discriminatory factors are considered as well.

The victims are usually dead so information about these indicators must be deduced from psychological autopsies.

After the first book came out, a detective in Miami called Lord and told her that the book had saved his life. The information in the book about Suicide by Cop and its impact on involved police officers helped the detective realize he was not alone. His story also is in Lord's second book.

For Lord, such stories are much more than simply fodder for her research and her writing. "I want to write something I feel is necessary," she said. &





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HONEYBEE

Flowers in the new Mellichamp Native Terrace in the UNC Charlotte Botanical Gardens attract a honeybee in the warmth of the late afternoon sun. The new garden blends native flora, sustainable practices and smart home landscape design. The terrace garden will showcase common home landscape features, a rain garden, native lawn and lawn substitutes and a mini-meadow planting. Learn more: gardens.uncc.edu.

Image: **Lynn Roberson**