



Thurston Today

THE NEWSLETTER *for the* THURSTON ARTHRITIS RESEARCH CENTER *and the*

Winter 2012

DIVISION of RHEUMATOLOGY, ALLERGY *and* IMMUNOLOGY *at the* UNC SCHOOL *of* MEDICINE

20 Years of Progress

For more than 20 years, the residents of Johnston County, NC have participated in and supported the *Johnston County Osteoarthritis Project*. On October 29, 2011, the Thurston Arthritis Research Center hosted an Appreciation BBQ in Smithfield, NC to let Johnston County residents know how their efforts and participation have benefitted others.

Through this study, we have found that 1 in 4 people will develop hip osteoarthritis in their lifetime, and 1 in 2 will develop knee osteoarthritis. At the BBQ, it was clear from the first speaker that these are not just numbers, but a reality for patients and their families. Hugh O'Neill, Chair of the Thurston Arthritis Research Center Board of Advisors, began by telling the story of his mother and how her long struggle with arthritis took the joy from her life. Today his wife, who also has arthritis, has an improved quality of life thanks to research studies just like this one. This theme was echoed by other speakers, in particular, Congressman Bob Etheridge and William L. Roper, MD, MPH, Dean of the UNC School of Medicine and CEO of UNC Healthcare. Both spoke of close family members with arthritis and their gratitude to the participants of this project who give their time and energy to help us learn more about arthritis and its causes and search for a cure.

The *Johnston County Osteoarthritis Project* is an epidemiologic study of osteoarthritis encompassing the

biomedical to the psychosocial, including imaging, genetics and biomarkers, disability, and racial/ethnic and gender disparities. It is a unique,

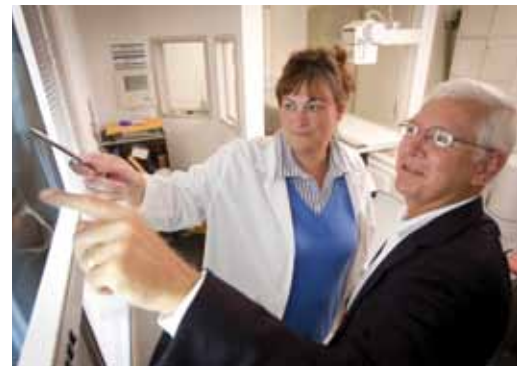
prospective, population-based study of knee, hip, hand and spine osteoarthritis and disability in African Americans and Caucasians, aged 45 years and older. This

project has been the source of over 30 supplementary and ancillary studies.

Prior to the *Johnston County Osteoarthritis Project*, no other study in the United States had examined urban/rural differences in medically defined arthritis, nor had specific rural areas been studied in detail.

Johnston County was chosen for the study for three reasons. First, because there was evidence that suggested arthritis and disability were more common in rural areas and perhaps in the South, but definitive studies had not been done. Second, the demographic and cultural characteristics of the county made it ideal to address the study questions. Finally, there was a long-standing co-operation between the University of North Carolina investigators and residents of the county in conducting community-based research.

After more than 20 years, the project has been successful in many ways. It has produced significant findings about osteoarthritis, its causes and progression. The project is beginning the next phase of data collection and analysis in 2012, expanding and refining the information we already know about osteoarthritis. With continued work and an ever broadening scope of data, researchers at Thurston and elsewhere are hoping to make an impact on our understanding of osteoarthritis, ways to prevent it and ways to treat it.



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Website<http://tarc.med.unc.edu>**Dear Friends,**

Once again, the Thurston Arthritis Research Center ended the year on a high note. In this issue of *Thurston Today* we feature several events, awards and publications that represent the work done by our dedicated faculty and staff.

In October, we hosted the *2nd Annual Jack Spiers Memorial Sporting Clays Competition: Taking Aim At Arthritis*, not only a great fundraiser, but a great day spent getting to know the people who

support us in so many ways. Over 60 sportsmen dedicated the day to having fun and supporting our research efforts.

We also celebrated the 20th Anniversary of the *Johnston County Osteoarthritis Project* with an Appreciation BBQ in Smithfield, NC. We wanted to show our participants, some of whom have been with us the entire 20 years, how important they are to the continuing success of the project. What better way to do this than with food, music and door prizes! Our distinguished speakers echoed this theme of gratitude and respect for the commitment of the participants, the community, the researchers and our funding agencies. Just prior to the event, we learned that the Centers for Disease Control and Prevention had once again extended the grant that is the major funding source for this project for another five years. In this issue, you will find an outline of some of the more significant results discovered during the course of our study.

Our faculty and researchers continue working on the very latest research in the areas of arthritis and autoimmune diseases. This year they were again invited to present their findings at two of the premiere national and international conferences. Also, Dr. Mary Anne Dooley published in the prestigious *New England Journal of Medicine* results from a pivotal clinical trial comparing two drugs used to treat kidney disease from systemic lupus erythematosus. This and other translational work conducted at Thurston help bring the discoveries from the laboratory to real-life applications in people.

We at Thurston wish you all the best in the coming year, and we hope you find our newsletter both informative and enjoyable. We welcome your comments and suggestions, directed to Coaina Nel at coaina@med.unc.edu.

Joanne M. Jordan, MD, MPH
Director, Thurston Arthritis Research Center

RECENT AWARDS

Joanne M. Jordan, MD, MPH has been awarded a \$3.25 million dollar grant from the Centers for Disease Control and Prevention to continue work on the Johnston County Osteoarthritis Project. This five year grant renewal will facilitate the 20 year follow up on this community-based study of osteoarthritis.

Amanda Nelson, MD, MSCR has recently received a five-year K23 grant from the National Institutes of Health/ National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIH/NIAMS). Dr. Nelson received a perfect score on her grant application titled "Variations in Hip Morphology: Frequency and Impact on Osteoarthritis Outcomes."

Taking Aim At Arthritis



The 2nd Annual Jack Spiers Memorial Sporting Clays Competition: Taking Aim At Arthritis was held on October 21, 2011 at the Fork Farm and Stable in Norwood, NC. The event brought together over 60 participants, guests and sponsors to support the work of the Thurston Arthritis Research Center. This year's event raised over \$37,000.



Thanks to the individuals and organizations who sponsored this year's event: The L. Jack and Ella Shaw Spiers Foundation, Amgen, Golden Corral, James W. Cogdell Heritage Foundation, Gaskin Asset Management, The Medical Foundation of NC, Richard Childress Racing and ECR Engines, Letty and Keith Stoneman, the Thurston Family and Tucker Administrators, Inc.



Welcome to our new Thurston Arthritis Research Center Board of Advisor member!



Cathy Ellington

Cathy Ellington joins the Thurston Board of Advisors and brings with her a special interest in the autoimmune disease, systemic lupus erythematosus (SLE). Ms. Ellington, along with her husband, Howard, are the honorary co-chairs of the 4th Annual Walk for Lupus Now to be held in Raleigh on April 22. Cathy and Howard can be seen discussing lupus at www.usinlupus.com.

The **Thurston Arthritis Research Center** hosted the *Johnston County Osteoarthritis Project 20th Anniversary BBQ* in Smithfield in October. Over 340 study participants, guests, speakers and volunteers attended.



Long-time supporters and collaborators, **Dr. Jordan B. Renner**, **Dr. Hugh O'Neill** and **Congressman Bob Etheridge** also spoke about the importance of the Johnston County Osteoarthritis Project.



Billy Allen & Friends, a local bluegrass/gospel band provided entertainment.



The food, catered by Holt Lake BBQ, was delicious and there was plenty of it.



Janice Woodard, Project Manager and **Dr. Joanne M. Jordan**, Principal Investigator for the project introduced the speakers.



Dr. William Roper, Dean of the UNC School of Medicine and CEO of UNC Healthcare spoke at the event.



Pastor Clarry Gathers of Total Praise Ministries led the guests in a blessing on the food, the crowd and the project.

Dr. Charles Helmick from the Centers for Disease Control and Prevention and **Dr. Ed Hartman**, the local physician advisor for the project, have been with the project since the very beginning over 20 years ago.



Dr. Michael Ward from the Johnston Animal Hospital in Smithfield was a major sponsor of the event.

The Johnston County Osteoarthritis Project: Exploring Answers to Important Question about OA

Who has osteoarthritis?

Many of us will develop osteoarthritis. *The Johnston County Osteoarthritis Project* is the first study to describe detailed risk estimates for knee osteoarthritis (OA) based upon age, sex, and ethnicity. This study confirmed that the risk for knee OA is associated with getting older and being female for both African Americans and Caucasians.

Lifetime risk is the probability of a person developing symptomatic OA in at least 1 joint by age 85.

- Symptomatic hip OA - one in four people may develop it in their lifetime
- Symptomatic knee OA - nearly 1 in 2 overall
 - more than 1 in 2 among those with history of a knee injury
 - nearly 2 in 3 for obese people

Why do we get osteoarthritis?

There are many factors that contribute to why we get OA, including aging and heredity, which we cannot change, but also some things we can change to decrease the risk.

- This study has confirmed that both body mass index (BMI) and weight are strongly associated with radiographic knee OA in women.
- Individuals with occupations that involve walking, lifting, standing, crawling and doing heavy work while standing were 30–60% more likely to have symptomatic knee OA. As the number of physically demanding tasks performed increased the odds of both symptomatic hip and knee OA increased significantly.
- Individuals with legs of different lengths have a higher incidence of progressive knee or hip radiographic OA and chronic joint symptoms.

How does osteoarthritis affect our daily lives?

Osteoarthritis causes pain and loss of function.

- This study found that both racial groups reported difficulty performing basic daily living tasks.
 - African Americans with a greater BMI reported more difficulty performing some tasks of transfer, mobility and basic activities of daily living.
 - Age and female gender were more often part of the risk factors for difficulty in Caucasians.
- This study also found that differences in pain and function may be explained by BMI and depressive symptoms. Differences in function between African Americans and Caucasians may be largely influenced by pain.
- Individuals with symptomatic hip or knee OA were 25% -35% more likely than people without OA to report having any sleep problems, insomnia or insufficient sleep.

What else have we learned about osteoarthritis?

There are currently no laboratory tests for OA. The project has been studying compounds in the blood and urine from breakdown of cartilage and inflammation in the joints to see if these could someday be used to diagnose OA, predict if it will get worse, and monitor response to therapy. We have found some evidence that environmental exposures can be associated with OA:

- Increasing lead levels in the blood were associated with more severe OA. This suggests that lead may be a potentially modifiable environmental risk factor for OA.
- Low levels of selenium were associated with worse OA.

Facts about the Johnston County Osteoarthritis Project

- The longest running epidemiologic study of OA in African American and Caucasian men and women in the world.
- The first and largest population-based study to describe OA biomarkers in the general population and African Americans in particular.
- Over the 20 years of the project, nearly 5000 Johnston County, NC residents have participated.
- The project has employed directly or indirectly over 220 Johnston County residents.
- More than 100 collaborators from the Thurston Arthritis Research Center, the University of North Carolina, universities from around the world, industry, government and private practices have participated in the project.
- Since 1990, the study has been continually funded by the Centers for Disease Control and Prevention (CDC). The National Institutes of Health (NIH) funded the project for 17 years.
- Other sources of funding have included the Arthritis Foundation, US Department of Health and Human Services, National Institutes of Health, American College of Rheumatology, The John Hartford Foundation, GlaxoSmithKline and Johnson & Johnson.



UNC Wellness Center's 6th Annual Health and Wellness Expo

On Saturday, October 22, 2011, the Thurston Arthritis Research Center participated in the UNC Wellness Center's 6th Annual Health and Wellness Expo. An estimated 200 visitors, including many members of the Wellness Center and their families, attended this informative and interactive event. We presented information on the most prevalent forms of arthritis, the importance of physical activity and the services of our specialists at the UNC Rheumatology and UNC Allergy and Immunology clinics.

Local vendors and representatives of several UNC Healthcare departments promoted information on health, wellness, and fitness for the entire family by providing educational materials and resources needed to keep fit and healthy.

Special appearances by the Durham Bulls mascot, Wool E. Bull and McGruff, the "Take a Bit Out of Crime" mascot of the Nation Crime Prevention Council, made their event lively and entertaining!

Recent Publications



Mary Anne Dooley, MD was the lead author of a paper published in the highly prestigious *New England Journal of Medicine* 2011 365(20):1886-95, showing that a newer medication, mycophenolate mofetil, was better than an older medicine, azathioprine, in keeping kidney disease in remission in people with **Systemic Lupus Erythematosus (SLE)**. Dr. Dooley was also involved in the studies that brought benlysta to the clinic this year, the first new medication approved for SLE in over 50 years.

■ Second Generation Automated Anti-CCP Test Better Predicts the Clinical Diagnosis of Rheumatoid Arthritis. Mohamed Elrefaei, Kristie Boose, Martha McGee, **Teresa K Tarrant**, Feng-Chang Lin, Jason P Fine and John L Schmitz, *Journal of Clinical Immunology* 2011 November 10 [Epub ahead of print]. Rheumatoid arthritis (RA) is one of the most common systemic autoimmune diseases. In this study, we assessed two new automated second generation tests to detect the presence of antibodies associated with RA. The results found that new tests are not only automated, but have a better positive predictive value for RA than the current manual methods.

■ Effect of a six-week walking program on work place activity limitations among adults with arthritis. **Nyrop KA, Charnock BL, Martin KR, Lias J, Altpeter M, Callahan**

LF, *Arthritis Care Res (Hoboken)* 2011 63(12):1773-6. This study provided encouraging evidence that Walk With Ease (WWE), a brief, low-cost and easy-to-do community-based walking program, may provide both immediate and sustained benefits for people with self-reported arthritis and workplace limitations.

■ Racial Differences in Knee Osteoarthritis Pain: Potential Contribution of Occupational and Household Tasks. Allen KD, Chen JC, **Callahan LF, Golightly YM**, Helmick CG, **Renner JB**, Schwartz TA, **Jordan JM**, *The Journal of Rheumatology* 2011 Dec 1. [Epub ahead of print]. The study supported the idea that occupation-related physical activities contribute to the racial differences in knee OA outcomes. Current performance of physically demanding occupational tasks was an important contributor to racial differences in pain severity.



Kirsten Nyrop, PhD presented one of many posters at the conference. Dr Nyrop's presentation was titled "How do self-directed participants use the Arthritis Foundation's Walk With Ease program?"

ACR/ARHP

The 75th Annual Scientific Meeting of the American College of Rheumatology/ Association of Rheumatology Health Professionals (ACR/ARHP) was held November 5-9, 2011 in Chicago. Researchers from the Thurston Arthritis Research Center presented results from their work in poster sessions and podium talks. Joanne Jordan, MD, MPH; Robert Roubey, MD; Amanda E. Nelson, MD, MSCR and Leigh F. Callahan, PhD all moderated scientific sessions. Thurston researchers presented 23 posters and talks over the four day meeting. On Monday, November 7, Thurston hosted a reception attended by friends of the Center, former colleagues, trainees and current researchers.

OARSI

Researchers from the Thurston Arthritis Research Center participated in the Osteoarthritis Research Society International (OARSI) World Congress on Osteoarthritis in San Diego, CA on September 15-18, 2011. More than 1,000 of the world's leading scientists, clinicians, clinical investigators, rheumatologists, orthopaedists, radiologists and others interested in osteoarthritis research attended to take advantage of this unique broad based global forum presented annually by OARSI. The OARSI World

Congress is the only meeting for clinicians, scientists and other healthcare professionals solely dedicated to the prevention and treatment of osteoarthritis.

Joanne M. Jordan, MD, MPH, is on the OARSI Board of Directors and chaired a session on OA Clinical Trials.

A number of posters and presentations were given by Amanda Nelson, MD, MSCR, Yvonne Golightly, PT, MS, PhD, Adam Goode, PhD, Robert DeVellis, PhD, Jordan Renner, MD, FACR and Joanne Jordan, MD, MPH.



NEW FACES *at the* Thurston Arthritis Research Center

Matthew J. Billard, PhD, is a postdoctoral research associate working with Dr. Teresa Tarrant. Dr. Billard completed a PhD in Immunology from the University of Texas, MD Anderson Cancer Center in 2008. Until recently, he was a postdoctoral associate at the Center for Computational Immunology at Duke University Medical Center.

Sandra Murray recently joined the Thurston Arthritis Research Center as our business accountant. She has been employed by UNC since 2005.



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Thurston Arthritis
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is a key part
of our success.

Without donations, we could not supply outstanding facilities for our young researchers as they get a foothold in their fields, or provide one of the best physician training programs in the nation in Rheumatology and in Allergy and Immunology, or support the research that makes a difference for our patients in this fight against arthritis and autoimmune conditions.

Quite simply, the continued support and generosity of our donors enable us to serve as the arthritis center for the people of North Carolina.

Join us, be a part of the team that is working diligently to prevent and even eradicate arthritis. Please give. Contact tarc.med.unc.edu or 866.UNC.TARC (866.862.8272).