Severe acne, or acne vulgaris, is a genetic disease that affects up to 50 million people in the United States, with a prevalence as high as 85 percent among teenagers. It is typically treated with isotretinoin (Accutane), a chemical that slows the production of natural substances in the skin that can cause pimples. Although it is usually effective, isotretinoin is associated with undesirable side effects like birth defects when taken by pregnant women, dry eyes and lips, clinical depression, and suicide.

“Given the frequency and severity of acne vulgaris, the toxicity of isotretinoin, and the demonstrated genetic associations found in certain forms of severe acne, it seems likely that we can identify genetic factors that could promote new and safer ways of treating this condition,” said Dongliang Ge, PhD, assistant research professor at the Duke Center for Human Genome Variation (CHGV) and principal investigator of the proposed research study on severe acne.

Dr. Ge and his team aim to identify genetic factors that predispose patients to developing acne vulgaris. The study will also seek to answer whether genetic factors can predict if an acne patient will respond favorably to isotretinoin and/or develop adverse side effects. Such information could guide dermatologists in their treatment decisions, noted Dr. Ge.

To achieve these goals, blood samples collected by the MURDOCK Study team will be analyzed and a three-page self-reported questionnaire will be used to gather information about patients’ acne diagnoses and treatments.¹

“We will use local dermatology practices as recruitment sites to facilitate the speedy enrollment of 250 patients with a reported current or prior diagnosis of severe acne and a history of oral Accutane treatment,” said Leah Boulter Bouk, the MURDOCK Study clinical research coordinator for this project. “Eligible participants would have been diagnosed with severe acne between the ages of 12 and 18, although they could have taken Accutane when they were older.”

The CHGV will extract and sequence DNA from blood samples of all 250 patients to better understand their genetic make-ups. The team will also examine the genomes of 100 patients with extremely severe acne to identify novel genes associated with rare and common disorders.
Representative sample of Kannapolis/ Cabarrus residents to be recruited for MURDOCK Study

The MURDOCK Study team will soon be enrolling a representative sample comprising approximately 15,000 residents of Kannapolis and Cabarrus County. A representative sample is a subset of the total population that accurately reflects the demographics and characteristics of that population. These volunteers will supplement the pool of participants who are already enrolled in the MURDOCK Study.

The goal is to represent all of the key demographic groups of the local population, including healthy residents and residents with major diseases. This recruitment strategy will allow for study findings to be generalized across several population groups.

“We look forward to working with the community in planning, preparing, and implementing recruitment of the representative sample,” said L. Kristin Newby, MD, co-principal investigator of the MURDOCK Study. “With the continuing enrollment of self-referred volunteers, the representative sample will provide a methodologic and scientific anchor for future research, and in so doing, will enhance the value of the MURDOCK Study.”

Dr. Sayanti Bhattacharya, a postdoctoral fellow at the Duke Global Health Institute and a Harvard-trained epidemiologist, has been hired to plan for and implement the recruitment plan.

Team of summer interns support MURDOCK Study efforts

The MURDOCK Study office is fortunate to have a team of capable summer interns working in a variety of capacities to support recruitment and enrollment efforts. Team members include:

- Catherine Skahen of Concord, junior at Clemson University
- Makeda Nantambu of Charlotte, graduate of South Carolina State University
- Patricia Reid of Salisbury, student at Rowan-Cabarrus Community College
- Ellen Emerson of Salisbury, graduate of UNC-Chapel Hill
- Brian Foley of Salisbury, graduate of UNC-Chapel Hill
- Justin Kinney of Kannapolis, graduate of Duke University
- Bryan Dobbs, high school senior at Cannon School
- Daniel Lee, high school senior at Cannon School
- Josue Rosales of Concord, student at Rowan-Cabarrus Community College
- Paul Byerly of Salisbury, graduate of UNC-Charlotte
- Anne Smith of Charlotte, graduate of UNC-Wilmington

Ms. Tracy Totten joined the MURDOCK Study team in 2009 as a summer intern while working towards a bachelor’s degree in biology and nutrition at North Carolina State University. After graduating in 2010, and with significant hands-on experience gained as an intern, she transitioned into a clinical staff specialist position in the Kannapolis office.

Ms. Totten’s role in the MURDOCK Study was multi-faceted—she educated, recruited, and enrolled study participants, and she worked in the lab processing biological samples. She contributed to community outreach efforts at many events and through the study’s website and social media outlets.

Ms. Totten noted why she has loved being part of the MURDOCK Study: “When I [hear] how people relate personally to what we are doing here… I know that my job is worthwhile,” she said. “To me, the MURDOCK Study is a sign of hope.”

Best wishes to Ms. Totten while she pursues a master of physician assistant degree at Wingate University. Her enthusiasm and creativity will be missed.

Importance of follow-up questionnaires

Please remember that participating in the MURDOCK Study requires you to complete the follow-up Participant Registry Questionnaire that is mailed to you each year. The purpose of this questionnaire is to capture information that may have changed since you first enrolled. When you receive your questionnaire, please take the time to complete and return it so that we can maintain your records.

New and improved MURDOCK Study website now live!

Visit the new and improved MURDOCK Study website at www.murdock-study.org.

The redesigned website contains information about the status of the MURDOCK Study, recruitment efforts, and research studies that are seeking volunteers.

Please email us at murdock-study@duke.edu with your suggestions about how to further improve the website.