chairs. "She is one of our young stars," says Tarek Shawki, AUC's dean of the School of Sciences and Engineering. The lawsuit, however, cast a shadow. Rumors that she had stolen grant money were rife, Siam says.

In November 2012, a court found in Siam's favor, stating that because MUST hadn't given her an employment contract, she was free to leave. MUST appealed and on 16 March, Cairo's Court of Appeal overturned the lower court's verdict, ruling that Siam had nevertheless broken "authentic academic values" in not fulfilling her research duties. The $14,000 in damages, the judgment states, is compensation for "the loss of hope to the university and society" and for "moral damage incurred [by] MUST."

"[The case] seems completely unreasonable to me," says Gregory Marczynski, a biochemist at McGill University in Montreal, Canada, and Siam's former graduate adviser, who describes her work as "cutting-edge" and "highly collaborative." Although the order to compensate MUST for missing out on the grant may be in the "realm of reason," adds Aly El Shalakany, a partner at the Shalakany Law Office in Cairo who is not involved in the case, "I don't think it's fair." No hearing date has been set yet for Siam's appeal.

MUST officials did not respond to questions from *Science*. In a statement to *Science*, Maged Said, a senior associate in the Tahoun Law Office, the Giza, Egypt–based firm representing MUST, repeated the initial claim that Siam had violated her obligations to the university by depriving it of the grant.

If the verdict is upheld, it would "seriously undermine researchers' willingness to file grants" if they were even considering a career move, says Lisa Rasmussen, a research ethicist at the University of North Carolina, Charlotte. If scientists are not free to leave a university, she says, they are merely "agents of their institutions, rather than independent scientists."

–JENNIFER CARPENTER

Jennifer Carpenter is a writer in Toronto, Canada.

CLIMATE CHANGE

No Stopping the Collapse of West Antarctic Ice Sheet

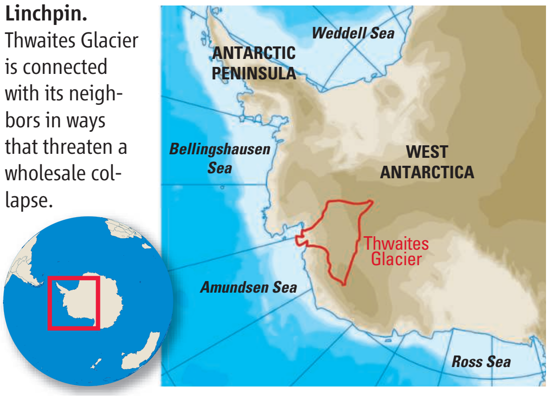
A disaster may be unfolding—in slow motion. Earlier this week, two teams of scientists reported that Thwaites Glacier, a keystone holding the massive West Antarctic Ice Sheet together, is starting to collapse. In the long run, they say, the entire ice sheet is doomed. Its meltwater would raise sea levels by more than 3 meters.

One team combined data on the recent retreat of the 182,000-square-kilometer Thwaites Glacier with a model of the glacier's dynamics to forecast its future. In a paper on page 735, they report that in as few as 2 centuries Thwaites Glacier's edge will recede past an underwater ridge now stalling its retreat. Their models suggest that the glacier will then cascade into rapid collapse. The second team, writing in *Geophysical Research Letters* (*GRL*), describes recent radar mapping of West Antarctica's glaciers and confirms that the 600-meter-deep ridge is the final obstacle before the bedrock underlying the glacier dips into a deep basin.

Because inland basins connect Thwaites Glacier to other major glaciers in the region, both research teams say its collapse would flood West Antarctica with seawater, prompting a near-complete loss of ice in the area over hundreds of years. "The next stable state for the West Antarctic Ice Sheet might be no ice sheet at all," says the *Science* paper's lead author, glaciologist Ian Joughin of the University of Washington (UW), Seattle.

"Very crudely, we are now committed to global sea level rise equivalent to a permanent Hurricane Sandy storm surge," says glaciologist Richard Alley of Pennsylvania State University, University Park, referring to the storm that ravaged the Caribbean and the U.S. East Coast in 2012. Alley was not involved in either study.

Where Thwaites Glacier meets the Amundsen Sea, deep warm water burrows under the ice sheet's base, forming an ice shelf from which icebergs break off. When melt and iceberg creation outpace fresh snowfall farther inland, the glacier shrinks. According to the radar mapping released this week in *GRL* from the European Remote Sensing satellite, from 1992 to 2011 Thwaites Glacier retreated 14 kilometers. "Nowhere else in Antarctica is changing this fast," says UW Seattle glaciologist Benjamin Smith, co-author of the *Science* paper.



Linchpin. Thwaites Glacier is connected with its neighbors in ways that threaten a wholesale collapse.

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To forecast Thwaites Glacier's fate, the team plugged satellite and aircraft radar maps of the glacier's ice and underlying bedrock into a computer model. In simulations that assumed various melting trends, the model accurately reproduced recent ice-loss measurements and churned out a disturbing result: In all but the most conservative melt scenarios, a glacial collapse has already started. In 200 to 500 years, once the glacier's "grounding line"—the point at which the ice begins to float—retreats past the ridge, the glacier's face will become taller and, like a tower of blocks, more prone to collapse. The retreat will then accelerate to more than 5 kilometers per year, the team says. "On a glacial timescale, 200 to 500 years is the blink of an eye," Joughin says.

And once Thwaites is gone, the rest of West Antarctica would be at risk.

Eric Rignot, a climate scientist at the University of California, Irvine, and the lead author of the *GRL* study, is skeptical of Joughin's timeline because the computer model used estimates of future melting rates instead of calculations based on physical processes such as changing sea temperatures. "These simulations ought to go to the next stage and include realistic ocean forcing," he says. If they do, he says, they might predict an even more rapid retreat.

Antarctic history confirms the danger, Alley says: Core samples drilled into the inland basins that connect Thwaites Glacier with its neighbors have revealed algae preserved beneath the ice sheet, a hint that seawater has filled the basins within the past 750,000 years. That past flooding shows that modest climate warming can cause the entire ice sheet to collapse, Alley says. "The possibility that we have already committed to 3 or more meters of sea level rise from West Antarctica will be disquieting to many people, even if the rise waits centuries before arriving."

–THOMAS SUMNER

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