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MCC Life Science Professor Publishes Ant Research

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August 29, 2018

MESA, Arizona – August 29, 2018 – Mesa Community College life science professor Nicola Plowes is co-author of a research article, *Mechanistic Models of Conflict between Ant Colonies and Their Consequences for Territory Scaling*, appearing in the August edition of *The American Naturalist*/University of Chicago Press Journals. The article describes a mathematical model of the behavior of the pavement ant *Tetramorium immigrans* during territorial battles, and the rules by which border conflicts are resolved. Plowes co-authored the article with mathematicians Fred Adler (University of Utah), his former undergraduate Sean Quinonez, and ant ecologist Eldridge Adams from the University of Connecticut.



The authors developed a series of mathematical models to study the dynamics of group conflicts in social insects, leading to a framework for the broader question of how resources get divided up among competitors, and how inequality itself can arise and increase.

“It’s fascinating how these self-organizing processes occur, as the rules that arise may apply to other systems,” Plowes said. “The concept of two groups in time and space applies, for example, to the input and output of data to an internet service provider (ISP) or to the relationships between immune cells and cancer cells in the human body.”

MCC students benefit from the research in two ways: it establishes that some community college professors teach and do research at the same time, and it encourages students to trust the college system when they are required to complete general education courses.

“Being able to demonstrate that we participate in peer-reviewed scientific research disproves the old adage that teachers teach because they can’t do,” Plowes said. “It’s important that students know that many faculty perform research and are active in their fields.

“Additionally, when you are an undergraduate, you sometimes wonder why you need something that doesn’t apply to your specific major. But later in life, you might find that you need, for example, calculus, which we used in this article. A well-rounded person needs a range of skills, and we construct our general education program around providing these tools.”

An abstract of the article appears here: <https://www.journals.uchicago.edu/doi/full/10.1086/698121> (<https://www.journals.uchicago.edu/doi/full/10.1086/698121>).

For more information on Life Science at MCC, visit <https://www.mesacc.edu/departments/life-science> (<https://www.mesacc.edu/departments/life-science>).

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Note for journalists: The article can be found on ResearchGate, a networking site for researchers, particularly those engaged in broadly scientific research. ResearchGate is free to join.

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Mesa Community College is nationally recognized for service-learning, career and technical programs, civic engagement and innovative approaches to higher education. The college serves as a resource for career readiness, transfer education, workforce development and lifelong learning. Host to more than 30,000

students annually, MCC offers more than 150 degree and certificate programs at its two campuses and additional locations. MCC is an emerging Hispanic Serving Institution with a diverse student body that enriches the learning experience. Renowned faculty are dedicated to student success, providing the education and training that empowers MCC students to compete locally and nationally. MCC, located in the East Valley of Phoenix, Arizona, is one of 10 colleges comprising the Maricopa County Community College District. For additional information visit mesacc.edu.

Mesa Community College is accredited by the Higher Learning Commission (HLC) of the North Central Association (NCA) <http://www.ncahlc.org> (<http://www.ncahlc.org/>).

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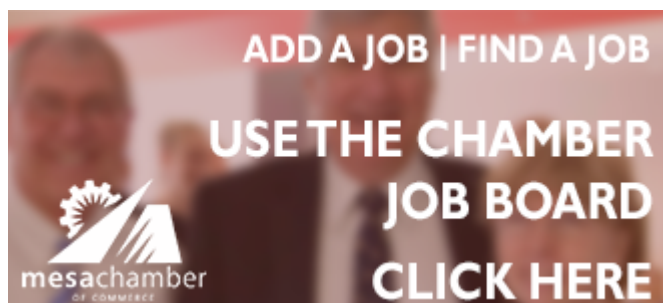
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Mesa Morning Live



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