Research LAUNCHER Program

About You

First Name: Christopher Last name: Smith

Company/University: Auburn University

Check which apply to you: ■ Student ☐ Non Student ☐ Independent Researcher ☐ Professor ☐ Corporate Research ☐ Other

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Short Bio: (250 words or less)

My name is Christopher Smith. I'm a graduate student at Auburn University currently researching encrusting foraminifera in the Caribbean. I'm originally from the state of North Carolina, where I attended the University of North Carolina at Chapel Hill during my undergraduate years. I've had a lifelong fascination with paleontology that began with a childhood fondness for dinosaurs. That's not uncommon for children. However, I believe most children grow out of this phase whereas I certainly did not. Upon graduation from UNC-Chapel Hill, I became employed by Duke University, working in their Library Services. After working for Duke University for two years, I enrolled at Auburn University for graduate study. Under the supervision of Dr. Ronald Lewis, I began actualistic research on encrusting foraminifera in the Caribbean. My current research involves the ecologic succession and possible zonation of encrusting foraminifera based upon various environmental factors.

1. Name of project

Distribution and succession of encrusting foraminifera at Cat Island, Bahamas: Implications for foraminiferal assemblages in the geologic record

2. Brief synopsis/areas of geosciences or engineering (50-75 words)

This project involves research of the distribution and ecological succession of modern encrusting foraminifera in order to obtain an actualistic model to better understand ancient encrusting foraminifera. There are implications not only for paleontology, but for sequence stratigraphy and paleoenvironmental analysis as well. A better understanding of ancient encrusting foraminifera would be a substantial aid in the search for natural resources in carbonate formations.

3. Bullet list of 5-7 main outcomes/goals.

The objectives of the proposed research are:

(1) to attempt to determine the distribution of encrusting foraminifera at Cat Island, Bahamas, through analysis of cobbles collected from each of the locations selected along the onshore-to-offshore transition.

(2) to discover any patterns in distribution that help to identify the environments present.

(3) to compare these findings with previous research done on the surrounding islands in the Bahaman chain in order to find large-scale distribution patterns in the region.

(4) to establish criteria for identifying distance from shore and water depth in the geologic record using foraminifera distribution.

(5) to explore the ecological succession of encrusting foraminifera in the region.

4. In two or three sentences, describe why your research is important. Please mention who will benefit from your work.

A better understanding of encrusting foraminifera distribution could lead to improved ecological research by establishing a baseline for future studies. Through this, we hope to obtain a better understanding of ancient ecosystems which will aid in paleoenvironmental analysis of carbonate formations in the geologic record. If encrusting foraminifera can be used to reconstruct paleoenvironments more accurately, this will have far-reaching implications for facies analysis of shallow-water carbonate successions.

5. Timeline with milestones (12 month/18 month)

At this point in the process, one trip to Cat Island has already been completed with approximately 50 samples collected from 7 sites on Cat Island. Currently, analysis is underway on the make-up of encrusting foraminifera on each sample. However, further samples from additional sites are needed, requiring an additional trip to Cat Island in November. The timeline from this point onward reads as follows:

- Preliminary analysis and data collection (March - June 2014)
- Second round of field work on Cat Island (November 2014)
- Creation of thin sections (June 2014 – December 2014)
- Final preparation and analysis of samples and data; Preparation of poster for national GSA meeting (June 2014 - December 2014)
- Thesis writing (December 2014 - April 2015)
- Thesis defense (May 2015)

6. Funding amount needed to achieve first basic goals within 12 months. Please provide a brief summary overview of your budget. List costs of 5-10 main items.

Airfare to field location (2 people) - $1,113.00

On site vehicle rental (7 days) - $560.00

Food costs - $280.00

On site shelter (7 nights) – $1,120.00

Thin section costs ($15.00 a slide for 5 samples from each of 12 sites (7 currently, plus 5 additional) – $900.00

TOTAL: $3,973.

7. In the process of gaining background knowledge in the field of your proposed research, who did you find to be the top two or three researchers? What are the main concepts that are being explored? Please briefly describe.

When it comes to the distribution of encrusting foraminifera, the most important researcher in my background research was Martindale, whose 1992 research on encruster distribution is mentioned in nearly every paper imaginable on encrusting foraminifera. Martindale was one of the first researchers to explore the possible zonation patterns in offshore encrusting foraminifera distribution. Gischler and Choi were the most important researchers when it came to ecological succession of encrusting foraminifera. Their research in the 1980s was one of the first explorations of the subject, with Choi in particular pioneering the sectioning of coral cobbles to better understand foraminfera succession.

8. Please provide a photo of yourself and a photo related to your proposed project. It will be very helpful in publicizing your project and potentially securing funding.

9. Who will benefit?

A better understanding of encrusting foraminifera will provide a valuable tool for paleoenvironmental analysis and other future research practices with important implications for the continuing search for valuable natural resources. _____

AAPG Research LAUNCHER supporters receive

The opportunity to work directly with you and receive reports, information, and findings, depending on the level of support.

The Deal

The researcher agrees to:

- Develop a brief public presentation on the research to be made available to AAPG
- Share an annotated bibliography and review of relevant published articles
- Present research findings on project at an AAPG Forum, GTW, or Research Symposium
- Write a detailed report on the results of your research to be made available to LAUNCHER supporters
- Write a extended abstract on the results of your research to be made available to AAPG

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Thank you for submitting your research proposal to the AAPG Research LAUNCHER Program. Your proposal will be reviewed and upon acceptance you will be contacted by AAPG Education/Research. If your proposal is accepted, we will publicize your proposal and encourage funders to contact you directly. AAPG does not guarantee funds nor have any connection with the success or failure of the endeavor. The goal is to support scientific research in the petroleum geosciences and engineering and launch the next generation of geological advances.

___Christopher Smith_____	___June 30, 2014_____	_____	_____
Research Candidate (print)	Date	AAPG Education/Research (print)	Date
_____	_____	_____	_____
Research Candidate (sign)	Date	AAPG Education/Research (sign)	Date

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