

SEEDS “YOU CHOOSE” AWARD APPLICATION

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ABSTRACT

I would like to organize a one-day communications workshop at RSMAS to teach ocean scientists effective methods for communicating their research to policymakers, the public and the media. The workshop would be led by COMPASS (the Communications Partnership for Science and the Sea) and would be open to faculty, research staff and graduate students. I believe this experience, which will be customized to our particular communications needs, will help a large number of RSMAS scientists, especially women scientists and other groups typically under-represented in the media, in meeting their career goals and enhancing their career satisfaction.

GOALS

Scientists can be powerful communicators of their work, but their formal scientific training rarely focuses on how to effectively convey research findings to journalists, policy makers, or other public audiences. Moreover, academic culture often inhibits effective communication to these audiences because of perceived fears over how peers will view this form of activity.

I propose to organize a one-day communications workshop at RSMAS for faculty, research staff and graduate students led by COMPASS (the Communications Partnership for Science and the Sea). COMPASS works to ensure science is effectively communicated to policymakers, the public and the media by providing ocean scientists with the communications tools and platforms needed to ensure their science is shared in a credible and neutral manner.

COMPASS is a leading leader in this field and has led similar communications workshops for faculty, graduate students and undergraduate students at Stanford University, Scripps Institution of Oceanography, Duke University, Yale University, Princeton University and the University of British Columbia. In addition, COMPASS has also worked with the Aldo Leopold Leadership Program, the Pew Fellow Program in Marine Conservation and the Smithsonian Tropical Research Institute on similar projects. I believe the University of Miami, and RSMAS in particular, would benefit significantly from participation in a similar program.

The goals of this SEEDS “You Choose” project are fourfold:

1. To teach ocean scientists at RSMAS how to communicate their work in a clear, lively manner that will resonate with audiences outside of their fields.
2. To create a supportive atmosphere that encourages RSMAS scientists to seek opportunities to communicate their research to public audiences. I believe that this will benefit the School and the University by making our scientists, and the work that they do, more visible to the world at large.
3. To prepare our graduate students for a scientific arena that is increasingly communications-savvy and to help them be more marketable after graduation.
4. To establish links between RSMAS scientists and journalists (both local and national, and in television and print) that will be useful in putting the workshop’s techniques into practice.

COMPASS will customize the workshops to the needs and interests of RSMAS scientists (which I will determine beforehand as part of workshop planning). Preliminary discussions (with Nancy Baron at COMPASS) suggest that we will probably begin with a morning auditorium session (large group format), and then break out in the afternoon with individual volunteers used as examples to practice and illustrate different situations.

COMPASS will bring its staff from California and/or Washington, DC and also organize the participation and travel for a number of local and national journalists to present panel-style discussions and also participate in the volunteer practice sessions. COMPASS has significantly reduced their usual fee to hold this workshop.

I have participated personally in similar COMPASS workshops and highly recommend them to scientists at all levels.

RELATIONSHIP OF PROJECT TO CAREER AND SCHOLARLY GOALS

Funding agencies are increasingly asking scientists in all fields to justify and explain the “broader impacts” of their research. For example, NSF now requires all proposals to specifically discuss Broader Impacts as one of two principal review criteria (the other being “Intellectual Merit”). Proposals are reviewed, ranked and awarded accordingly. One aspect of “Broader impacts” for which scientists are rarely formally trained is the communication of their research to wider public audiences.

Communication of scientific research is not simply a matter of entertaining the public; it is fundamentally a question of scientific literacy. This is of great contemporary importance because public understanding of science is at an all-time low, while the impact of science on everyday life is at an all-time high. Moreover, the environment and climate change are becoming increasingly urgent issues, and I believe scientists have a responsibility to assist with the communication of these threats to public and policy audiences. This is particularly true for ocean scientists, where the role of ocean in moderating climate, and the threats facing ocean ecosystems, are often “out of sight and out of mind”.

At the same time, media coverage of scientific issues needs greater representation of women and minorities in order to promote and encourage the career development of these under-represented groups.

Before coming to RSMAS, I worked for 6 years as a research scientist for a large conservation organization (the Wildlife Conservation Society in New York). As a result of this, I was exposed to a wide variety of communications opportunities, and realized just how important these opportunities can be to the wider world-at-large. The academic world of the Ivory Tower is increasingly an anachronism, and institutions that use their scientists to appropriately communicate their work beyond the academic world are more competitive in an increasingly media-savvy environment.

I believe that the career goals and satisfaction of many scientists at RSMAS will benefit from a communications workshop. Just as importantly, it will help promote a supportive atmosphere that encourages scientists to be spokespersons for their field, and provide them with effective tools to achieve this.

BUDGET

The cost of holding a communications workshop through COMPASS is usually \$10,000. This includes travel and accommodation for COMPASS staff based in California and/or Washington DC, as well as attendance by journalists and other media professionals.

I have negotiated with COMPASS to lower their rate to \$5,000 for this workshop (which includes \$4,000 for COMPASS staff and \$1,000 to cover travel, accommodations and per diem of select local and/or national journalists).

I have secured \$2,500 in matching funds from the RSMAS Office of Advancement (Assistant Dean Rose Mann).

Thus, an award of \$2,500 from the SEEDS “You Choose” Award will allow the workshop to go ahead. Potential workshop dates would be either April 2010 or September-November 2010.

TOTAL COST OF WORKSHOP:	\$5,000
SEEDS “You Choose” Award:	\$2,500
Matching Funds from RSMAS Advancement Office:	\$2,500

BIOGRAPHICAL SKETCH

Andrew Charles Baker

PROFESSIONAL PREPARATION

Cambridge University, UK	Natural Sciences (Zoology)	B.A. (<i>Hons.</i>) (<i>M.A.</i> 1997)	1993
University of Miami	Marine Biology and Fisheries	Ph.D.	1999
Wildlife Conservation Society	Coral reef molecular ecology	Postdoctoral Fellow	1999-2001

APPOINTMENTS

University of Miami	Assistant Professor, <i>Division of Marine Biology and Fisheries</i>	2005
Wildlife Conservation Society	Associate Conservation Biologist, <i>International Program</i>	2001

FIVE RELEVANT PUBLICATIONS (underlined = Baker student)

Baker AC, Romanski AM (2007) Multiple symbiotic partnerships are common in scleractinian corals but not octocorals. *Marine Ecology Progress Series* 335: 237-242

Baker AC, Starger CJ, McClanahan TR, Glynn PW (2004) Corals' adaptive response to climate change. *Nature* 430: 741

Baker AC (2003) Flexibility and specificity in coral-algal symbiosis: Diversity, ecology and biogeography of *Symbiodinium*. *Annual Review of Ecology and Systematics* 34: 661-689

Baker AC (2001) Reef corals bleach to survive change. *Nature* 411: 765-766 (*See also: Baker AC* (2002) Is bleaching really adaptive? – reply to Hoegh-Guldberg *et al.* *Nature* 415: 601-602)

Rowan R, Knowlton N, **Baker AC**, Jara J (1997) Landscape ecology of algal symbiont communities explains variation in episodes of coral bleaching. *Nature* 388: 265-269

FIVE OTHER SIGNIFICANT PUBLICATIONS (underlined = Baker student)

Correa AMS, Brandt ME, Smith TB, Thornhill DJ, **Baker AC** (2009) *Symbiodinium* associations with diseased and healthy scleractinian corals. *Coral Reefs* 28: 437-448

Correa AMS, **Baker AC** (2009) Understanding diversity in coral-algal symbiosis: A cluster-based approach to interpreting fine-scale genetic variation in the genus *Symbiodinium*. *Coral Reefs* 28: 81-93

Correa AMS, McDonald MD, **Baker AC** (2009) Development of clade-specific *Symbiodinium* primers for quantitative PCR (qPCR) and their application to detecting heat tolerant symbionts in Caribbean corals. *Marine Biology* DOI 10.1007/s00227-009-1263-5

Van Oppen MJH, **Baker AC**, Coffroth MA, Willis BL (2009) Bleaching resistance and the role of algal endosymbionts. In: *Coral bleaching: Patterns, processes, causes and consequences* (Van Oppen MJH & Lough JM, eds.), Springer Ecological Studies 205, Berlin, pp. 83-102

Baker AC, Glynn PW, Riegl B (2008) Climate change and coral reef bleaching: An ecological assessment of long-term impacts, recovery trends and future outlook. *Estuarine Coastal & Shelf Sci* 80: 435-471

SYNERGISTIC ACTIVITIES

SYNTHESIS AND TRANSFER OF KNOWLEDGE

Organization of international meetings and conferences:

- Science Program Committee, *11th International Coral Reef Symposium*, USA (2008)
- Symposium co-chair, *10th & 11th International Coral Reef Symposia* (2004, 2008)
- Invited symposium chair, *8th International Phycological Congress*, South Africa (2005);
- Symposium chair, *9th International Coral Reef Symposium*, Bali, Indonesia (2000)

Growing leadership role in marine conservation:

- WWF *Kathryn Fuller Science for Nature Seminar* (2009)
- *Faculty of 1000*, Ecology Faculty, Evolutionary Ecology Section (2009)
- Pew Fellow in Marine Conservation (2008)
- Member, Climate Change Working Group, NOAA Coral Reef Conservation Program (2008-09)
- Scientist spokesperson for SeaWeb's *Too Precious to Wear Campaign*
- Member, Coral Reef Sub-Group, Global Thermostat Project (2008-09)
- Mass media coverage in TV, radio and print: featured in *New York Times* (2004), *Washington Post* (2008), *CBS Evening News with Katie Couric* (2008), ABC (2001, 2003), CNN (2003), CBS (2003, 2008), NBC (2006, 2008), *BBC World Service* (2008)
- Baker (2001) in *Nature* named one of the *Top 100 Science Stories of 2001* by *Discover* magazine
- News and Views mentions in *Science* in 1998 (279:807) and 2003 (301:164); and in *Trends in Ecology and Evolution* in 2001 (16:120)

ADVISORS AND COLLABORATORS

- PW Glynn (U Miami) (*graduate advisor*)
- M Ateweberhan (Wildlife Conservation Society), ME Brandt (U Miami); E Castella (U Geneva); MA Coffroth (SUNY Buffalo); CF Dai (National Taiwan U); R DeSalle (American Museum of Natural History); WK Fitt (U Georgia, Athens); L Garcia-Cuetos (U Geneva); O Hoegh-Guldberg (U Queensland, Australia); C Langdon (U Miami); MD MacDonald (U Miami); J Maina (Wildlife Conservation Society); TR McClanahan (Wildlife Conservation Society), KR Moothien-Pillay (U Mauritius); S Naeem (Columbia U); J Pawlowski (U Geneva); X Pochon (U Hawaii); B Riegl (Nova Southeastern U); TB Smith (U Virgin Islands); DJ Thornhill (Bowdoin College); MJH Van Oppen (James Cook U), BL Willis (James Cook U); SSR Yeoh (National Taiwan U) (*collaborators*)

EDUCATION, OUTREACH AND TRAINING

Graduate students (*total 14*):

- Ph.D. students (total 7): R Cunning (current), X Serrano (current), P Jones (current), HH Wirshing (current), RN Silverstein (current), AMS Correa (postdoc FIU), CJ Starger (postdoc UCLA)
- Masters students (total 7): R Boonstra (current), P Gillette (current), JA Drew (postdoc, Chicago), AF Drohan (NOAA/NMFS), N Soffer (PhD student FIU), CP Sibata (HS teacher), JM Calnan (U Virgin Islands)

Postdocs (total 1): R Bhagooli (U Mauritius)

Collaborative educational activities:

- Scientist host, RSMAS Alumni cruise, *Liberty of the Seas*, Royal Caribbean (8 days, 2008)
- One PhD student currently supported through NSF GK-12 program in middle school in Miami; two former students also supported by GK-12 program at schools in New York and Miami
- Integrated NSF research into teaching of non-degree certificate students (aged 20-60 years old) and secondary school science teachers at Columbia University (2001-2005)
- Partnered with free-choice science educators to develop interactive exhibit on Baker's NSF research as part of the New York Aquarium's \$8M (\$1.5M from NSF Informal Science Education) permanent exhibit *Alien Stingers* (winner of the 2003 MUSE award Bronze medal)
- Expedition scientist, American Museum of Natural History, *Discovery Tours* (2002)
- High school outreach: *Intel Science Talent Search* (one student was national semi-finalist in 2001), *New York Academy of Sciences*
- Expedition scientist, *Reef Watch*, an interactive scientific expedition broadcast on the internet involving a team of reef scientists and K-12 teachers (1999-2000)