

Request for Permission to Include Previously Published or Co-Authored Material

Date: 26 April 2016

From: Prof. Rosemary Gillespie

To: Associate Dean of the Graduate Division for Academic Affairs
Graduate Services: Degrees, 318 Sproul Hall

Re: Andrew Rominger, SID: 21868391, ESPM, rominger@berkeley.edu

I am writing to ask for permission for the dissertation of the above named student to use coauthored and/or previously published material, as follows:

- 1) "Punctuated non-equilibrium and niche conservatism explain biodiversity fluctuations through the Phanerozoic." Under review at *Proceedings of the National Academy of Science, USA*.
- 2) "Community assembly on isolated islands: macroecology meets evolution." 2015. *Global Ecology and Biogeography*.
- 3) "meteR: An R package for testing the Maximum Entropy Theory of Ecology." Under review at *Methods in Ecology and Evolution*

The student named was involved in the published/coauthored research in a role that makes it appropriate to claim a role as author of the work as an original contribution to research. The previously published work forms part of a larger coherent argument appropriate for the graduate degree for which the student is a candidate.

Statements agreeing to the use of co-authored work are included with this letter.

Sincerely,

Prof. Rosemary Gillespie

Punctuated non-equilibrium and niche conservatism explain biodiversity fluctuations through the Phanerozoic

Andrew J. Rominger^{*}, Miguel A. Fuentes^{† ‡ §}, and Pablo A. Marquet^{¶ † || ** ††}

^{*}Department of Environmental Science, Policy and Management, University of California, Berkeley, [†]Santa Fe Institute, 1399 Hyde Park Road, Santa Fe, New Mexico 87501, US, [‡]Instituto de Investigaciones Filosóficas, SADA, CONICET, Bulnes 642, 1428 Buenos Aires, Argentina, [§]Facultad de Ingeniería y Tecnología, Universidad San Sebastián, Lota 2465, Santiago 7510157, Chile, [¶]Departamento de Ecología, Facultad de Ciencias Biológicas, Pontificia Universidad de Chile, Alameda 340, Santiago, Chile, ^{||}Instituto de Ecología y Biodiversidad, Casilla 653, Santiago, Chile, ^{**}Laboratorio Internacional de Cambio Global (LINCGlobal), Pontificia Universidad Católica de Chile, Alameda 340, Santiago, Chile, and ^{††}Centro Cambio Global UC, Av. Vicuña Mackenna 4860, Campus San Vicuña, Santiago, Chile

Submitted to Proceedings of the National Academy of Sciences of the United States of America

Fluctuations in biodiversity, both large and small, are pervasive through the fossil record, yet we do not understand the processes generating them. Here we use a novel extension of theory from non-equilibrium statistical physics to show that three universal properties of macroevolution, punctuated adaptive radiation, niche conservatism and resultant heterogeneity of diversification rates between taxa, are sufficient to explain previously unaccounted for biodiversity patterns throughout the Phanerozoic. Using this theory, known as super-statistics, we identify taxonomic orders as largely autonomous evolutionary units, each likely experiencing its own unique and conserved adaptive landscape. This indicates that while within-order diversification could be adequately explained by neutral processes, between order diversification is likely driven by major evolutionary innovations. Super-statistics, has been successfully used to explain other complex systems including driven turbulent flows and wild stock market fluctuations. Compared to other approaches that have used simple birth-death processes, equilibrium dynamics or non-linear theories from complexity science, super-statistics is superior in its ability to account for both small and extreme fluctuations in fossil diversity. Its success opens up new research directions to better understand the evolutionary processes leading adaptive landscapes to be conserved within orders and undergo punctuated innovations between orders.

paleobiology | diversity dynamics | super-statistics

Abbreviations: PBDB, Paleobiology Database

Biodiversity has not remained constant nor followed a simple trajectory through geologic time [1, 2, 3, 4, 5, 6]. Instead, it has been marked by fluctuations in the number of extant taxa, both positive in the case of net origination or negative in the case of net extinction. Major events, such as adaptive radiations and mass extinctions have received special attention [7, 8], but fluctuations of all sizes are ubiquitous [2, 5, 9].

Several approaches have been taken to study the complex trajectory of paleo-biodiversity ranging from the hypothesis that biological systems self-organize to the brink of critical phase-transitions [10, 11] to invocations of non-linear environmental perturbations [12] and escalatory co-evolutionary interactions [13]. New data and analyses have not supported any of these hypotheses at the scale of the entire Phanerozoic marine invertebrate fauna [14, 15, 5]. Other studies have modeled the mean trend in diversity as tracking a potentially evolving equilibrium [2, 5, 6, 16] and yet ignore the potential role of stochasticity and non-equilibrium dynamics in producing observed patterns [17, 4, 9]. As such, we still lack a synthetic theory of evolving biodiversity through the fossil record. Here we use a simple model of evolution in an abstract niche space derived from universal non-equilibrium processes to predict, with great accuracy, the complex distribution of pervasive diversity fluctuations throughout the marine Phanerozoic.

Despite the heterogeneity of explanations of Phanerozoic biodiversity, consensus has emerged on three properties of macroevolution: *i*) gross ecological and life history attributes of clades (i.e. groups of related species descending from a common ancestor) are often maintained, a phenomenon known as niche conservatism [18, 19]; *ii*) long periods of niche conservatism are interrupted by adaptive diversification and exploration of new ecological niche space [20, 21, 19]; and *iii*) as a consequence of the interaction between their life history characteristics and the dynamics of the environments they inhabit [22] different clades experience different rates of morphological evolution, speciation and extinction [23, 2, 24, 3].

Observed bursts of adaptive radiation leading to novel morphologies in the fossil record led Eldredge and Gould to their hypothesis of punctuated equilibrium [20]. Here we show that this punctuation is actually akin to the “super statistical theory” of non-equilibrium dynamics in statistical physics [25]. Super-statistics [25] proposes that non-equilibrium systems can be decomposed into locally equilibrium sub-systems. The distribution of equilibria across sub-systems determines the dynamics of the complete system [25]. When these sub-systems are superimposed the resulting system can no longer be described by a single equilibrium model. In the context of macroevolution we propose that a clade with conserved life history characteristics corresponds to a locally equilibrium sub-system. If a certain region of

Significance

Our study is the first to demonstrate that complex patterns in the sequence of origination and extinction events in the fossil record are the result of a simple underlying process analogous to non-equilibrium dynamics in statistical mechanics. Our theory provides a novel explanation for deep time diversity dynamics invoking emergence of lineage-level traits as the drivers of complexity via the same mechanisms by which complexity emerges in large physical and social systems. In the context of fossil diversity we show how this complexity arises naturally from the uniquely biological mechanisms of punctuated adaptive radiation followed by long durations of niche conservatism and thus identify these mechanisms as sufficient and necessary to produce observed patterns in the fossil record.

Reserved for Publication Footnotes



Andy Rominger <ajrominger@gmail.com>

Permission to use co-authored material

3 messages

Andy Rominger <ajrominger@gmail.com>

Thu, Apr 21, 2016 at 9:52 AM

To: "Pablo A. Marquet" <pmarquet@bio.puc.cl>, Miguel Fuentes <fuentesmig@gmail.com>

Dear co-authors,

Will you grant me permission to use material from our co-authored paper "Punctuated non-equilibrium and niche conservatism explain biodiversity fluctuations through the Phanerozoic" in my dissertation?

Your response to this email will be used as part of a formal request to the Graduate Division from Drs. John Harte and Rosemary Gillespie, my Dissertation Committee Chairs

Thank you for considering this request,
Andy Rominger

Miguel Fuentes <fuentesmig@gmail.com>

Thu, Apr 21, 2016 at 10:15 AM

To: Andy Rominger <ajrominger@gmail.com>

Cc: "Pablo A. Marquet" <pmarquet@bio.puc.cl>

It is ok for me Andy, and "break a leg" at your dissertation!!

Miguel

<http://sites.google.com/site/miguelfuentessite/>

[Quoted text hidden]

Pablo A. Marquet <pmarquet@bio.puc.cl>

Thu, Apr 21, 2016 at 12:50 PM

To: Andy Rominger <ajrominger@gmail.com>

Cc: Miguel Fuentes <fuentesmig@gmail.com>

Hi Andy,

Yes indeed!!! You are completely authorised to use any part or combination of parts of the material in the above mentioned paper, in all ways you deem appropriate and for any existing or future audience or outlet.

Best!!!

PAblo

[Quoted text hidden]

--

Dr. Pablo A. Marquet

Profesor Titular
Departamento de Ecología
Pontificia Universidad Católica de Chile
E-mail: pmarquet@bio.puc.cl

Investigador Asociado
Instituto de Ecología y Biodiversidad (IEB)

External Faculty



Community assembly on isolated islands: macroecology meets evolution

A. J. Rominger^{1†}, K. R. Goodman^{1†}, J. Y. Lim^{2†}, E. E. Armstrong^{1‡},
L. E. Becking^{1,3}, G. M. Bennett⁴, M. S. Brewer^{1§}, D. D. Cotoras^{2¶}, C. P. Ewing³,
J. Harte¹, N. D. Martinez⁵, P. M. O'Grady¹, D. M. Percy⁶, D. K. Price⁴,
G. K. Roderick¹, K. L. Shaw⁷, F. S. Valdovinos⁵, D. S. Gruner^{8**} and
R. G. Gillespie^{1*,**}

¹Department of Environmental Science, Policy, and Management, University of California, Berkeley, CA, USA, ²Department of Integrative Biology, University of California, Berkeley, CA, USA, ³Institute for Marine Resources and Ecosystem Studies (IMARES), Wageningen University & Research Centre, Den Helder, The Netherlands, ⁴Department of Integrative Biology, University of Texas, Austin, TX, USA, ⁵Pacific Ecoinformatics and Computational Ecology Lab, Berkeley, CA, USA, ⁶Department of Life Sciences, Natural History Museum, London, UK, ⁷Department of Neurobiology and Behavior, Cornell, Ithaca, NY, USA, ⁸Department of Entomology, University of Maryland, College Park, MD, USA

*Correspondence: R. G. Gillespie, Department of Environmental Science, Policy, and Management, University of California, Berkeley, CA 94720-3114, USA.

E-mail: gillespie@berkeley.edu

†These authors contributed equally. **Co-senior authors. ‡Present address: Department of Biology, University of Hawaii, Hilo, Hawaii 96720-4091, USA. §Present address: Department of Biology, East Carolina University, Greenville, NC 27858, USA. ¶Present address: Department of Entomology and Center for Comparative Genomics, California Academy of Sciences, San Francisco, CA 94118, USA.

ABSTRACT

Aim Understanding how ecological and evolutionary processes together determine patterns of biodiversity remains a central aim in biology. Guided by ecological theory, we use data from multiple arthropod lineages across the Hawaiian archipelago to explore the interplay between ecological (population dynamics, dispersal, trophic interactions) and evolutionary (genetic structuring, adaptation, speciation, extinction) processes. Our goal is to show how communities develop from the dynamic feedbacks that operate at different temporal and spatial scales.

Location The Hawaiian islands (19–22° N, 155–160° W).

Methods We synthesize genetic data from selected arthropods across the Hawaiian archipelago to determine the relative role of dispersal and *in situ* differentiation across the island chronosequence. From four sites on three high islands with geological ages ranging from < 1 Ma to 5 Ma, we also generate ecological metrics on plant–herbivore bipartite networks drawn from the literature. We compare the structure of these networks with predictions derived from the principle of maximum information entropy.

Results From the perspective of the island chronosequence we show that species at lower trophic levels develop population genetic structure at smaller temporal and spatial scales than species at higher trophic levels. Network nestedness decreases while modularity increases with habitat age. Single-island endemics exhibit more specialization than broadly distributed species, but both show the least specialization in communities on middle-aged substrates. Plant–herbivore networks also show the least deviation from theoretical predictions in middle-aged communities.

Main conclusions The application of ecological theory to island chronosequences can illuminate feedbacks between ecological and evolutionary processes in community assembly. We show how patterns of population genetic structure, decreasing network nestedness, increasing network modularity and increased specialization shift from early assembly driven by immigration, to *in situ* diversification after > 1 Myr. Herbivore–plant communities only transiently achieve statistical steady state during assembly, presumably due to incomplete assembly from dispersal in the early stages, and the increasing influence of island ontogeny on older islands.

Keywords

Arthropods, chronosequence, Hawaii, maximum entropy, networks, population genetics.



Andy Rominger <ajrominger@gmail.com>

Permission to use co-authored material

17 messages

Andy Rominger <ajrominger@gmail.com>

Fri, Apr 22, 2016 at 5:17 PM

To: Kari Roesch Goodman <krgoodman@berkeley.edu>, Lim Jun Ying <junyinglim@gmail.com>, Ellie Armstrong <ellieearmstrong@gmail.com>, Lisa B <lebecking@gmail.com>, gordon.bennett@hawaii.edu, Michael Brewer <michaelsbrewer@gmail.com>, Darko Cotoras <darkocotoras@gmail.com>, Curtis Ewing <curtisewing1@gmail.com>, Neo Martinez <neodamian@gmail.com>, Patrick O'GRADY <ogrady@berkeley.edu>, Diana Percy <d.percy@nhm.ac.uk>, Donald Price <donalddp@hawaii.edu>, RODERICK George <roderick@berkeley.edu>, Kerry Shaw <KLS4@cornell.edu>, Fernanda Valdovinos <fevaldovinos@gmail.com>, Daniel Gruner <dsgruner@umd.edu>, Rosemary GILLESPIE <gillespie@berkeley.edu>

Dear co-authors,

Hope you all are doing well! I've decided to use part of our work together in my dissertation, but I'd like to ask your formal permission to do so first. Will you grant me permission to use material from our co-authored paper "Community assembly on isolated islands: macroecology meets evolution" published in *Global Ecology and Biogeography* in my dissertation?

Your response to this email will be used as part of a formal request to the Graduate Division from Drs. John Harte and Rosemary Gillespie, my Dissertation Committee Chairs

Thank you for considering this request,
Andy Rominger

George RODERICK <roderick@berkeley.edu>

Fri, Apr 22, 2016 at 5:24 PM

To: Andy Rominger <ajrominger@gmail.com>

Yes

[Quoted text hidden]

Darko Cotoras <darkocotoras@gmail.com>

Fri, Apr 22, 2016 at 5:30 PM

To: Andy Rominger <ajrominger@gmail.com>

Cc: Kari Roesch Goodman <krgoodman@berkeley.edu>, Lim Jun Ying <junyinglim@gmail.com>, Ellie Armstrong <ellieearmstrong@gmail.com>, Lisa B <lebecking@gmail.com>, gordon.bennett@hawaii.edu, Michael Brewer <michaelsbrewer@gmail.com>, Curtis Ewing <curtisewing1@gmail.com>, Neo Martinez <neodamian@gmail.com>, Patrick O'GRADY <ogrady@berkeley.edu>, Diana Percy <d.percy@nhm.ac.uk>, Donald Price <donaldp@hawaii.edu>, RODERICK George <roderick@berkeley.edu>, Kerry Shaw <KLS4@cornell.edu>, Fernanda Valdovinos <fevaldovinos@gmail.com>, Daniel Gruner <dsgruner@umd.edu>, Rosemary GILLESPIE <gillespie@berkeley.edu>

Dear Andy

Yes, you have my permission to include our co-authored paper as part of your dissertation. Again, congratulations for finishing. Best

Darko

[Quoted text hidden]

—

$$\langle * \rangle \langle * \rangle \langle * \rangle \langle * \rangle$$

Darko Cotoras, PhD

Post Doctoral Researcher

Paleogenomics lab. University of California, Santa Cruz

Arachnology / Center for Comparative Genomics. California Academy of Sciences

<https://www.calacademy.org/staff/ibss/entomology/darko-cotoras>

Jun Ying Lim <junyinglim@gmail.com>
To: Andy Rominger <ajrominger@gmail.com>

Fri, Apr 22, 2016 at 5:51 PM

Sure, no problem!

On 22 Apr 2016, at 5:20 PM, Andy Rominger <ajrominger@gmail.com> wrote:

the published ms basically...

On Fri, Apr 22, 2016 at 5:20 PM, Andy Rominger <ajrominger@gmail.com> wrote:
text

On Fri, Apr 22, 2016 at 5:19 PM, Jun Ying Lim <junyinglim@gmail.com> wrote:
By material, what do you mean?

Data? Analyses? Text?

[Quoted text hidden]

Diana Percy <d.percy@nhm.ac.uk>
To: Andy Rominger <ajrominger@gmail.com>

Fri, Apr 22, 2016 at 6:28 PM

Hi Andy,
I grant permission as requested below.
All the best with your thesis submission.
Regards,
Diana Percy

From: Andy Rominger [ajrominger@gmail.com]

Sent: Saturday, April 23, 2016 1:17 AM

To: Kari Roesch Goodman; Lim Jun Ying; Ellie Armstrong; Lisa B; gordon.bennett@hawaii.edu; Michael Brewer;
Darko Cotoras; Curtis Ewing; Neo Martinez; Patrick O'GRADY; Diana Percy; Donald Price; RODERICK George;
Kerry Shaw; Fernanda Valdovinos; Daniel Gruner; Rosemary GILLESPIE

Subject: Permission to use co-authored material

[Quoted text hidden]

Gordon Bennett <gmb4@hawaii.edu>
To: Andy Rominger <ajrominger@gmail.com>

Fri, Apr 22, 2016 at 7:49 PM

Hi Andy,

You have my permission. Good luck with the filling process!

Where to next?

Best,
Gordon

[Quoted text hidden]

--

Assistant Professor

University of Hawaii, Manoa
Dept. Plant and Environmental Protection Sciences
1-808-956-2000
Lab Website: <http://www.ctahr.hawaii.edu/BennettG/>

Kerry L. Shaw <cls4@cornell.edu>

Fri, Apr 22, 2016 at 8:05 PM

To: Andy Rominger <ajrominger@gmail.com>

Cc: Kari Roesch Goodman <krgoodman@berkeley.edu>, Lim Jun Ying <junyinglim@gmail.com>, Ellie Armstrong <ellieearmstrong@gmail.com>, Lisa B <lebecking@gmail.com>, "gordon.bennett@hawaii.edu" <gordon.bennett@hawaii.edu>, Michael Brewer <michaelsbrewer@gmail.com>, Darko Cotoras <darkocotoras@gmail.com>, Curtis Ewing <curtisewing1@gmail.com>, Neo Martinez <neodamian@gmail.com>, Patrick O'GRADY <ogrady@berkeley.edu>, Diana Percy <d.percy@nhm.ac.uk>, Donald Price <donaldp@hawaii.edu>, RODERICK George <roderick@berkeley.edu>, Fernanda Valdovinos <fevaldovinos@gmail.com>, Daniel Gruner <dsgruner@umd.edu>, Rosemary GILLESPIE <gillespie@berkeley.edu>

Dear Andy,
Yes, you have my permission to use this paper as part of your dissertation.
best wishes,
Kerry Shaw

[Quoted text hidden]

Donald Price <donaldp@hawaii.edu>

Fri, Apr 22, 2016 at 9:51 PM

To: Andy Rominger <ajrominger@gmail.com>

Cc: Kari Roesch Goodman <krgoodman@berkeley.edu>, Lim Jun Ying <junyinglim@gmail.com>, Ellie Armstrong <ellieearmstrong@gmail.com>, Lisa B <lebecking@gmail.com>, gordon.bennett@hawaii.edu, Michael Brewer <michaelsbrewer@gmail.com>, Darko Cotoras <darkocotoras@gmail.com>, Curtis Ewing <curtisewing1@gmail.com>, Neo Martinez <neodamian@gmail.com>, Patrick O'GRADY <ogrady@berkeley.edu>, Diana Percy <d.percy@nhm.ac.uk>, RODERICK George <roderick@berkeley.edu>, Kerry Shaw <KLS4@cornell.edu>, Fernanda Valdovinos <fevaldovinos@gmail.com>, Daniel Gruner <dsgruner@umd.edu>, Rosemary GILLESPIE <gillespie@berkeley.edu>

Hi Andy!

Yes, of course, you can use the material in the paper "Community assembly on isolated islands: macroecology meets evolution" in your dissertation.

Good luck with your Dissertation Defense!

Don

[Quoted text hidden]

--

Dr. Donald Price
Director TCBES Graduate Program
Professor of Biology

Science and Technology Building 109
University of Hawaii at Hilo
Hilo, HI 96720

808-932-7178
donaldp@hawaii.edu

<http://tcbes.uhh.hawaii.edu/>
<http://hilo.hawaii.edu/depts/biology/>
<https://sites.google.com/a/hawaii.edu/price-lab-at-university-of-hawaii/>

Kari Goodman <karioeschgoodman@gmail.com>

Fri, Apr 22, 2016 at 11:13 PM

To: Donald Price <donaldp@hawaii.edu>

Cc: Andy Rominger <ajrominger@gmail.com>, Kari Roesch Goodman <rgoodman@berkeley.edu>, Lim Jun Ying <junyinglim@gmail.com>, Ellie Armstrong <ellieearmstrong@gmail.com>, Lisa B <lebecking@gmail.com>, gordon.bennett@hawaii.edu, Michael Brewer <michaelsbrewer@gmail.com>, Darko Cotoras <darkocotoras@gmail.com>, Curtis Ewing <curtisewing1@gmail.com>, Neo Martinez <neodamian@gmail.com>, Patrick O'GRADY <ogrady@berkeley.edu>, Diana Percy <d.percy@nhm.ac.uk>, RODERICK George <roderick@berkeley.edu>, Kerry Shaw <KLS4@cornell.edu>, Fernanda Valdovinos <fevaldovinos@gmail.com>, Daniel Gruner <dsgruner@umd.edu>, Rosemary GILLESPIE <gillespie@berkeley.edu>

Yep, you have my permission. Good luck finishing up!

~Kari

[Quoted text hidden]

Patrick O'GRADY <ogrady@drosophilaevolution.com>

Fri, Apr 22, 2016 at 11:54 PM

To: Andy Rominger <ajrominger@gmail.com>

Cc: Kari Roesch Goodman <rgoodman@berkeley.edu>, Lim Jun Ying <junyinglim@gmail.com>, Ellie Armstrong <ellieearmstrong@gmail.com>, Lisa B <lebecking@gmail.com>, "gordon.bennett@hawaii.edu" <gordon.bennett@hawaii.edu>, Michael Brewer <michaelsbrewer@gmail.com>, Darko Cotoras <darkocotoras@gmail.com>, Curtis Ewing <curtisewing1@gmail.com>, Neo Martinez <neodamian@gmail.com>, Patrick O'GRADY <ogrady@berkeley.edu>, Diana Percy <d.percy@nhm.ac.uk>, Donald Price <donaldp@hawaii.edu>, RODERICK George <roderick@berkeley.edu>, Kerry Shaw <KLS4@cornell.edu>, Fernanda Valdovinos <fevaldovinos@gmail.com>, Daniel Gruner <dsgruner@umd.edu>, Rosemary GILLESPIE <gillespie@berkeley.edu>

Andy,

You have my permission as well. Good luck with the dissertation.

Patrick

[Quoted text hidden]

--

Patrick O'Grady

Associate Professor

Office: 117A Hilgard Hall

Lab: 125/127 Hilgard Hall

Mailing Address:

University of California, Berkeley

Department of Environmental Science, Policy and Management

130 Mulford Hall

Berkeley, CA 94720

Ellie Armstrong <ellieearmstrong@gmail.com>

Fri, Apr 22, 2016 at 11:56 PM

To: Andy Rominger <ajrominger@gmail.com>, Patrick O'GRADY <ogrady@drosophilaevolution.com>

Cc: Curtis Ewing <curtisewing1@gmail.com>, Daniel Gruner <dsgruner@umd.edu>, Darko Cotoras <darkocotoras@gmail.com>, Diana Percy <d.percy@nhm.ac.uk>, Donald Price <donaldp@hawaii.edu>, Fernanda Valdovinos <fevaldovinos@gmail.com>, Kari Roesch Goodman <rgoodman@berkeley.edu>, Kerry Shaw <KLS4@cornell.edu>, Lim Jun Ying <junyinglim@gmail.com>, Lisa B <lebecking@gmail.com>, Michael Brewer <michaelsbrewer@gmail.com>, Neo Martinez <neodamian@gmail.com>, Patrick O'GRADY <ogrady@berkeley.edu>,

RODERICK George <roderick@berkeley.edu>, Rosemary GILLESPIE <gillespie@berkeley.edu>, "gordon.bennett@hawaii.edu" <gordon.bennett@hawaii.edu>

Dear Andy,

You also have my permission. Congrats!

All best,
Ellie

[Quoted text hidden]

Daniel Gruner <dsgruner@umd.edu>

Sat, Apr 23, 2016 at 9:51 AM

Reply-To: dsgruner@umd.edu

To: Ellie Armstrong <elliearmstrong@gmail.com>, Andy Rominger <ajrominger@gmail.com>, Patrick O'GRADY <ograde@drosophilaevolution.com>

Cc: Curtis Ewing <curtisewing1@gmail.com>, Darko Cotoras <darkocotoras@gmail.com>, Diana Percy <d.percy@nhm.ac.uk>, Donald Price <donalddp@hawaii.edu>, Fernanda Valdovinos <fevaldovinos@gmail.com>, Kari Roesch Goodman <krgoodman@berkeley.edu>, Kerry Shaw <KLS4@cornell.edu>, Lim Jun Ying <junyinglim@gmail.com>, Lisa B <lebecking@gmail.com>, Michael Brewer <michaelsbrewer@gmail.com>, Neo Martinez <neodamian@gmail.com>, Patrick O'GRADY <ograde@berkeley.edu>, RODERICK George <roderick@berkeley.edu>, Rosemary GILLESPIE <gillespie@berkeley.edu>, "gordon.bennett@hawaii.edu" <gordon.bennett@hawaii.edu>

Hi Andy, of course, please do. Dan Gruner

On 4/23/2016 2:56 AM, Ellie Armstrong wrote:

Dear Andy, You also have my permission. Congrats! All best, Ellie

On Fri, Apr 22, 2016 at 8:54 PM Patrick O'GRADY <ograde@drosophilaevolution.com> <mailto:ograde@drosophilaevolution.com>> wrote:

Andy,

You have my permission as well. Good luck with the dissertation.
Patrick

On Friday, April 22, 2016, Andy Rominger <ajrominger@gmail.com> <mailto:ajrominger@gmail.com>> wrote:

Dear co-authors,

Hope you all are doing well! I've decided to use part of our work together in my dissertation, but I'd like to ask your formal permission to do so first. Will you grant me permission to use material from our co-authored paper "Community assembly on isolated islands: macroecology meets evolution" published in Global Ecology and Biogeography in my dissertation?

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Thank you for considering this request,
Andy Rominger

-- Patrick O'Grady
Associate Professor
Office: 117A Hilgard Hall
Lab: 125/127 Hilgard Hall

Mailing Address:
University of California, Berkeley
Department of Environmental Science, Policy and Management
130 Mulford Hall
Berkeley, CA 94720

--

Daniel S. Gruner, Associate Professor
Department of Entomology
4112 Plant Sciences Bldg
University of Maryland
College Park, MD 20742 U.S.A.
(o) 301-405-3957 (f) 301-314-9290
dsgruner@umd.edu

<http://grunerlab.umd.edu>
<https://twitter.com/GrunerDaniel>

Fernanda Valdovinos <fevaldovinos@gmail.com>

Sat, Apr 23, 2016 at 12:35 PM

To: Dan Gruner <dsgruner@umd.edu>

Cc: Ellie Armstrong <ellieearmstrong@gmail.com>, Andy Rominger <ajrominger@gmail.com>, Patrick O'GRADY <ogrady@drosophilaevolution.com>, Curtis Ewing <curtisewing1@gmail.com>, Darko Cotoras <darkocotoras@gmail.com>, Diana Percy <d.percy@nhm.ac.uk>, Donald Price <donalddp@hawaii.edu>, Kari Roesch Goodman <krgoodman@berkeley.edu>, Kerry Shaw <KLS4@cornell.edu>, Lim Jun Ying <junyinglim@gmail.com>, Lisa B <lebecking@gmail.com>, Michael Brewer <michaelsbrewer@gmail.com>, Neo Martinez <neodamian@gmail.com>, Patrick O'GRADY <ogrady@berkeley.edu>, RODERICK George <roderick@berkeley.edu>, Rosemary GILLESPIE <gillespie@berkeley.edu>, "gordon.bennett@hawaii.edu" <gordon.bennett@hawaii.edu>

You also got my permission Andy!

Best,
F

[Quoted text hidden]

Neo Martinez <neodamian@gmail.com>

Sat, Apr 23, 2016 at 1:18 PM

To: Fernanda Valdovinos <fevaldovinos@gmail.com>

Cc: Andy Rominger <ajrominger@gmail.com>, Dan Gruner <dsgruner@umd.edu>, Diana Percy <d.percy@nhm.ac.uk>, RODERICK George <roderick@berkeley.edu>, Lim Jun Ying <junyinglim@gmail.com>, Donald Price <donalddp@hawaii.edu>, Patrick O'GRADY <ogrady@berkeley.edu>, Curtis Ewing <curtisewing1@gmail.com>, Michael Brewer <michaelsbrewer@gmail.com>, Ellie Armstrong <ellieearmstrong@gmail.com>, Kerry Shaw <KLS4@cornell.edu>, Patrick O'GRADY <ogrady@drosophilaevolution.com>, Kari Roesch Goodman <krgoodman@berkeley.edu>, "gordon.bennett@hawaii.edu" <gordon.bennett@hawaii.edu>, Darko Cotoras <darkocotoras@gmail.com>, Rosemary GILLESPIE <gillespie@berkeley.edu>, Lisa B <lebecking@gmail.com>

Likewise, got mine too. Good luck with phinishing!
~neo

[Quoted text hidden]

Michael Brewer <michaelsbrewer@gmail.com>

Sat, Apr 23, 2016 at 2:08 PM

To: Andy Rominger <ajrominger@gmail.com>

No problem.

-Michael

[Quoted text hidden]

lisa becking <lebecking@gmail.com>
To: Andy Rominger <ajrominger@gmail.com>

Mon, Apr 25, 2016 at 7:03 AM

Hi Andy,

Oh dear I replied to Dan Gruner, not you. Apologies!

Hereby my formal permission. Good luck with the thesis!

Lisa

On Sun, Apr 24, 2016 at 11:13 PM, Andy Rominger <ajrominger@gmail.com> wrote:

Dear Curtis and Lisa,

Just wanted to remind you of this request for permission.

Thanks so much!

Andy

[Quoted text hidden]

Curtis Ewing <curtisewing1@gmail.com>
To: Andy Rominger <ajrominger@gmail.com>

Mon, Apr 25, 2016 at 9:32 PM

Sorry, somehow it went to Darko, so yes, permission granted.

Curtis

On Mon, Apr 25, 2016 at 8:48 AM, Andy Rominger <ajrominger@gmail.com> wrote:

> Sorry Curtis I ding have anything. Perhaps did you reply to someone else's
> email?

>

> On Apr 24, 2016 11:24 PM, "Curtis Ewing" <curtisewing1@gmail.com> wrote:

>>

>> See above

>>

>> On Apr 24, 2016 11:13 AM, "Andy Rominger" <ajrominger@gmail.com> wrote:

>>>

>>> Dear Curtis and Lisa,

>>>

>>> Just wanted to remind you of this request for permission.

>>>

>>> Thanks so much!

>>> Andy

>>>

>>> On Apr 22, 2016 5:17 PM, "Andy Rominger" <ajrominger@gmail.com> wrote:

>>> >

[Quoted text hidden]

--

Dr. Curtis Ewing
Junior Researcher



Andy Rominger <ajrominger@gmail.com>

Permission to use co-authored material

2 messages

Andy Rominger <ajrominger@gmail.com>

Fri, Apr 22, 2016 at 12:39 PM

To: John Harte <jharte@berkeley.edu>

Dear co-authors,

Will you grant me permission to use material from our co-authored paper "Community assembly on isolated islands: macroecology meets evolution" published in Global Ecology and Biogeography in my dissertation?

Your response to this email will be used as part of a formal request to the Graduate Division from Drs. John Harte and Rosemary Gillespie, my Dissertation Committee Chairs

Thank you for considering this request,
Andy Rominger

John Harte <jharte@berkeley.edu>

Fri, Apr 22, 2016 at 2:58 PM

To: Andy Rominger <ajrominger@gmail.com>

You have my permission to use material that I have co-authored in your dissertation.

John Harte
Professor of Ecosystem Sciences
ERG/ESPM
310 Barrows Hall
University of California
Berkeley, CA 94720 USA
jharte@berkeley.edu

[Quoted text hidden]



Andy Rominger <ajrominger@gmail.com>

Permission to use co-authored material

Rosemary Gillespie <gillespie@berkeley.edu>
To: Andy Rominger <ajrominger@gmail.com>

Tue, Apr 26, 2016 at 3:43 PM

Dear Andy
You have my permission to use the paper.

My best

Rosemary Gillespie
Professor & Schlinger Chair in Systematic Entomology
University of California Berkeley.
Office: 221 Wellman Hall
email: gillespie@berkeley.edu
<http://nature.berkeley.edu/~gillespie/>
International Biogeography Society, <http://www.biogeography.org/>

On Apr 23, 2016, at 1:18 PM, Neo Martinez <neodamian@gmail.com> wrote:

Likewise, got mine too. Good luck with phinishing!
~neo

On Apr 23, 2016 3:35 PM, "Fernanda Valdovinos" <fevaldovinos@gmail.com> wrote:
You also got my permission Andy!

Best,
F

On Sat, Apr 23, 2016 at 9:51 AM, Daniel Gruner <dsgruner@umd.edu> wrote:
Hi Andy, of course, please do. Dan Gruner

On 4/23/2016 2:56 AM, Ellie Armstrong wrote:
Dear Andy, You also have my permission. Congrats! All best, Ellie

On Fri, Apr 22, 2016 at 8:54 PM Patrick O'GRADY <ogrady@drosophilaevolution.com>
<<mailto:ogrady@drosophilaevolution.com>>> wrote:

Andy,
You have my permission as well. Good luck with the dissertation.
Patrick

On Friday, April 22, 2016, Andy Rominger <ajrominger@gmail.com>
<<mailto:ajrominger@gmail.com>>> wrote:

Dear co-authors,

Hope you all are doing well! I've decided to use part of our work together in my dissertation, but I'd like to ask your formal permission to do so first. Will you grant me permission to use material from our co-authored paper "Community assembly

on isolated islands: macroecology meets evolution" published in Global Ecology and Biogeography in my dissertation?

Your response to this email will be used as part of a formal request to the Graduate Division from Drs. John Harte and Rosemary Gillespie, my Dissertation Committee Chairs

Thank you for considering this request,
Andy Rominger

-- Patrick O'Grady
Associate Professor
Office: 117A Hilgard Hall
Lab: 125/127 Hilgard Hall

Mailing Address:
University of California, Berkeley
Department of Environmental Science, Policy and Management
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Berkeley, CA 94720

--

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<https://twitter.com/GrunerDaniel>

1 **meter**: An R package for testing the Maximum Entropy Theory of

2 Ecology

3 Andrew J. Rominger^{1,*} and Cory Merow²

4 ¹Environmental Science, Policy and Management, University of California, Berkeley

5 ²Ecology and Evolutionary Biology, University of Connecticut, Storrs, CT

6 *Corresponding author: rominger@berkeley.edu

7 February 25, 2016

8 Article type: Application

9 Abstract Word Count: 261

10 Word Count: 2633

11 Number of Figures: 3

12 Number of Tables: 1

13 Keywords: Maximum entropy, Macroecology, Species Abundance Distribution, Species Area

14 Relationship, Body Size Distribution



Andy Rominger <ajrominger@gmail.com>

Permission to use co-authored material2 messages

Andy Rominger <ajrominger@gmail.com>
To: Cory Merow <cory.merow@gmail.com>

Fri, Apr 22, 2016 at 9:12 PM

Dear co-authors,

Will you grant me permission to use material from our co-authored paper "meteR: An R package for testing the Maximum Entropy Theory of Ecology" under revision at Methods in Ecology and Evolution in my dissertation?

Your response to this email will be used as part of a formal request to the Graduate Division from Drs. John Harte and Rosemary Gillespie, my Dissertation Committee Chairs

Thank you for considering this request,
Andy Rominger

Cory <cory.merow@gmail.com>
To: Andy Rominger <ajrominger@gmail.com>

Sat, Apr 23, 2016 at 5:15 PM

Hi Andy,
I'd be very happy for our work on meteR to be included in your dissertation.
Cory

[Quoted text hidden]