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Newsletter of the National Evolutionary Synthesis Center, an NSF-funded collaborative research center operated by Duke University, the University of North Carolina at Chapel Hill, and North Carolina State University.

NEXT PROPOSAL DEADLINES:

April 1: short-term visitors

July 1: graduate fellowships, short-term visitors

July 10: sabbaticals, catalysis meetings, working groups

July 15: see page 2

For more information, see page 2 or visit **nescent.org/science/proposals.php**

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ABOUT NESCENT:

NESCent is a scientific research center dedicated to cross-disciplinary research in evolution. Funded by the National Science Foundation (award #EF-0905606), the center is a collaborative partnership between Duke University, the University of North Carolina at Chapel Hill, and North Carolina State University. For more information about research and training opportunities at NESCent, visit **www.nescent.org**.

SENIOR LEADERSHIP:

Allen Rodrigo, Director

Susan Alberts, Associate Director of Science and Synthesis

Todd Vision, Associate Director of Informatics

Brian Wiegmann, Associate Director of Education and Outreach

RESEARCH HIGHLIGHTS

Primates are more resilient than other animals to environmental ups and downs

Capuchin monkeys (*Cebus capucinus*) of Central and South America were one of seven groups of wild primates included in this study. Photograph by Fernando A. Campos ©

What sets mankind's closest relatives – monkeys, apes, and other primates – apart from other animals? According to a new study, one answer is that primates are less susceptible to the seasonal ups and downs – particularly rainfall – that take their toll on other animals. The findings may also help explain the evolutionary success of early humans, scientists say.

The study appeared online in the November 30 issue of American Naturalist.

"Wild animals deal with a world that's unpredictable from year to year," said study lead author Bill Morris, a biologist at Duke University. "The weather can change a lot; there can be years with plenty of food and years of famine," he explained.

To find out how well primates cope with this unpredictability compared with other animals, researchers working at the National Evolutionary Synthesis Center (NESCent) in Durham, N.C. analyzed decades of birth and survival data for seven species of wild primates: muriqui monkeys and capuchin monkeys in Central and South

see PRIMATES, p5

LETTER FROM THE DIRECTOR

Letter from the Director

One year ago, I took over from Kathleen Smith as Director of NESCent. NESCent was – and still is – in good shape: its science programs are running smoothly and we are seeing an increase in international participation and career-stage diversity amongst our participants; our informatics team is a powerhouse of activity, and they contribute significantly to the Center and the broader scientific community; and the Education and Outreach Group continues to inform (and, in the process, excite) teachers, students and the lay public about evolutionary science.

ALLEN RODRIGO
DIRECTOR

As part of the change in leadership, the past year also saw some attendant changes in emphasis: we are looking more closely at interdisciplinarity in our proposals, and we are identifying ways that the Center can foster international links. We have also developed a number of new initiatives that extend NESCent's mission beyond those developed in its first five years. We are pleased to launch the following new programs:

• As announced in our last newsletter, we are now adding graduate training to our portfolio by offering one-semester fellowships for graduate students. We currently have five Graduate Fellows in residence for all or part of the semester. These students are pursuing a range of research projects which involve integrating datasets, developing databases, performing analyses, or programming and software development, each in collaboration with NESCent sabbatical scholars or working groups. Learn more at **nescent.org/science/GraduateFellowships.php.**

• We are also launching a new program for journalists who wish to work on ambitious, exciting projects of their own choosing with an evolutionary focus. We issued our first call for proposals this fall, and expect to welcome our first journalists in the spring of 2011. For more information visit **nescent.org/science/Journalist-in-residence.php.**

• We are also introducing two targeted initiatives where we feel NESCent can help develop a synthetic approach to research and education. The first area that we have identified is astrobiology, origins of life and synthetic biology. Dr. Lynn Rothschild, of the NASA Ames Research Center, is collaborating with us to develop the program and plan our activities. The second targeted initiative is in evolutionary medicine and human evolution. We have already supported or are involved in a number of activities in this area, from evolution "minicamps" for medical practitioners and clinicians, to workshops for journalists who write about human evolution. We will also be releasing a call for proposals to develop curriculum materials in evolutionary medicine for pre-medical and medical students. We plan to sponsor additional activities around these themes in the coming years.

Please read on for exciting new plans for Darwin Day, upcoming proposal deadlines, and new course offerings in evolutionary biology. Stay tuned for these and other opportunities in 2011!

Allen Rodrigo, Director of NESCent

CALL FOR PROPOSALS

Call for proposals

Looking for support for a sabbatical, postdoc, or meeting? NESCent welcomes your proposals. We are looking to support innovative approaches to outstanding problems in evolutionary biology. In particular, proposals that have a clear interdisciplinary focus, or involve evolutionary concepts in non-traditional disciplines, are strongly encouraged, as are proposals that demonstrate international participation and a mix of senior and emerging researchers, including graduate students.

NESCent is now accepting applications for short-term visitors, graduate and sabbatical fellowships, and meetings. The next deadline for short-term visitors is April 1. For graduate fellowships, the next deadline is July 1. For sabbaticals, working groups, and catalysis meetings, the next deadline is July 10.

For more information, visit **nescent.org/science/proposals.php**

Job Openings

Interested in employment opportunities at NESCent? Our center runs with the help of a dynamic team of programmers, financial experts, event planners, and other specialists. To find out about job openings as they become available, **visit nescent.org/about/employment.php**

COMINGS & GOINGS

We were delighted to have a stellar group of scientists in residence at NESCent this fall. We wish those who will be leaving the best of luck in their next adventure, and look forward to bright things from those who remain.

From L to R: Tal Pupko, Peter Unmack, Luke Mahler, Jennifer Verdolin, Ryan Calsbeek, Matina Kalcounis-Rueppell, Paul Durst, Sarah Seiter, Armin Moczek, Dorothee Huchon and Weigang Qiu. Not shown: Nimrod Rubenstein, Jenny McGuire and Katia Koelle.

This fall also saw some changes in our staff. Please join us in saying hello and goodbye to the following people:

KAREN CRANSTON

Karen Cranston recently joined NESCent as our Training Coordinator and Bioinformatics Project Manager. If you are an instructor or student with the newly-lauched NESCent Academy (see related article in this issue), Karen will be helping you with course planning, logistics and informatics support. Karen will also ensure that visiting and resident scientists have the programming support they need, and that NESCent-funded data sets and software are publically accessible. She joins us from the Field Museum of Natural History in Chicago. She will not miss the winters.

KAREN HENRY

In sadder news, a significant loss will be the retirement of our Assistant Director of Administration, Karen Henry, at the end of this year. Karen has been with NESCent since it first started. She will leave a significant gap in terms of her institutional knowledge, and also as a friend and colleague. Thank you, Karen, for your years of service and dedication. It will be hard to imagine the center without you.

UPCOMING EVENTS

NESCent Academy launches four courses in 2011! Registration to open soon

You spoke...we listened. We asked you, the evolutionary biology community, to suggest course ideas, vote on your ideas, and submit proposals for post-graduate courses in evolution. From this process, we are excited to announce the following short courses for 2011:

• Evolutionary quantitative genetics

• Next-gen sequencing: data acquisition, comparative genomics, design and analysis for population genetics, systematics and development

• Phyloinformatics: linking in with online data and services

• Practical computing for biologists: co-sponsored by the Bioinformatics Research Center and Department of Genetics at North Carolina State University

If you are a grad student, postdoctoral fellow or junior faculty member, watch the NESCent website and Twitter feed as well as your favorite evolutionary biology news sources in early 2011 for course details and information about registration. Each course will be 1-2 weeks long, taught by experts in each of these fields, and will include lectures balanced by hands-on activities. If you have any questions about the NESCent Academy, please contact Karen Cranston, Training Coordinator and Bioinformatics Project Manager, at karen.cranston@nescent.org.

Are you a biologist at a minority-serving institution? Apply for a travel award to attend Evolution 2011 in Norman, OK

The National Evolutionary Synthesis Center and the Society for the Study of Evolution (SSE) are pleased to announce a travel award for faculty from Minority Serving Institutions (MSIs) to attend Evolution 2011, to be held in Norman, OK from June 17-21, 2011.

If you are a faculty member at an MSI, HBCU or other institution with significant enrollment of underrepresented minority students, you are encouraged to apply. Funds are available to cover conference registration, travel, food and lodging for up to three individuals.

To apply, fill out the online form at **http://bit.ly/ernVFo**. The application deadline is March 31st, 2011. Awards will be announced by April 8th, 2011. For more information, please contact Dr. Jory Weintraub at jory@nescent.org.

UPCOMING EVENTS

Darwin Day goes on the road

February 11-12, 2011

Every year on Feb. 12th, the world throws Charles Darwin a birthday party and celebrates the contributions he made to our understanding of evolution. These celebrations come in many forms: talks, seminars and symposia; public events at museums, zoos and national parks; screenings of documentaries and feature films; and trips to places like the Galapagos Islands and Down House, Darwin's home in the English countryside. NESCent has always celebrated Darwin Day by organizing events in the Research Triangle, NC area where we are located, but in 2011 we will be taking Darwin Day on the road.

This year, NESCent will be traveling to multiple locations around the country to share our scientists' expertise and enthusiasm for the study of evolution. The goals are to promote an awareness of, and appreciation for, evolutionary science, and to personalize it by bringing NESCent scientists in to classrooms and town halls, preferably in smaller communities not served by universities, museums, or other institutions.

Educators from around the country were recently invited to apply to be a stop on NESCent's "2011 Darwin Day Roadshow." We received 19 applications from eight different states, and ultimately selected four locations: two in Nebraska, one in Iowa, and one in Virginia. The educators at these schools will act as local hosts, helping us organize events in their classrooms and in the surrounding community. In return, they will receive a collection of books, videos, and other resources to enhance the teaching of evolution in their classroom.

Check the next edition of our newsletter for pictures and stories from these exciting events, and consider applying to be a stop on the "Darwin Day Roadshow" in 2012!

Join us for a Darwin Day walk and talk at the NC Botanical Garden

WHERE: North Carolina Botanical Garden, Chapel Hill

WHEN: Saturday, Feb. 12, 2-4 PM, ADMISSION: FREE

Please join us in celebration of the birthdays of Abraham Lincoln and Charles Darwin – both born on February 12, 1809. The North Carolina Botanical Garden will offer a "plant adaptations walk" through the Garden's display collections beginning at 2 pm, led by Associate Director for Conservation Johnny Randall. The walk will be followed by a short reception and presentation by NESCent scientist Rafael Rubio de Casas, who will speak on "What can Darwin teach us about plants in the 21st Century?" FREE and no need to register.

Undergraduates are invited to apply for a travel award to attend Evolution 2011 in Norman, Oklahoma

NESCent is again co-sponsoring travel awards for students who wish to attend the annual Evolution meeting. Thanks to a partnership with Scott Edwards (Harvard University) and Rich Kliman (Cedar Crest College), the program will provide travel fellowships for up to 25 undergraduates to attend this year's SSE/SSB/ASN meeting, to be held in Norman, Oklahoma on June 17-21, 2011. We are looking for talented and diverse undergraduates to attend and present their research. They will also participate in mentoring and professional development events and social activities, which will enable them to start building their network of evolutionary biology colleagues.

All expenses (travel, room, board, meeting registration) are covered. Students need not be members of underrepresented groups to apply. Those demonstrating a need for funds will be given preference, and will be selected so that as a group, they will maximize cultural diversity among undergraduates at the meetings. The application deadline is March 1st, 2011.

More information is available at **oeb.harvard.edu/faculty/edwards/community/application.html**

To apply, visit: **nescent.org/Evolution2011_application**

For additional questions, contact Dr. Jory Weintraub at jory@nescent.org.

RESEARCH HIGHLIGHTS

Researchers in ontology and taxonomy are invited to join a new Research Coordination Network

Researchers interested in searching and comparing phenotypes across species and in developing the tools and methods needed to make this possible are invited to participate in a newly-funded Research Coordination Network. The Phenotype Ontology RCN (**http://phenotypercn.org**) grew out of a NESCent workshop, and envisions building a broad base of community knowledge and resources to maximize the research potential of web-based data.

The representation of morphology, behavior and other phenotypic data using computational methods is still in its infancy. Integrating phenotypes with data across all levels of the biological hierarchy is possible, however, if standards are co-developed and coordinated.

Funding for participation in meetings, presentations and laboratory exchanges for students, postdocs and faculty from ontology and taxonomic domains is available at **http://phenotypercn.org/opportunities/.**

The organizers are eager to have you join! For further information please sign up for participant and mailing lists (**http://phenotypercn.org/participants/add/**), or contact one of the PIs: Paula Mabee, pmabee@usd.edu; Andy Deans, andy_deans@ncsu.edu; Eva Huala, huala@acoma.stanford.edu; and Suzanna Lewis, selewis@lbl.gov.

PRIMATES, continued

and South America, yellow baboons, blue monkeys, chimpanzees and gorillas in Africa, and sifakas (lemurs) in Madagascar.

Collecting this data was no small effort. Nearly every day for more than 25 years, seven research teams working around the world have monitored the births, lives, and deaths of thousands of individual primates.

Thanks to a new database developed at NESCent, the scientists were able to pool their painstakingly-collected data and look for similarities across species.

When they compared year-to-year fluctuations in primate survival to similar data for other animals – namely, two dozen species of birds, reptiles, and mammals – they found that primate survival remained more stable despite seasonal variation in rainfall.

"Primates appear to be well buffered against fluctuations in weather and food availability relative to a lot of other animals," said co-author Susan Alberts, a biologist at Duke University and associate director at NESCent.


© Michael Wilson

The findings are based on data from several long-term studies of primates in the wild, including chimpanzees in Tanzania. Photo courtesy of Dr. Anne Pusey.

> "Primates appear to be well buffered against fluctuations in weather and food availability relative to a lot of other animals."
>
> –Susan Alberts, Associate Director at NESCent

A number of traits may help shield primates from seasonal ups and downs. "For one thing, they're social," said co-author Karen Strier, an anthropologist at the University of Wisconsin-Madison. Primates live in groups and share information with each other, so they're better able to find food and water in times of scarcity, Strier explained.

Primates also owe their adaptability to broad, flexible diets that enable them to adjust to seasonal shortages of their favorite foods. "Primates will eat leaves, grasses, fruits, flowers, bark, and seeds. They're generalists," said Alberts.

In the distant past, similar traits may have also buffered other primates – namely, humans – against environmental ebbs and flows, scientists say. "Modern humans have all the same traits these primate species have: we're smart, we have social networks, and we have a broad diet," Morris said. "Modern humans also arose during a period when Africa's climate was changing," he added. "So the same traits that allow non-human primates to deal with unpredictable environments today may have contributed to the success of early humans as well."

If primates are good at coping with environmental ups and downs, then why are so many of them now endangered? Despite being well buffered from changing weather, human activities still take their toll, the scientists say. With nearly half of the world's primates now in danger of becoming extinct due to hunting and habitat loss, continued monitoring will be key, Strier added.

"Everything we can learn about them now will help prevent their extinction in the future."

CITATION: Morris, W., J. Altmann, et al. (2010). "Low demographic variability in wild primate populations: fitness impacts of variation, covariation, and serial correlation in vital rates." American Naturalist 177: http://www.journals.uchicago.edu/doi/full/10.1086/657443.

RESEARCH HIGHLIGHTS

Bring cutting-edge molecular evolution research to your classroom

Videos, classroom activities, and other educational materials from the evolution symposium at the annual meeting of the National Association of Biology Teachers (NABT) are now available. This year's symposium, entitled "Molecular Insights into Classic Examples of Evolution", featured talks by Butch Brodie (Univ. of Virginia), Sean Carroll (Univ. of Wisconsin/HHMI), Hopi Hoekstra (Harvard University) and NESCent Director Allen Rodrigo. Watch video presentations about the toxin arms race between garter snakes and their prey, the genetics of wing coloration in Drosophila, the molecular mechanisms of coat color in beach mice, and the value of studies in viral evolution.

Videos are available at **www.nescent.org/media/NABTSymposium2010.php**. You will also find a collection of free classroom resources, lab activities, and other teaching ideas in a companion website at **www.nescent.org/media/NABT2010/index.html.**

NEW AWARDS

Congratulations to the newest award recipients for 2010

NESCent is pleased to announce the following new awards:

SHORT-TERM VISITORS

Ryan Calsbeek *(Dartmouth University)*
The adaptive landscape in evolutionary biology | November – December 2010; February 2011

Louise Comas (University of California, Berkeley)
Character evolution in root systems of woody plants | December 6-17, 2010

Diddahally Govindaraju (Brigham and Women's Hospital)
Signatures of multilevel selection in human health | March – May 2011

Yi Mao (University of Tennessee, Knoxville)*Identifying positively selected amino acid residues in HIV-1 envelope proteins: a dynamic simulation approach | November 3 -23, 2010*

Olav Rueppell (University of North Carolina, Greensboro)
The influence of genetic architecture on the effect of sex and recombination on genotypic offspring diversity | January – March 2011

CATALYSIS MEETINGS

Richard Madden (Duke University School of Medicine), **Caroline Stromberg**(University of Washington), **Matthew Kohn** (Boise State University)
Earth surface processes in the evolution of mammalian tooth shape | April 2011

Margaret McFall Ngai (University of Wisconsin, Madison) and **Michael Hadfield** (University of Hawaii)
The origin and evolution of animal-microbe interactions | October 24-27, 2011

W. Kelley Thomas (University of New Hampshire) and **Holly Bik** (University of New Hampshire)
High-throughput biodiversity research using eukaryotic metagenetics | June 24-27, 2011

WORKING GROUPS

Will Cornwell (University of California, Berkeley), Stephen Smith (Brown University), and Amy Zanne (University of Missouri, St. Louis)
Tempo and mode of plant trait evolution: synthesizing data from extant and extinct taxa | November 2010 - October 2012

Michael Gavin (Victoria University of Wellington)
Modeling the diversification of human languages | November 2010 - October 2012

Paul Harnik (Stanford University), Rowan Lockwood (College of William and Mary) and Seth Finnegan (California Institute of Technology)
Determinants of extinction in ancient and modern seas | November 2010 - October 2012

Daniel Ksepka (North Carolina State University) and James Parham (Alabama Museum of Natural History, University of Alabama)
Synthesizing and databasing fossil calibrations: divergence dating and beyond | November 2010 - October 2012

Colin Osborne (University of Sheffield), Caroline Stromberg (University of Washington), and **Christopher Still** (University of California, Santa Barbara)
Origins of C4 grasslands: a new synthesis of phylogeny, ecology and paleobiology | November 2010 - October 2012

Rebecca Price (University of Washington, Bothell) and **Kathryn Perez** (University of Wisconsin, La Crosse)
Evoci toolkit: concept inventories to assess conceptual understanding of evolutio | November 2010 - October 2012

Dustin Rubenstein (Columbia University), Eileen Lacey (University of California, Berkeley), **Nancy Solomon** (Miami University), and **Steven Phelps** (University of Texas, Arlington)
Integrative models of vertebrate sociality: evolution, mechanism and emergent properties | November 2010 - October 2012

SABBATICAL SCHOLARS

Weigang Qiu (Hunter College, City University of New York)
Bioinformatics: building a novel and effective career path to evolutionary biology | October 2010 - June 2011

For more information about these scholars and their research projects, please visit http://www.nescent.org/science/awards.php.

IN THE MEDIA

"Planet of the apes...and monkeys and humans" (TIME Magazine) What sets mankind's closest relatives – monkeys, apes, and other primates – apart from other animals? According to a new study, one answer is that primates are less susceptible to seasonal ups and downs. Read the full story on page 1, or in TIME Magazine at **http://bit.ly/gYdkMD.**

"Climate changes, and there goes the neighborhood" (ScienceNews) If past is prologue, some California voles may have a hard time keeping pace with current climate change. NESCent paleontologist Jenny McGuire tells the full story in Science News at **http://bit.ly/aCCtxJ.**

"Where the building blocks delivered?" (Duke University News Office) Are we alone in the universe? Life on Earth can provide clues to where to search for life in outer space, says NASA's Lynn Rothschild. Read about NESCent's plans to get into the astrobiology business at **http://bit.ly/ajorwH.**

"Single parenthood doesn't pay off for plants" (Eurekalert) Plants that can pollinate themselves are more likely to go extinct, says a new study of the nightshade plant family. NESCent postdoctoral fellow Stephen Smith and co-authors tell the full story in the journal Science. Read more at **http://bit.ly/dvUq3T.**

"The worms within" (Scientific American) Some of the worms and germs we've been warding off may actually keep us well, said immunologist William Parker in a recent NESCent Director's seminar. One solution, Parker and other scientists say, is to welcome them back. Read the full story in the December blog column of Scientific American **http://bit.ly/f13WhL**.

Top 5 reasons why you should publish your data

When you publish your research, do you also publish the data behind it? A digital repository known as Dryad (**datadryad.org**) enables authors publishing in the basic and applied biosciences to deposit and publish their data. Data archiving allows authors to preserve, share, and re-use research data. Advantages of depositing your data in Dryad include:

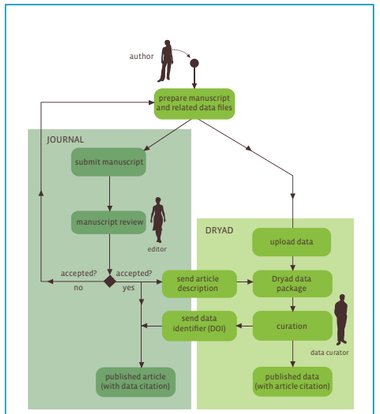

Image based on Lowry, R., E. Urban, and P. Pissierssens (2009), A New Approach to Data Publication in Ocean Sciences, Eos Trans. AGU, 90(50), doi:10.1029/2009EO501004.

VISIBILITY

Making your data available online (and linking it to the article) provides a new pathway for others to learn about your work through topical searches. Studies have found a significant correlation between the availability of a dataset/publication and its citation rank. For more information see: Piwowar, H., et al. (2007). Sharing detailed research data is associated with increased citation rate. PloS One 2 (3): e308.

CITABILITY

All data you deposit will receive a persistent, resolvable identifier (a DOI, or digital object identifier) that can be used in a citation, as well as listed on your CV. When you re-use data, or when others use your data, it can be cited the same way an article would be.

WORKLOAD REDUCTION

No more hunting around on old hard drives! If you receive individual requests for data, you can simply direct them to the items in Dryad.

PRESERVATION

Your data files will be permanently and safely archived in perpetuity. Dryad will keep the files intact and migrate them to new formats as old formats become obsolete; no more worrying about whether Excel 2003 files will open in Excel 2023.

IMPACT

Not only will you garner citations through the reuse of your data, but you can also monitor the use of your data through Dryad's usage statistics. Both view and download stats are available for each data file in the repository.

How do I submit my data? Data submission is easy. A short 2-minute video on how to submit your data is available at **www.scivee.tv/node/26563**.

Where can I get more information? For more information, visit the Dryad website (www.datadryad.org/), the Dryad team wiki (www.nescent.org/wg_dryad/Main_Page), or read the Dryad blog (blog.datadryad.org/). You can also follow Dryad on Facebook, or on Twitter at twitter.com/datadryad. If you have additional questions you can subscribe to the Dryad users list (list.datadryad.org/) or contact the Dryad team at help@datadryad.org.

Dryad is being developed by the National Evolutionary Synthesis Center and the University of North Carolina Metadata Research Center, in coordination with a large group of journals and societies.

Recent publications by NESCent authors

Auld, J. and A. Charmantier (2011). "Life history of breeding partners alters age-related changes of reproductive traits in a natural population of blue tits." Oikos. In press.

Bigham, A., M. Bauchet, et al. (2010). "Identifying signatures of natural selection in Tibetan and Andean populations using dense genome scan data." PLoS Genetics 6(9): e1001116.

Cohen, O., H. Ashkenazy, et al. (2010). "GLOOME: Gain Loss Mapping Engine." Bioinformatics 26(22): 2914-5.

Cohen, O., U. Gophna, et al. (2011). "The complexity hypothesis revisited: connectivity rather than function constitutes a barrier to horizontal gene transfer." Molecular Biology and Evolution. In press.

Escobar, J., J. Auld, et al. (2010). "Patterns of mating system evolution in hermaphroditic animals: correlations among selfing rate, inbreeding depression, and the timing of reproduction." Evolution. In press.

Goldberg, E., J. Kohn, et al. (2010). "Species selection maintains self-incompatibility." Science 330(6003): 493 - 495. Data available in Dryad Digital Repository. doi:10.5061/dryad.1888.

Ingram, T. (2010). "Speciation along a depth gradient in a marine adaptive speciation." Proceedings of the Royal Society B. doi: 10.1098/rspb.2010.1127.

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Lajeunesse, M. (2010). "Achieving synthesis with meta-analysis by combining and comparing all available studies." Ecology 91(9): 2561-2564.

Morris, W., J. Altmann, et al. (2010). "Low demographic variability in wild primate populations: fitness impacts of variation, covariation, and serial correlation in vital rates." American Naturalist 177: doi: 10.1086/657443. Data available in Dryad Digital Repository doi:10.5061/dryad.1985.

Olsson, L. (2010). "Evolutionary developmental biology: its concepts and history with a focus on Russian and German contributions." Naturwissenschaften 91(11): 951-969.

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Revell, L. (2010). "Phylogenetic signal and linear regression on species data." Methods in Ecology and Evolution 1: 319-329.

Schmidt, J., M. Schuff, et al. (2010). "A role for FoxN3 in the development of cranial cartilages and muscles in Xenopus laevis (Amphibia: Anura: Pipidae) with special emphasis on the novel rostral cartilages." Journal of Anatomy doi: 10.1111/j.1469-7580.2010.01315.x.

Stearns, S., S. Byars, et al. (2010). "Measuring selection in contemporary human populations." Nature Reviews Genetics 11: 611-622. doi: 610.1038/nrg2831.

Szitenberg, A., C. Rot, et al. (2010). "Diversity of sponge mitochondrial introns revealed by cox 1 sequences of Tetillidae." BMC Evolutionary Biology 10:288. doi: 10.1186/1471-2148-10-288.

White, H. (2010). "Considering personal organization: metadata practices of scientists." Journal of Library Metadata 10(2/3). doi: 10.1080/19386389.19382010.19506396.

Stay Informed

Subscribe to the NESCent quarterly newsletter to receive news about the Center, research and training opportunities, and upcoming events. Comments, story ideas and photo contributions are welcome. Please send corrections and suggestions for future newsletters to **Robin Smith at rsmith@nescent.org**

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