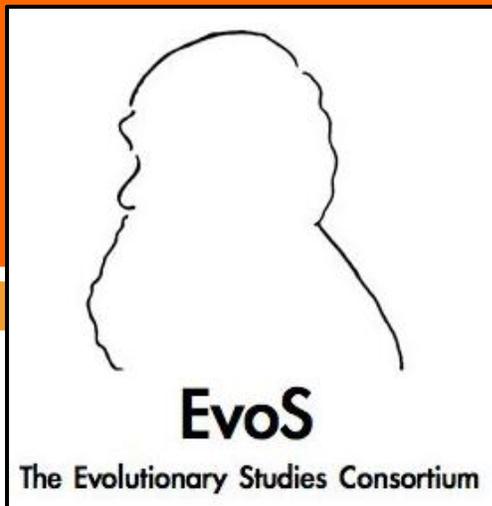


EvoS Illuminate

Newsletter of the EvoS Consortium



November 2013

What's New in EvoS?

Special Issue of EvoS Journal

EvoS Journal is planning a special issue, edited by Glenn Geher, dedicated to the content of the EvoS Summit, which took place at SUNY New Paltz in October of 2012. It will include pieces by Gordon Gallup, David Sloan Wilson, Paul Bingham, Joanne Souza, and more! It will be released early in Spring 2014. Look out for it!

For students and faculty, note that *EvoS Journal* publishes scholarly works that address issues of evolution related to higher education - along with high-caliber undergraduate student papers that explicate evolution-based scholarship across disciplines. Also, if you have a project that incorporates evolutionary theory with one of the Humanities, please consider submitting it to *EvoS Journal* at <http://evostudies.org/submissions.html>. Fiction, poetry, and other relevant works are welcome too.

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TEMing up EvoS: Incorporating Technology, Engineering, and Mathematics into our EvoS Curriculum

By: Hadassah Head

Twitter: @Haddie

Binghamton University EvoS Coordinator & Watson School of Engineering and Applied Science Alum

"The mission of EvoS is to advance the study of evolution in all its manifestations, including all aspects of humanity in addition to the biological sciences" AND TECHNOLOGY, ENGINEERING, and MATH.

Over the last year, EvoS at Binghamton University has expanded its efforts to engage engineering students and incorporate the full STEM potential of EvoS. As part of our outreach efforts, we have expanded our number of engineering and computation relevant speakers, aggressively pursued engineering student groups as co-sponsors, reconnected with EvoS TEM faculty, and started presenting to the ENTIRE undergraduate engineering student body. Next we will be working with the engineering advisors to broaden awareness of the certificate and explain its requirements and benefits.

Among the array of technology and engineering and math speakers we've hosted, the most notable has been Hod Lipson, an Associate professor of Mechanical and Aerospace Engineering and Computing and Information Science. He is well known to the general public for his [TED talk](#) on evolving robots. His EvoS talk is titled "[Accelerating Discovery: Distilling Natural Laws from Experimental Data, from physics to biology.](#)"



Hod Lipson presenting at BU



Graduate Student Lunch with Nina Fefferman.

Students pictured here come from Anthropology, Biology, Computer Science, Mathematics and Systems Science & Industrial Engineering Departments.

This semester we brought Nina Fefferman from Rutgers University, a biologist, mathematician, and an active member of the Center for Discrete Mathematics and Theoretical Computer Science (DIMACS) and the Dept of Homeland Security Center of Excellence CCICADA. Her talk drew co-sponsorships from Collective Dynamics of Complex Systems (CoCo) Research Group, the Undergraduate Math Club, Upsilon Pi Epsilon (computing and information honor society), and Pi Mu Epsilon (math honors society). Her talk is titled "[Evolutionary pressures, Infectious Diseases, and Self-Organizing Social Systems.](#)"

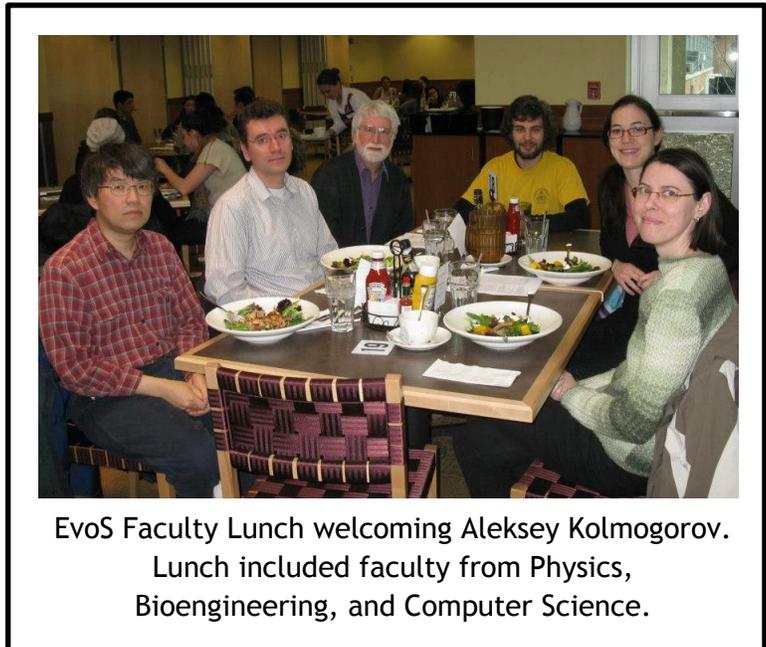
We recently brought Patrick Roos, a researcher currently completing a post-doc in Computer Science at University of

Maryland under Distinguished Psychology Professor Michele Gelfand. His visit attracted co-sponsorship from both the Binghamton Bioengineers and Upsilon Pi Epsilon.

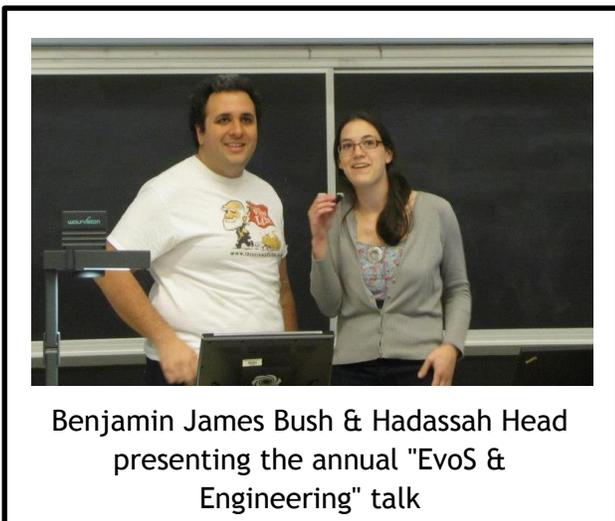
We are also doing more to work with and highlight internal experts. We had David Schaffer, Visiting Research Professor of Bioengineering, give an [introduction to evolutionary computation](#). He has an extensive background of using evolutionary computation in industry for Philips Corporation. His talk set the backdrop for two upcoming speakers including his graduate student Arnab Roy who will be giving the semesterly EvoS graduate student talk. He will be speaking on "[Evolving Spiking Neural Network Sensors to Characterize the Alcoholic Brain](#)." Prof. Schaffer's talk also prepares EvoS seminar attendees for a spring semester talk by Prof. Alexey Kolmogorov titled "Search for Stable Crystal Structures with an Evolutionary Algorithm: Prediction and Discovery of a New Superconductor." Prof. Kolmogorov's work has been catching a lot of [public press](#) for his superconductor work since he came to Binghamton after completing a Post-Doc at Oxford University.

At Binghamton University there is a mandatory engineering course taken by Watson freshman where they learn about engineering relevant opportunities on campus. This includes all of the engineering departments and now EvoS! [Benjamin James Bush](#), Ph.D. Candidate in Systems Science and EvoS graduate certificate holder, has given the now annual "EvoS and Engineering" talk two years going. Benjamin is a fantastic presenter and many students came to chat with us after the talk.

Many schools and grants are putting an emphasis on STEM education. Biological evolution has consistently fallen into the "science" category but with EvoS we have the opportunity to associate evolutionary studies with every letter in the acronym in addition to social science and humanities as we originally formed to do.



EvoS Faculty Lunch welcoming Aleksey Kolmogorov.
Lunch included faculty from Physics,
Bioengineering, and Computer Science.



Benjamin James Bush & Hadassah Head
presenting the annual "EvoS &
Engineering" talk



Freshman engineering students

Creating an EvoS Student Community - Moving Beyond the Classroom

By: Rafael Schulman

In the 10 years since its birth, EvoS at Binghamton has created a wealth of academic offerings across disciplines, bringing Evolutionary Studies into the classroom in nearly all departments and majors. At the same time, EvoS has worked to maintain a high standard for Evolution taught in many of its more traditional senses, offering seminars and courses in biology, psychology and social sciences that present the most current research and progressive schools of thought. The continued expansion of educational programming on campus, in both breadth and depth, has been essential to cultivating student interest on campus. The next step is to take this student interest and turn it into a student community, an environment for discussion, conversation, and social learning.

The Evolutionary Studies Student Organization recently received its charter from the Binghamton Student Association, making us an official student group. However, this formalized step only sets the

stage to create the undergraduate community for like-minded students to gather, communicate, and advance the Evolutionary Perspective. To achieve this goal, there are several courses of action we plan to take in the coming months. Once the community has hit a critical mass of active, engaged, individuals, we believe that it can be a self-sustaining organization that plays an integral social role alongside the academic wing of EvoS.

First of all, we are organizing events that serve the students currently enrolled in the EvoS program. This includes peer-to-peer advising for class enrollment, review sessions around finals time, and currently in the works, a tutoring service for EvoS classes. All of these initiatives, while appealing to the needs of the student, will also build relationships and connections within the EvoS student body.

Central to our plans in the EvoS social community is a goal to break down the barriers between undergraduates and graduate students. Although often intimidated by graduate students, undergrads would benefit immensely from an open forum. Grad students can offer mentorship, guidance, and advice from a perspective that many undergraduates have never heard. By teaming up with the EvoS GSO (Graduate Student Organization) to organize a series of joint events and social gatherings, we expect to bridge this gap.

In addition, we want to engage the EvoS participants with passions in other areas. To do this, we have begun to collaborate for events with other student groups. Notably, these include an event on Evolutionary Psychology with the Student Psychological Association, a panel on Cultural Evolution with various cultural groups on campus, and we are in early



Members of Binghamton's Evolutionary
Studies Student organization

stages of planning a discussion on the fitness of different governmental models with various political groups on campus. Not only will these events provide relevant student activities for those enrolled in EvoS, but they will also spread the word about Evolutionary Studies throughout campus.

The ultimate goal is to create a dynamic body of active members in a social EvoS community, with Evolutionary Studies

at Binghamton reaching far outside the classroom. With friendships and bonds formed around EvoS, Evolutionary Theory can be the subject of lunchtime conversation and dorm room debates. Alongside the excellent ongoing work to develop the formal education of Evolutionary Studies, the Student Organization sees it as our duty to cultivate a student culture based around EvoS.

Building a Bridge to Madagascar: The Start of an EvoS-COIL Collaboration

By: Dustin Eirdosh with Dr. Rebecca Burch

Just over one year ago, in the most improbable of locations in the semi-arid southwestern corner of the island nation of Madagascar, a fledgling EvoS program was born within the Educational Psychology program of the University of Toliara. As the US-citizen visiting director of this program, I supported our first and second year undergrads plod our way through an adapted version of David Sloan Wilson's *Evolution for Everyone* core-course last winter. With no computers or library to speak of, a massive hurricane, and other indescribable forms of corruption working against a productive learning environment - it's been a lonely road for us. Then, in late May, I trekked back to my home turf in Pennsylvania and attended the NorthEastern Evolutionary Psychology Society (NEEPS) 2013 Annual Conference. I presented our work and our challenges in cultivating this first African-nation University member of the consortium to a warm reception, but was unprepared for the support network I was about to walk into. Over lunch with Glenn Geher, Rose Sokol-Chang, and Rebecca Burch, we began to think about how perhaps Dr. Burch's students could connect and learn *with* my students. Someone at the table floated an acronym "COIL" they said - "Collaborative Online International Leadership;" it's an innovative new program aiming to connect all SUNY Campuses (just like EvoS), and using a cutting edge model of learning (just live EvoS). It seemed like this was a place to start.

I got in touch with COIL Coordinator, Sarah Guth, and learned more about their model - in which courses are developed that have both on-line and in-class components in both a SUNY institution, and an international partner institution.

In September, Dr. Burch's Human Development course began, and mixed



Students at the University of Toliara learning how to build a website for online and hybrid learning. Adapted versions of EvoS curriculum are being developed that emphasize the application of evolutionary studies in an undergraduate high school teacher training program.

among the course resources were introductory materials we co-developed to convey the theory and practice behind our work in Madagascar. This COIL course was also unique in that the information on Madagascar was not just open to the students enrolled in the class, but every student in the Hart Global Living and Learning Center; a residence hall that also houses an academic program on global issues. As a result, students from all different majors and many different countries were able to brainstorm about collaborating with and assisting Toliara students. So far, students have explored sustainable technologies and energy sources for Toliara, French and English language mentoring programs, models for donation collection and transport (including computers), and other study abroad and exchange programs. All of these ideas were showcased at the Hart Global Awareness Conference in November. As a result, even more students have voiced their enthusiasm for traveling to Toliara. The next step is establishing that program with Oswego's Office of International Education and Programs. A number of students are considering making that first visit this summer, for the EvoS Summer Session.

While we do not have a full COIL program active yet in the sense of a single collaborative class, we are moving in that direction. Stony Brook Professors Paul Bingham and Joanne Souza have recently offered their support in allowing the Madagascar program to connect with their existing online course "The Biology of Being Human," based on their book "Death from a Distance and the Birth of a Humane Universe." This combined with other EvoS curriculum will form a backbone of our Summer Session, which all EvoS students are encouraged to apply for (details forthcoming in early 2014, or contact Dustin@UniToliara.info)

Spotlight on Members of the EvoS Consortium

Rose's Post-EvoS-NSF-Grant Involvement

By: Rosemarie Chang



First, of course, no one involved with the EvoS Consortium or an EvoS program really stops being involved, and I have kept up with the Consortium since my

official departure as coordinator and Editor of *EvoS Journal*. For example, I gave an EvoS Seminar talk at SUNY New Paltz in the Spring of 2012 (<http://mediasite.suny.edu/mediasite/SilverlightPlayer/Default.aspx?peid=955ec52c4a22404f8502a1559db40a511d>).

That said, I did have many shifts starting in 2012. In the summer, I began working in the American Psychological Association Journals Program as a Managing Director of the Educational Publishing Foundation (EPF). This position draws upon my passion for editing both with *EvoS Journal* and *Journal of Social, Evolutionary, and Cultural Psychology*, but even more so my passion for creating and sustaining scholarly journals in psychology and the social sciences. As a Managing Director, I oversee a subset of the journals

in the EPF program, which is the APA Journals imprint that houses the journals for which we have society publishing partners, but also all of the specialty titles within the journals program. I am primarily responsible for 18 titles (currently) spanning topics within social psychology (e.g. *Group Dynamics*), clinical psychology (e.g. *Clinical Practice in Pediatric Psychology*), multidisciplinary psychology (e.g. *Psychology of Violence*), and soon *Evolutionary Behavioral Sciences* as NEEPS' own *Journal of Social, Evolutionary, and Cultural Psychology* will be known when APA begins publishing it in 2014.

I am overseeing 5 new titles over 2014-2015, all of which I am looking forward to seeing in print. The 2015 titles particularly mesh with my previous experience and interests. *Translational Issues in Psychological Science* is co-sponsored by the American Psychological Association of Graduate Students (APAGS) and has a focus on translating psychological research for real-world and cross-disciplinary application, but also has the goal of serving as a mentoring outlet for the peer-review process. Advanced graduate students serve as reviewers and Associate Editors for the journal; this is clearly of interest to me based on the model of *EvoS Journal*.

The other 2015 title, *Scholarship of Teaching and Learning*, relates to my past life working in pedagogy. The journal will focus on applying the theory behind

teaching and learning in ways that can be easily implemented in the psychology classroom. SoTL work from other disciplines will be included in the journal as they apply specifically to psychology.

Outside of this work, I have been actively involved with the Feminist Evolutionary Psychology Society. We have a special section, Letters on the Intersection of Feminism and Evolutionary Psychology, being published in the December issue of *JSEC*. There are some great communities, books, and talks being built along similar lines that I have been excited to see, and sometimes be part of, including: Maryanne Fisher's upcoming Edited volume *The Oxford Handbook of Women and Competition*; Gap Junction Science (<http://gapjunctionscience.org/>) which is a community forum and blog created by Sari van Anders; and of course the book I co-edited with Maryanne Fisher and Justin Garcia, *Evolution's Empress: Darwinian Perspectives on the Nature of Women*.

In my personal life, my family has relocated to Bethesda Maryland right by NIH and lots of good running and biking trails, both of which we take advantage of. Enso, NEEPS mascot and my son, is 5-years-old and as he says a "scientist in training." That is when he isn't being Batman or Peter Pan. Tom (husband) is a Pediatric Rehabilitation doc at Children's National Medical Center in DC. Whenever we can we get in a 5K, and ran the Cherry Blossom 10-miler with Glenn Geher in Spring 2013.

An Interview with Dr. Christopher Lynn



Christopher Lynn is a professor in the Anthropology Department at the University of Alabama

Could you tell us a little about your interest in evolution? How did it start? How has it shaped your research throughout your career?

That's a good question. I think like a lot of our students, I didn't have much background in evolutionary theory growing up or in elementary or secondary school. However, I have open-minded parents who fostered a cynicism/skepticism in me that rendered religious explanations unpalatable for the most part. The turning point or epiphany that I do recall is when I was a freshman in high school & was assigned to read *Inherit the Wind*. That book blew me away, & all questioning or ambivalence in me was essentially washed away. I have bought the evolution package ever since, though I vacillate on the question of atheism/agnosticism. Not that you're asking, but since I study religion I think about this a lot, & consider myself an

agnostic.

Evolution is one theoretical approach I use in my research. It's one that I gravitate strongly toward because I am compelled by the "why?" of everything & was asking "why?" before I knew it was an evolutionary question. In fact, the "why?" I was asking as an undergrad pushed me toward applying (& being accepted) to an evolutionary anthropology program at Rutgers for grad school before I even realized that it was a biological anthropology program. I had no biological anthropology training as an undergraduate whatsoever, but look at me now—I am a biocultural anthropologist. But I also have a strong draw toward culture, so I am equally guided by proximal, cultural & psychological considerations as well. I could say that since I took such a major role in starting the EvoS program at Alabama, evolution has taken an even more central role in my research because I feel I need to demonstrate for students how evolution can be applied to any research program. And because I host so many evolution speakers as part of our ALLELE program, I am constantly exposed to so many stimulating evolutionary models that I can integrate with my own research. I feel like I might be less evolution-oriented were it not for this program, but then again, I seem continually to be drawn to the "why," & it's no accident that I chose to start this program & not some other one, so it was probably a foregone conclusion.'

I also consider the training I received in Gordon Gallup's evolutionary psychology lab to have profoundly influenced my research outlooks, even though that was an unofficial, voluntary aspect of my graduate training (I did that on my own time, outside of my biological anthropology

training). And for that matter, the mere one month I spent at Rutgers (I dropped out because of funding issues & ultimately transferred to SUNY Albany after a few other stutter steps) utterly transformed my research consciousness as well. I went there to study self-deception with Bob Trivers & have continued that research, recently placing a first publication on that research in the newly renamed Behavioral Evolutionary Sciences journal. It was in that one month that I was turned on to signaling theory by my adviser Lee Cronk, which has become a big part of my research focus now.

Tell us a little about your EvoS blog.

My EvoS blog is entitled “Trances, Tattoos, Religion, & Sex: Cheap Thrills thru Evolution” or something like that (please look it up to get it right for me). The subtitle is the real gist of it. I think it’s important to communicate about science in a way that gets the attention of the masses. I’m interested in communicating with colleagues AND the public at large. And not just like most science writers—notice I didn’t say the “educated public.” Before I went back to school, I played in punk rock bands & our ethos was anti-intellectual. It was basically about getting drunk & having sex—real banal stuff. We were trying to be “complete humans” (not that we ever sat down & talked about this) by having a well-rounded experience of being really smart intellectual people who enjoyed & could appreciate the low-brow, base culture. That’s my personality, & I want that to continue to come thru in the blog. I don’t do a lot of those “base” things that I did when I was younger anymore—it’s all I can do to keep up with being a dad & academic, in that order—but that part of my life is hugely important to me, & it’s equally important that it be integrated with my life now & not replaced by it. And

by studying evolution & talking about evolution, we can actually analyze that part of our life. In fact, I think intellectuals underestimate the salience of sexual strategies theory, for instance, because many of them don’t fall exactly into those stereotypes. But those stereotypes are more obvious out there in other realms of life, where people hanging out in bars really are just trying to get laid, a lot. So anyway, the blog is about pop culture-y applications of evolution.

It’s also a web log. After I started it, I found it difficult to come up with something substantive to write about very often, but I really wanted to write creatively more often. A few months after I started the blog (after having been asked to by Rose over two years earlier), I came across John Hawks blog called John Hawks weblog. He uses his blog as a log, as a way to quickly interpret ideas or articles he’s stumbled upon & to categorize & tag them for organizational purposes for later use. 90% of what he blogs about does not end up in his publications, he says, but 10% does & it’s much easier to find that way. So I started his approach & found my creativity exploding. Giving myself to permission to write in a public forum as a way to essentially pre-digest sources for later use just opened up a huge well as writing that I had been wanting to do but that had been stymied since I’d started scientific writing. See, when I was younger, I wanted to be a writer, but I lacked imagination. I returned to college after realizing I wasn’t going to make it as a fiction writer, but I knew I could turn a good phrase. However, science writing was killing the joy for me. Once I started blogging ala Hawks, however, I couldn’t stop. I write so much more now, & it’s increased my scientific production tremendously as well. I think I cranked out 5 new manuscripts last year, as opposed to the 2/year rate I was doing previously, in

addition to a shit-ton of blog posts.

Additionally, since realizing the benefit of blogging on my overall workflow, I started the Anthropology Blog Network for my department & blog there as well.

Tell us about the EvoS program at the University of Alabama.

The EvoS program at UA grew out of the Evolution Working Group (EVOWOG). EVOWOG was started 8 years ago by Ed Stephenson & Leslie Rissler in UA's Bio Dept. & David Boles in Psychology. I joined 4ish years ago when I arrived. When I was a grad student at SUNY Albany, as mentioned, I was part of the Gallup lab & was there when Glenn put out the word for people to help with the first NEEPS conference. Since I actually lived right outside of New Paltz at the time (we owned a house in Rifton, & my wife is from Poughkeepsie & her family currently lives in Clintondale), I jumped on the opportunity. I was the program coordinator for that first conference. Then I started doing lecturer work at various places. Julian Keenan hooked me up with a few gigs teaching Physiological Psychology, I was teaching Cultural Anthropology at New Paltz, & I taught a few anthro courses at Marist, in addition to TAing & teaching another course at Albany. In the course of that, Glenn asked me to join the New Paltz EvoS executive committee, & I was the idiot who suggested inviting Lionel Tiger for the first Darwin Day talk, because of my time with him at Rutgers. I believe Glenn has a publication outlining that disaster in the EvoS Journal. So when I arrived at Alabama, I had been involved with the EvoS programs & wanted to start something. The fact that EVOWOG was already active & had been running an evolution speaker series made it easy.

Leslie Rissler & I largely coordinated the

effort. We had some snags here & there, which are outlined in an article I co-authored with Kristina Spaulding & Becky Burch for an upcoming EvoS Journal issue, but after organizing a few special courses to hold the minor together, it sailed thru the approval process relatively easily. As the article mentions, the things that have made it so easy down here, contrary to what many people would have thought, is that there was already a group established willing to help out & support the initiative, my home dept. (anthro) is AWESOMELY supportive (I cannot say enough about that & a truly supportive chair), & Alabama truly sucks so bad at K-12 education that it's a no-brainer for even the most fundamentalist creationist that something should be done about it (it would be like me arriving in a corner of the U.S. & finding absolutely no churches—in fact, Tuscaloosa could use a Buddhist temple, just because I think all kinds of diversity is important for obvious Darwinian reasons).

The program is outlined on our website: www.as.ua.edu/evolutionarystudies <<http://www.as.ua.edu/evolutionarystudies>>

The students are awesome, & the program is thriving. We consistently have around 20 students in the minor & have a club as well that is open to all students, minor or not. After being inspired by the efforts of the New Paltz students at the EvoS Summit last year, I went back & determined to get our students more involved at a fundamental & ambitious level. Since then, they have hosted a first annual Darwin Day Colloquium & will be expanding it this coming year to be a week-long event, in conjunction with the UA Secular Humanist Alliance & Mallet Assembly (a liberal living-learning community). They will also be inviting k-12 students to participate as part of a poster session, which is part of the outreach effort to directly ameliorate those horrendous

evoliteracy standards we have. And a couple of them have had a piece accepted for publication in the EvoS Journal, so I'm super proud of their initiative & efforts.

What do you think are the primary benefits for students from being part of an EvoS program?

The students get exposed to evolutionary applications in ways they never imagined thru our speaker series & by getting forced to think thru the operations of conducting research if they are minors. For instance, one student vacillated between law & evolution/anthropology. One satisfied her desire for an actual income & stability, the other her intellectual interests. Meeting & talking to National Center for Science Director Eugenie Scott opened her eyes to the need for lawyers who could advocate for & represent educators persecuted for teaching or trying to teach evolution. On another occasion, students had the opportunity to sit with E.O. Wilson, who

encouraged their interests in studying evolution & "to march away from the sound of the drum." This was encouraging to our students because here was Professor Emeritus from Harvard & fellow Alabama boy, providing them a realistic, evidence-based model for how successful they could be. Paul Bingham affirmed our students' interest in pursuing a unique program in evolution by saying that he thinks ALL students should minor in EvoS, regardless of their major, because all social sciences & humanities would eventually be recognized for their interconnectedness, as the natural sciences already have, & it would become clear how relevant evolutionary principles are in general, for everyone. And, most recently, Gad Saad pointed out to students that EvoS can lead to a lucrative career as well, impressing them that evolutionary principles apply in economics & business too, & that starting salaries for assistant professor in Schools of Business is around \$150k

What's New with EvoS Faculty?

Meet Paul Kassel, EvoS Board Member and Dean of Fine and Performing Arts at SUNY New Paltz

By: Paul Kassel

Interim Dean of the School of Fine & Performing Arts
State University of New York at New Paltz

I have long been interested in fundamental forces. In high school, I was enthralled (it's true) by the laws of thermodynamics, relativity and quantum mechanics. For my first few days at college I was a physics major-- but quickly came to my senses and became a theatre major. For a while I was a double major in theater and psychology, but again came to my senses--perhaps a bit more slowly. What my senses told me was that the forces at play when I was acting had a relationship to the forces at play at the sub-atomic all the way to the behavioral level. And this intuition is what has led me from performing to philosophy to cognitive neuro-science to evolutionary studies, all in pursuit in understanding what an actor does, why an audience reacts, and how to teach students the art and craft of playing.

In my senior year in college, I was introduced to the philosopher, Susanne K. Langer. In a series of books that really had one ultimate goal, Langer lays out a theory of mind arising out of feeling. Beginning with an exploration of symbolic logic, Langer published a sort of unified field theory of art—"the creation of forms symbolic of human feeling" (Feeling and Form, 1948). From there, she moved on to her monumental study, Mind: An Essay on Human Feeling (Johns Hopkins Press 1975-82). This three-volume work is very dense and I slogged through it, driven on by the belief that it all had something to do with theater. In the final part of the third book, I was rewarded. Having developed the concept of the "act formⁱ," and painstakingly demonstrated its validity through citations of research in biology, Langer arrives at the notion that the act form is a lot like the structure of a play. I knew it all along. But it was Langer's connecting of science and art that so struck me, and prompted in me the need to know more.

If you don't know, actor training for about 2,500 years has been largely delivered via a master-apprentice methodology, until Stanislavski created his "system" in the early 20th century. Stanislavski actually introduced scientific notions (albeit naïve ones) into actor training, involving the latest thinking of the time about human psychology. Like Freud, a lot of Stanislavski's conjectures don't hold up, but the questions he asked do, and his guesses were also pretty good. But both problems in translation and a lack of consistency in



terminology has resulted in pedagogy based on anecdote rather than research and data. “Whatever works” has been the mantra in the acting class—up until the last 20 years or so.

In my pursuit of understanding what acting is, how the actor does it, and how to effectively train student actors, I was led to investigate the foundations of movement, speech, imagination, and feeling. That last category is unusually fraught in theater circles. Does the actor feel what the “character” feels? Understanding this question (actually asking a better question) led me to the cognitive theories of emotion of Nico Fridja (Emotions, University of London, 1989) and Elly Konijn (Acting Emotions, Amsterdam University Press, 2000), as well as Antonio Damasio, which led me to the relatively new world of cognitive neuroscience and the so-called “mirror neurons.”ⁱⁱ

All along, however, I was drawn to evolutionary principles in understanding the art and craft of playing (the subtitle of my first book on acting). Langer’s work is heavily indebted to evolutionary theory. From the basic impulses of approach and withdrawal, assessing threat and opportunity, adaptation, and mate selectivity, I found the basis for much what happens on stage, between actors, and between actor and audience. All movement is either approach or withdrawal. Much that motivates character behavior arises out of evaluating threat and opportunity; theatrical forms are related to survival (tragedy, often) or mate selectivity (comedy, often). Adaptation is always what the play is about—adapting to changing circumstances. But it is also what the actor is always doing, too—adapting to the changing actual circumstances in a performance.

My current book brings those two strains together—advances in our understanding of how the brain functions and advances in EvoS as a tool for systematic inquiry in the Humanities. The Actor’s Path: An Evolutionary Approach to the Art and Craft of Playing (Focus Publishing, 2014) is an exploration of the actor’s work via an EvoS lens. I examine what appears to be occurring at the neuro-chemical level (mirror neurons) in both actor and audience, and employ EvoS principles to give context to the theory. In this way, I hope that actors will have more concrete ways of describing, and therefore changing, what they do.

One evolutionary explanation for the presence of mirror neurons is that they assist in evaluating threat/opportunity. This evaluation is central to the two basic behaviors of all organic creatures, as well as every single behavior that occurs on stage—approach and withdrawal.ⁱⁱⁱ The motor neurons associated with the activation of those behaviors are linked to the MNs that activate when a subject sees those behaviors. That is, the cells that mirror the action spark simultaneously with the cells that command the act in the doer. The mirroring cells of someone watching the act also flash, and even though their motor cells flash, too, there is an inhibiting process that keeps the person watching from doing the act. This, it has been proposed, is the basis of imitation.^{iv} (The Actor’s Path)

Empowerment—that’s what I’m really interested in. Empowering the actor, and really anyone, to take action, to be in charge of change. As I said, I am interested in fundamental forces. When we learn to act with them, to harness or channel them, we are no longer at their mercy, and are free to make choices. That’s what makes us human.

ⁱ "The act concept is...a form characteristic of living things...they normally show a phase of acceleration, or intensification of a distinguishable dynamic pattern, then reach a point at which the patter changes, whereon the movement subsides. (*Mind* I, 261)

ⁱⁱ "A subset of neurons, the mirror neurons, is active both when an individual performs an action and when the individual observes another individual performing the same action." (Gallese V, Fadiga L, Fogassi L, Rizzolatti G. "Action recognition in the premotor cortex." *Brain*. 1996; 119(pt. 2):593-609.)

ⁱⁱⁱ There are numerous sources discussing this phenomenon, but Susanne Langer's treatment in her three-volume, and final, work—*Mind: An Essay on Human Feeling* is particularly thorough.

^{iv} "Imitation: is cognitive neuroscience solving the correspondence problem?" Marcel Brass and Cecilia Heyes. *TRENDS in Cognitive Sciences* Vol.9 No.10 October 2005

Call for Visiting Scholars!

Starting in January 2013, EvoS at Binghamton will have a new facility. We will have an office that we wish to fill with visiting scholars. If you are a graduate student, post-doc, or faculty member who would like to come to Binghamton to collaborate with [EvoS participating faculty](#) on research and/or learn more about how EvoS operates at Binghamton University, please email your resume and cover letter to EvoS@binghamton.edu. Please include possible dates and a general sense of what project you would be working on while you are staying with us. We look forward to hosting you!

NEEPS 2014 in New Paltz

The NorthEastern Evolutionary Psychology Society, the first regional sister organization of the Human Behavior and Evolution Society, is pleased to announce the 8th Annual Conference scheduled from Friday, April 11st through Sunday, April 13th, 2013 at the State University of New York at New Paltz. There will be workshop meetings for the Feminist Evolutionary Psychology Society (FEPS) and the Applied Evolutionary Psychology Society (AEPS) on Thursday April 10th.

Keynote Speaker:

Dr. David Buss of the Department of Psychology at the University of Texas at Austin

The deadline for abstract submissions is January 31st, 2014. Please encourage your friends, students, and colleagues to participate.

For additional information:

<http://neepsociety.com/> and

<https://faculty.newpaltz.edu/glenngeher/neeps-2014-new-paltz-reprise/>

Spotlight on Past and Present EvoS Students

I Moved Across the Country for the EvoS Program

By: Benjamin Bush

Twitter: @BenJamesBush

Graduate Student at Binghamton University

Ph.D. Candidate in Systems Science and EvoS graduate certificate holder



Binghamton University's Evolutionary Studies program has a stellar academic reputation that reached out to me from across the country. In fact, I moved from my sunny home in Los Angeles to become a part of the EvoS program in Binghamton, NY.

I have always had predilection for interdisciplinarity. As an undergraduate at California State University, Long Beach, I found it difficult to decide on a specific major. I studied computer science,

psychology, biology, chemistry, physics and mathematics, among other subjects. As a freshman, I was part of the Howard Hughes Medical Institute Honors In Biological Sciences Program. I would often visit my professors to discuss assignments, or sometimes just chat and learn from them. Before long, one of my Computer Science professors, Dr. Todd Ebert, encouraged me to begin working on a research project. Dr. Ebert introduced me to Evolutionary Computation, an advanced artificial intelligence technique that lies at the intersection of computer science, mathematics and evolutionary biology. Evolutionary Computation has many applications, both theoretical and practical, ranging from artificial life to industrial optimization. Happy to find such a rich and broad area of study, I immersed myself in research. Months later, I presented my work at the California State University Long Beach Undergraduate Student Research Competition and won 1st place. This award opened doors for me. In particular, in my senior year I obtained a grant from the Louis Stokes Alliance for Minority Participation to build a Lorenzian Chaotic Waterwheel, a simple physical system which demonstrates the principles of Chaos Theory. I presented the Waterwheel as my final project on my last day of class.

After earning my Bachelor's degree in Mathematics, I was lucky enough to obtain \$60,000 fellowship from the Lois Stokes Alliance for Minority Participation Bridge to the Doctorate Program to begin working toward a master's degree at California State University, Los Angeles, where I continued my studies in mathematics, computer science, and evolutionary computation. Picking up where my undergraduate research left off, I wrote and presented a paper at the 2009 Genetic and Evolutionary Computation Conference Graduate Student Workshop in Montréal, Canada.

While working toward my master's degree, one of my advisors, Russ Abbott, recommended that I read a book called "Evolution for Everyone," written by David Sloan Wilson. In this book, Wilson espouses the virtues of evolutionary thinking and tells instructive stories about the vibrant, interdisciplinary academic community that is the Binghamton EvoS program. I quickly fell in love with EvoS, and contacted Dr. Wilson to discuss what position I might take within it. Not long after, I began planning my cross-country move from Los Angeles to Binghamton.

Today, I am Systems Science PhD candidate and an active member of the Binghamton EvoS community. Starting in Fall 2009, I worked with Dr. Hiroki Sayama's, who is the Director of the Collective Dynamics of Complex Systems Research Group. As a member of Sayama's

lab, I used computer science techniques to study the evolutionary processes that take place within human cognition, small decision-making groups, and large idea exchanging adaptive social networks, among other projects. My first journal article, *Hyperinteractive Evolutionary Computation*, was recently published in the IEEE Transactions on Evolutionary Computation, one of the most well-known journals in the field of computer science. While studying at Binghamton, I have been lucky to travel twice overseas to visit colleagues, once to the Max Planck Institute for the Physics of Complex Systems in Dresden, Germany, and once to the University of Bristol in the U.K.

I am currently in the final stages of completing my dissertation and expect to graduate in the Spring of 2014. After graduating, I plan on volunteering my time to work for Evolution: This View of Life magazine as the Associate Technology Editor.

When I first contacted David Sloan Wilson about the EvoS program, David gave me his personal guarantee that I would be intellectually and academically stimulated. I am happy to report that the EvoS program has more than met my expectations.

How EvoS Has Guided Me

By: Benjamin S. Crosier

Graduated from SUNY New Paltz with a M.A. in Psychology in May 2012

Currently works at the University of Florida, Department of Psychology & Dartmouth College, Center for Technology and Behavioral Health



I was lucky enough to be introduced to the EvoS community in 2008, when I began my first graduate school stint at SUNY New Paltz. Under Dr. Glenn Geher, New Paltz was the perfect place to start an academic career. New Paltz and EvoS gave me the foundation that I will use for the rest of my life.

EvoS promotes a cohesive community of scholars between and within colleges and universities. It allowed me to make friends and forge relationships with collaborators in different departments and institutions. I work with a majority of these researchers to this day.

Progress often happens at the contact points of scientific disciplines. The boundaries between scientific disciplines are constructs that we have created and that they can potentially limit us. Thankfully, evolution is inherently interdisciplinary. EvoS embraces this by

working with faculty and students from many departments, promoting interdisciplinarity, and thus, innovation. This prepared me to work with the type of team that I currently am a part of - a diverse group comprised of computer scientists, epidemiologists, statisticians, electrical engineers, physicians, psychologists, sociologists. Being exposed to those with different theoretical backgrounds and methodological toolkits is both scientifically advantageous and personally invigorating.

Most importantly, the ideas I was exposed to early on fundamentally changed the way I think about scientific issues. Learning evolutionary theory encourages one to focus on the bigger picture, the distal “why” questions, and not just the proximate “how” reasons. Taking this step back to obtain an aerial view of sociobiological systems has helped me frame every problem that I tackle. I am very grateful that I got a chance to be a part of such an academic endeavor.

I am now a post doc at Dartmouth’s Center for Technology and Behavioral Health. I work on interdisciplinary projects involving ideas and methods from the social, medical and computer sciences and try to find new ways to address health issues including addiction and HIV. Recently, I have been developing new ways to collect social network data, both online with web-based techniques and offline with RFID-based wearable wireless sensor networks. This information provides a comprehensive and powerful way to describe people’s social environments, which is crucial in

understanding how to make them healthier. I have also been developing a behavioral health intervention platform, which utilizes Google Glass. My time at New Paltz in the EvoS community helped

prepare me for this career by exposing me to new ideas and methods early on while linking me to a dense group of highly collaborative and supportive researchers.

An Interview with Graduate Student, Jessica Fell



Jessica Fell is a Psychology Graduate student at SUNY New Paltz working in Dr. Geher's Evolutionary Psychology lab.

What benefits do you think you'll gain by studying evolutionary topics?

Studying evolutionary psychology helps put things in perspective. It helps ground what we think we know about ourselves as humans. This, in turn, allows us to connect the dots that may otherwise be abstract or arbitrary. Evolutionary theories can be applied to a variety of areas of academia, facilitating a greater breadth and depth of understanding of human behavior.

Give a summary of your research and how it's influenced by evolutionary theory.

My research focuses on health and physical activity. Specifically, I'm looking at comparing people who hold more "traditional" or popular views of physical fitness and nutrition with people who (whether knowingly or not) take a more evolutionarily-informed approach to their diet and exercise. My goal is to see if there is something other than superficial factors (like good marketing) that draw people to move their bodies in more primal, functional ways, and if so, do the diet and overall health perceptions of these people coincide with that as well. In this study, I asked Gold's Gym members and CrossFit members to self-report on their body, nutrition, and exercise habits, as well as personal philosophies regarding diet and exercise. Although my study is survey-based, I think that it can serve as a foundation for future research involving actual exercise and diet behaviors.

The initial underpinning for my study was based on the mismatch theory, so I would say that from the start, it was influenced by evolutionary theory. However, since inception, several aspects of evolutionary theory have attached themselves to the overall questions and implications that the study addresses. For example, links between physical fitness and overall fitness indicators, or what (if any) relationship exists between them, how we care for and move our bodies, and how we

attract and choose mates are all questions that are supported by evolutionary theory.

How has evolutionary theory changed how you think about the world?

Learning about and studying evolutionary theory has changed the vantage from which I approach questions. For example, I now critically examine aspects of human behavior from this established theoretical basis, and apply theories that make not only logical, but also intuitive sense.

This newsletter was edited by Briana R. Tauber and Glenn Geher.

Special thanks to all those who contributed to this issue.

Don't forget to visit the EvoS Consortium website at

[http://evostudies.org/!](http://evostudies.org/)

SUNY New Paltz 2014 Seminar Series

New Paltz will see the return of its annual EvoS seminar series on February 10, 2013. On selected Mondays, there will be a lecture at 5:30pm on a variety of different evolutionary topics. As usual, these seminars are open to both the academic community and the general public. More information can be found at the New Paltz EvoS website: <http://www.newpaltz.edu/evos/seminar.html>

Scheduled Speakers:

February 10th

Paleoneurology and Human Brain Evolution

Ralph Holloway, Ph.D.

Columbia University - Department of Anthropology

February 24th

On how wrestling rhinoceros beetles, drinking LOVExCOLA and similar adventures, aka public and lifestyle experiments, may produce a bio-diverse, tasty and desirable future

Natalie Jeremijenko, Ph.D.

New York University - Department of Art

March 10th

From *Ardipithecus* to Agriculture: The science of diet and human evolution

Ken Nystrom, Ph.D.

SUNY New Paltz - Department of Anthropology

March 24th

When one male is not enough: the diversity of primate mating systems

Andreas Koenig, Ph.D.

Stony Brook University - Department of Anthropology

April 7th

Differing Models for Coordinated Faunal Turnover Events Within the Devonian of the Appalachian Basin

Alex Bartholomew, Ph.D.

SUNY New Paltz - Department of Geology

April 21st

Primate Sexual Behavior - Confirmations, Continuums and Cautions

Craig Bielert, Ph.D.

SUNY Oneonta - Department of Psychology

Missed past New Paltz EvoS talks? You're in luck! You can find them here:

<http://newpaltz.mediasite.suny.edu/Mediasite/Catalog/catalogs/default>