

Bowens, Wesley Tateo

Last, First Middle

DEGREES CONFERRED:

Bachelor of Arts and Bachelor of Science Awarded 22 Mar 2013

TRANSFER CREDIT:

Start	End	Credits	Title					
01/2001	12/2002	48	Mesa Community College					
09/2004	03/2009	20	Tacoma Community College					
EVERGREEN UNDERGRADUATE CREDIT:								
Start	End	Credits	Title					
00/2000	12/2000	16	Amorican Frontiors: Homolands and					

09/2009	12/2009	16	American Frontiers: Homelands and Empire 4 - Pacific Northwest History 4 - Geography: Boundaries and Migration 4 - Native American Studies: Federal Indian Policy to 1975 4 - American Studies: Race, Ethnicity and Class in the West
01/2010	03/2010	12	 Native American Knowledge and the Power of History 3 - Native American History 3 - Historical Theory and Practice 3 - Expository Writing: Topics in Native American History 3 - Independent Research and Writing: Advanced Topics in Native American History
03/2010	06/2010	16	"We're Here!" 8 - Evolutionary Biology 4 - Natural History 4 - Philosophy: Epistemology of Biology
09/2010	03/2011	32	Animal Behavior and Zoology *8 - Animal behavior *8 - Evolutionary theory *4 - Evolutionary ecology *4 - Population biology *4 - Zoology 4 - Statistics
03/2011	06/2011	16	Tropical Animal Behavior and Zoology *12 - Tropical biology *4 - Tropical zoology
06/2011	09/2011	8	Summer Ornithology: Birds in the Hand *8 - Advanced Ornithology
09/2011	12/2011	16	Equatorial Studies: Sound, Science and the Western Imagination 4 - Equatorial Studies 3 - Evolutionary Biology 3 - Anthropology 3 - Ethnomusicology 3 - Expository Writing

A00209875 Student ID



Bowens, Wesley Tateo

Last, First Middle

EVERGREEN UNDERGRADUATE CREDIT:

Start	End	Credits	Title
09/2011	12/2011	4	Spanish, Beginning I 4 - Beginning-level Spanish Language
01/2012	03/2012	16	Natural History of Navopatia, Mexico *6 - Natural History of the Agiabampo Estuary *6 - Applied Ecological Field Techniques *4 - Field Ornithology
04/2012	06/2012	9	Ecological Agriculture: Crop Botany and Plant Genetics 4 - Crop Botany and Plant Physiology with Lab 3 - Introduction to Plant Genetics 2 - Seminar: History of Plant Breeding
06/2012	09/2012	8	Evolutionary Biology and Creative Nonfiction 2 - Wildlife Biology 2 - Animal Behavior 2 - Pedagogy 2 - Creative Writing
09/2012	12/2012	10	Vertebrate Evolution *3 - Evolutionary Biology *3 - Phylogenetic Systematics Lab *4 - Scientific Literature Review
01/2013	03/2013	16	Sonoran Natural History and Raptor Ecology *8 - Ethology *6 - Ecological Field Techniques *2 - Cultural Anthropology

Cumulative

247 Total Undergraduate Credits Earned

A00209875

Student ID



Bowens	Wesley	т		A002098	75		
Student's Last Name	First	Mic	ldle	ID Number			
20458	Individual L	Individual Learning Contract					
Program or Contract No.	Title						
		07-JAN-2013	22-MAR-2	013	16		
		Date began	Date ended		Qtr. Credit Hrs.		

DESCRIPTION:

Faculty: Sara Huntington, M.A., M.L.S. Field Supervisor: Steven G. Herman, Ph.D.

Wesley Bowens successfully completed an Individual Learning Contract entitled **Sonoran Natural History and Raptor Ecology.** Wesley spent the Winter quarter, 2012-2013 studying natural history in general and Harris Hawks in particular at the Navopatia Field Station in Sonora, Mexico. His work has been outstanding as he fulfilled his learning objectives of 1) building experience researching raptor ecology during breeding season; 2) developing advanced skills as a naturalist; and 3) improving his ability to write scientific papers and natural history based essays through practiced, disciplined description in his field journal.

EVALUATION

Written by: Steven G. Herman, Ph.D.

Wesley narrowed his previous focus to concentrate on ethology –the study of animal behavior in natural habitats. He chose as his subject a species of neotropical hawk, the Harris Hawk. This species –which barely makes it into the United States- is known for its cooperative behavior, for the fact that groups often hunt together, and young from a previous year help feed the young of a current year. It is one of the most fascinating of a group of very fascinating raptorial birds.

In the process of searching for the nests of these birds he of course encountered many other species, and had to identify plants that were used by Harris Hawks for nesting. These requirements added diversity to his study and allowed him to broaden his understanding of the Organ Pipe Cactus landscape that he first encountered a year ago.

Wesley used the Grinnell system of keeping a field journal to record and organize his observations. Between 23 January and 25 March he recorded journal information for 62 days with 71 pages of information. He kept species accounts of: White-tailed Kite, Northern Harrier, Sharp-shinned Hawk, Cooper's Hawk, Common Black-Hawk, Harris' Hawk, Zone-tailed Hawk, Gray Hawk, Red-tailed Hawk, American Kestrel, Merlin, Peregrine Falcon, Greater Roadrunner, Phainopepla, Black-throated Sparrow (all are multi-entry accounts except for Zone-tailed Hawk).

Not surprisingly, his longest account is of the Harris' Hawk= 12 pages. During this time he saw and identified 215+ species of animals: 215+ birds, 12 mammals & 11 herps including a dead green sea turtle. Wesley spent 45 hours actively observing Harris' Hawks not including time spent in the field when no Harris' Hawks were seen.

His two favorite accounts are: February 20, "the day I spent 3 hours observing 4 Harris' Hawks consume what I determined to be a Double-crested Cormorant after sneaking to within 10m of the Hawks behind the cover of mangroves and: March 12, an account observing a Harris' Hawk female break a branch from the top of the Palo Jito tree for nesting material. The second account is transcribed below; I feel this is my best written account.

April 18, 2013



Bowens	Wesley	Т		A00209	875
Student's Last Name	First	N	iddle	ID Number	
20458	Individual L	earning Contract			
Program or Contract No.	Title				
		07-JAN-2013	22-MAR-	2013	16
		Date began	Date ended		Qtr. Credit Hrs.

12 Mar: Palo jito nest site, Las Aguilas & vicinity, Mun. Huatabampo, Sonora 0845- observed a Harris' Hawk perched on a power pole upon my arrival and flew low to a perch 200m W of the nest tree. At 0850 the same Hawk flew to a perch 15m NW of the nest beside a second Hawk mostly concealed by a brush pile. The pair copulated for 30 seconds and I was able to see the Harris' female had her tail lifted during the copulation. The Harris' male flew to a perch on the fourth power pole E of the intersection. The female remained on the same perch until 0940. She then flew into the nest for 2 minutes before perching on top of the Palo jito nest tree. She then leaned down and forward and broke a branch from the top of the tree using her beak and scanned the area for 5 minutes with the branch in her beak. She then dropped the branch above the nest and scanned the area for an additional 3 minutes. A Caracara flew 50m N to W of the nest and the Harris' female made a low raak-raak-raak call toward the Caracara, which continued flying until out of sight to my SW. She remained perched with her white rump patch visible and facing the Harris' male on the same power pole perch as earlier. At 0950 four Ravens croak and call overhead gliding slowly N toward the nest tree. The Harris' female made the same low raak-raak-raak call toward the Ravens and they continued flying N until out of sight. At 0955 the Harris' female glided low to the E, then to the S and perched on the power pole E of the Harris' male and a third Harris' Hawk flew from its perch beside the male to a perch directly below on the ground. At 1000 all three Hawks took off in succession gliding, then soaring to the N until out of view at 1005."

By making these intensive and extensive observations in the field, Wesley learned not only a great deal about his study species, but also about the business of studying animal behavior. He is now prepared to interpret behavior in other landscapes, of other species, in future times. And by doing this work on a broad canvas of natural history, he has significantly expanded his knowledge of the flora and fauna of a unique part of the world.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 16

*8 - Ethology

- *6 Ecological Field Techniques
- *2 Cultural Anthropology

(* indicates upper-division science credit)

April 18, 2013

Date

Page 2 of 2



Bowens	Wesley	Т		A00209	875
Student's Last Name	First	Mide	dle	ID Number	
10197	Vertebrate E	Evolution			
Program or Contract No.	Title			2010	10
		24-SEP-2012 Date began	Date ended	2012	Qtr. Credit Hrs.

DESCRIPTION:

Faculty: Heather Heying, Ph.D.

This program began a detailed exploration of theoretical and philosophical approaches to the study of macroevolution. Some of the questions investigated included "how do we evaluate evidence in a historical science like evolution?", "what is a species? and "what are the tests of homology in assessing hypotheses of relationship? Vertebrates provided the empirical model for these investigations, and we explored both molecular and morphological approaches to inferring species history.

Class sessions entailed interactive lectures, discussions and workshops; computer labs; an introduction to anatomy lab; and two field trips. Early focus on the vocabulary of phylogenetic systematics (e.g. synapomorphy, homoplasy) and the best current reconstruction of the vertebrate evolutionary tree allowed discussions to quickly expand into topics such as the modes of speciation in vertebrates, and how we can use Agassiz's three-fold parallelism to assess phylogenetic hypotheses. The main texts read were Dawkins' (2004) *The Ancestor's Tale*; Brooks and McLennan's (2002) *The Nature of Diversity*; and Baum and Smith's 2012 *Tree Thinking* as well as peer reviewed papers. Students were introduced to Mesquite, and used this software both to interpret existing datasets, and to analyze their own data, which they generated from skull collections.

Comprehension of the program materials was assessed in multiple ways. Six sets of synthesis questions were designed to encourage comprehension of theoretical and empirical material, and students were encouraged to use outside sources in this work. Students also completed three morphological phylogeny lab assignments, two take-home exams, and an in-class quiz. For their research projects, students worked in teams with the primary literature to research a yet unresolved question in vertebrate evolution. Working in small groups, they peer-reviewed early drafts of each other's work, culminating in formal written research proposals and oral presentations of their work to the class.

EVALUATION:

Written by: Heather Heying, Ph.D.

Wes did strong work this quarter, as usual. In phylogenetic systematics and morphology, Wes was consistently engaged and enthusiastic, and took a lead role in preparing the first lab—on vertebrate diversity—from specimens in Evergreen's Natural History Museum, where he is a Fellow. On take-home exams, Wes wrote particularly strong short-essays on the nature of evidence in systematics, and the role of Darwin's hostile forces in a variable environment. For the lab in which he conducted web-based research of morphological characters, he built a phylogenetic tree and assessed which characters have experienced homoplasy and why; his data collection, phylogenetic hypotheses, and analysis, were all strong. His work in the final lab, in which he became a morphological systematist for a few weeks and deduced relationships based on skull characters, was also good.

For his research project in Fall quarter, Wes worked with a partner in proposing new research on the evolution of hovering flight in birds. Beginning with the observation that sustained, hovering flight is often part of a feeding strategy, but that diet and mode of prey capture vary within hovering taxa—e.g. hummingbirds,

January 17, 2013



Bowens	Wesley	Т		A00209	875	
Student's Last Name	First	Mide	dle	ID Number		
10197	Vertebrate E	volution				
Program or Contract No.	Title					
		24-SEP-2012	14-DEC-:	2012	10	
		Date began	Date ended		Qtr. Credit Hrs.	

kingfishers, kestrels, and sunbirds—the research team conducted a substantial literature review, and proposed a comparative analysis of hovering flight in which they seek to understand, among other things, what ecological factors are correlated with hovering flight; what anatomical or physiological constraints exist to constrain it; and how widespread it, or its precursor state, is within Aves. The talk that the team gave on this work was well-organized, scientifically robust, and engaging. This work was extremely well done from beginning to end.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 10

*3 - Evolutionary Biology

*3 - Phylogenetic Systematics Lab

*4 - Scientific Literature Review

(* indicates upper-division science credit)



Bowens	Wesley	Т		A002098	375
Student's Last Name	First	Mi	ddle	ID Number	
40303	Individual L	earning Contract			
Program or Contract No.	Title				
		25-JUN-2012	07-SEP-2	012	8
		Date began	Date ended		Qtr. Credit Hrs.

DESCRIPTION:

Faculty: Jennifer Calkins, Ph.D., MFA

Wesley Bowens successfully completed an Interdisciplinary Learning Contract entitled **Evolutionary Biology and Creative Nonfiction.** During the course of this contract, Wesley focused on developing his skills and understanding of ecology, field biology, pedagogy and creative writing. Wesley worked on various projects that engaged his interest in evolutionary ecology including data collection for species-based behavioral studies, taxonomic field identification of plants and animals, and production of entries for a formal Natural History Grinnell Journal. Wesley also developed pedagogical techniques for working with students in the field as a TA thus solidifying his understanding of field biology and developing his capacity as a teacher. Finally, Wesley worked towards expressing aspects field and scientific experience in shaped pieces of creative writing by keeping a writing journal, reading various texts and generating a piece of creative nonfiction.

Throughout the course of the summer, Wesley clearly engaged and developed his skills as a field biologist, showing particular facility as an avian behavioral ecologist, and taxonomist. He also showed a strong capacity as a teacher. Finally, Wesley showed a dedication to maintaining a personal generative writing practice and to work to produce innovative and effective forms of creative nonfiction.

EVALUATION:

Written by: Jennifer Calkins, Ph.D., MFA

Wesley demonstrated a strong level of capability, patience, skill and intelligence in his approach to field biology. He has the ability to gain rapid understanding of a species and the sensitivity to identify novel aspects of that species' behavior for later ecological and evolutionary studies. The results of much of this work will be incorporated into a manuscript that is part of a long-term project investigating the evolutionary ecology of *Callipepla* quail. His identification of species-specific behavior will serve as a basis for long-term behavioral observation and analysis.

Wesley consistently made a focused attempt to identify organisms from a range of taxonomic groups (plants, and animals including invertebrates and vertebrates such as amphibians, reptiles, birds and mammals). He incorporated this information, along with other details of environmental conditions, into a detailed and informative Grinnell Natural History Journal.

Wesley also served as a TA for a field ornithology class, training students to handle and identify birds as well as develop more basic taxonomic and field skills. During this time, Wesley's patience, maturity and intelligence facilitated the pedagogical process for the fifteen novice students. Wesley's commitment to be an effective TA also deepened his own understanding of the process of wildlife field biology.

Finally, Wesley worked towards melding his studies in field biology with his interest in creative writing. He read several literary texts, including works by Lewis Carroll, Emily Dickinson and Paige Kiely-Ackerson, with the goal of investigating the variety of ways authors use text to communicate. Wesley maintained a writing journal throughout the summer, demonstrating a commitment to the regular generation of text. Finally, in a

Page 1 of 2

September 17, 2012



Bowens	Wesley	т		A002098	75
Student's Last Name	First	Mic	idle I	D Number	
40303	Individual L	earning Contract			
Program or Contract No.	Title				
		25-JUN-2012	07-SEP-20	12	8
		Date began	Date ended		Qtr. Credit Hrs.

strong collage piece that combined portions of text generated in both the writing journal and Grinnell journals, Wesley effectively explored how innovative forms of creative nonfiction could serve to lyrically communicate aspects of internal and external experience.

Through a busy summer and multiple projects, Wesley showed a dedication exploring his various interests in order to deepen his abilities as a natural historian and ecologist, teacher and writer.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 8

- 2 Wildlife Biology
- 2 Animal Behavior
- 2 Pedagogy
- 2 Creative Writing



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Bowens	vvesiey			AUU209875			
Student's Last Name	First	Mido	lle IC	0 Number			
30331	Ecological A	Ecological Agriculture: Crop Botany and Plant Genetics					
Program or Contract No.	Title						
		02-APR-2012	15-JUN-20 ²	12 9			
		Date began	Date ended	Qt	r. Credit Hrs.		

DESCRIPTION:

Faculty: Martha Rosemeyer, Ph.D. and Donald Morisato, Ph.D.

This program provided an interdisciplinary consideration of basic and applied plant biology. In one strand, students were introduced to plant physiology and plant genetics; in another strand, the application of these principles was examined in an agricultural context by considering crop botany and plant breeding.

Weekly activities included two lectures, workshop, laboratory, seminar, and program potluck. Selected chapters from Scott Freeman, *Biological Science, Fourth Edition* were assigned as background reading for lectures, and from Suzanne Ashworth, *Seed to Seed* for lab. Seminar books included Noel Kingsbury, *Hybrid: The History and Science of Plant Breeding*; Gary Nabhan, *Where Our Food Comes From: Retracing Nikolay Vavilov's Quest to End Famine*; and Ruth Ozeki, *All Over Creation*. Field trips provided opportunities for learning about the practice of plant breeding at an academic research site and on individual farms. They included a day visit to the Organic Seed Alliance (OSA) and farms in the Port Townsend and Sequim area; an overnight field trip to WSU-Mt. Vernon, Osborne Seeds, and farms in the Skagit Valley; and a half-day visit to an organic farm in Olympia involved in an OSA-sponsored broccoli breeding project.

The crop botany and plant physiology component included lectures and labs on nine plant families— Brassicaceae, Amaryllidaceae, Fabaceae, Poaceae, Asteraceae, Apiaceae, Chenopodiaceae, Solanaceae, and Cucurbitaceae. Students were introduced to basic reproductive anatomy (flower, fruit and seed) and parameters of breeding (e.g. in-breeding or out-crossing). Lectures on plant anatomy and physiology followed Chapters 36-40 in Freeman, *Biological Science*. Lecture topics included plant structure, the vascular system, sensory and hormones systems and mechanisms of plant defense. The socio-economic context of seed production was provided by both a lecture from Caitlin Moore (Olympia Seed Exchange) on seed company consolidation and a visit to Osborne Seeds. Background reading for crop botany and plant breeding came from Ashworth, *Seed to Seed* and the OSA publications *On Farm Variety Trials: A Guide for Organic Vegetable, Herb and Flower Producers* and *Seed Saving Guide for Farmers and Gardeners*. In workshop, students designed an experimental variety trial to screen varieties of broccoli resistant to clubroot. Study questions accompanying lecture provided a platform for integration of the topics in a plant breeding context.

In the plant genetics component, the principles underlying plant breeding were presented through the introduction of concepts in genetics and evolutionary biology. Lecture topics included the theory of evolution by natural selection; plant reproductive biology; chromosome behavior; Mendel's principles of segregation and independent assortment; genetic linkage and meiotic mapping; molecular nature of the gene; polygenic inheritance and quantitative trait loci; population genetics and evolutionary processes; polyploidy and speciation; and cytoplasmic inheritance. Background reading came from Chapters 1, 11-13, 15, 25-26, and 40 in Freeman, *Biological Science*. In the laboratory, microscopy was used to examine and identify the different stages of mitotically and meiotically dividing cells. In a long-term plant breeding project, genetic crosses between individual *Brassica rapa* plants were carried out to investigate the genetic behavior of Mendelian traits. Weekly workshops provided collaborative opportunities for students to apply analytical and quantitative reasoning skills to solve word problems dealing with topics introduced in lecture.

July 9, 2012



Bowens	Wesley	т	ŀ	400209875			
Student's Last Name	First	Midd	e ID	Number			
30331	Ecological Ag	Ecological Agriculture: Crop Botany and Plant Genetics					
Program or Contract No.	Title						
		02-APR-2012	15-JUN-2012	2 9			
	-	Date began	Date ended	Qtr. C	redit Hrs.		

Students were evaluated on the basis of their participation in workshop and seminar discussions; three writing assignments; demonstrated understanding on in-class midterm exam, final exam, and lab exam; and the organization and content of their portfolio, which included both laboratory and field notebooks.

EVALUATION:

Written by: Martha Rosemeyer, Ph.D. and Donald Morisato, Ph.D.

Wes is a senior coming from a concentration of programs in evolutionary animal biology. His portfolio was organized, but gaps in his participation and engagement were evident; the gaps were due to circumstances beyond his control. He attended all of the weekly seminars, and occasionally but thoughtfully participated in seminar discussion. He participated in two of four days of program field trips. He might record more specific information in his field notebook in order for it to be useful in the future. He drove one of the college vans for the trip.

In the crop botany part of the program, overall Wes' work started out well but lost momentum. In the midterm exam his best work was distinguishing between plant structure modifications and phenotypic plasticity, though his taxonomy and anatomy were also fair. In the final he described crop domestication and origin well, but he left significant portions of the exam blank. There was no evidence of study questions or work outside of class in his portfolio. He was able to correctly identify the plant family name of three of the five unknowns on the final lab exam, although plant family characteristics needed work. He attended five of seven labs and his lab notebook was organized and drawings labeled for those days, but his learning might benefit from written conclusions. His crop spreadsheet matrix was complete and in both midterm and final exams this work was reflected in good knowledge of plant crop taxonomy and continent of origin.

In the genetics segment of the program, Donald Morisato writes, "Wes struggled to demonstrate an understanding of the fundamental concepts. In several lectures, it was evident from his reactions and questions after class that he was interested in connecting genetic mechanisms to his passions for ornithology and evolutionary biology. His participation in workshop sessions was sporadic, and additional work on the questions outside of class was not evident in his portfolio. On the midterm exam, Wes showed good knowledge of the theory of evolution and some understanding of the principle of segregation. On the final exam, he exhibited a limited grasp of the concepts covered over the quarter."

Although Wes could have easily mastered the material had his focus been with this program this quarter, his focus was pulled toward his natural history fellowship, being a teacher's assistant for another class, as well as other circumstances. We missed his attention.

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SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 9

- 4 Crop Botany and Plant Physiology with Lab
- 3 Introduction to Plant Genetics
- 2 Seminar: History of Plant Breeding



Bowens	Wesley	Т		A002098	575
Student's Last Name	First	Mid	dle	ID Number	
20427	Internship L	earning Contract			
Program or Contract No.	Title				
		09-JAN-2012	23-MAR-2	012	16
		Date began	Date ended		Qtr. Credit Hrs.

DESCRIPTION:

Faculty: Heather Heying, Ph.D.

Natural History of Navopatia, Mexico, a group contract and internship for five students, was taught at the Navopatia Field Station, a facility established and operated by the Alamos Wildlands Alliance, a research and conservation organization. Teaching was the responsibility of Navopatia Field Station staff, notably Adam Hannuksela M.Sc. (Zoology) and Sallie J. Herman, M.Sc. (Botany), assisted by Patrick Migas, B.Sc, with primary oversight from Dr. Steven Herman, Ph.D.

The Navopatia field station is situated on an estuary that borders the mainland side of the Sea of Cortez in the southwest corner of the Mexican State of Sonora. Learning objectives this quarter included becoming familiar with various aspects of natural history in the vicinity of the Agiabampo estuary adjacent to the Station. The landscape bordering the estuary is known as Coastal Thornscrub, and is dominated by Organ Pipe Cactus, known locally as Pitahaya. The understory is diverse and includes other cacti and many shrubs. Lichens and bromeliads are abundant. Forbs and grasses are much reduced by centuries of grazing. A nearby large island remains ungrazed and virtually pristine, providing a contrasting environment that is especially valuable for natural history studies. Additional study sites in Tropical Deciduous Forest, a unique and at risk ecosystem, were visited in the mountains around Alamos, some three hours from Navopatia.

Ecological field study methods taught by station personnel also included small mammal and reptile live trapping and assessing bird numbers using several techniques including those employed counting birds in aquatic and shoreline environments. Students were also taught bird, mammal, and reptile identification, often in conjunction with methods used to quantitatively assess vertebrate populations in various circumstances. Mist-netting and other skills that are components of bird banding and vegetation sampling (including plant identification) were taught, and students had an opportunity to enhance their Spanish language skills. Many of these are advanced methods that are available elsewhere only to graduate students.

Students were required to maintain a rigorous field journal and selected species accounts according to the method established by Joseph Grinnell, a pioneer California naturalist who founded the Museum of Vertebrate Zoology at the University of California, Berkeley.

EVALUATION:

Written by: Heather Heying, Ph.D.

Wesley did excellent work across the board this quarter. He worked hard and without complaint, was a quick study, learned field methods and id, and was always a welcome and able contributor to all field and station work. My colleague Steven Herman, Ph.D., wrote the following about Wesley's work, based on more extensive field observation and assessment of his journal and field notes:

Wesley fulfilled his academic obligations with considerable success. He learned how to locate precisely and identify (by sight and sound) several dozen species of birds in marine and terrestrial environments. As part of his internship responsibilities, he participated in 20 minute area searches for birds on two

April 10, 2012



Bowens	Wesley	Т	A	0209875			
Student's Last Name	First	Midd	le ID Nu	umber			
20427	Internship L	Internship Learning Contract					
Program or Contract No.	Title						
		09-JAN-2012	23-MAR-2012	16			
		Date began	Date ended	Qtr. Credit Hrs.			

hectare research plots 6 days a week with instruction from Adam Hannuksela. With Sallie Herman as instructor, he was part of a team that did vegetation surveys on the same plots that hosted the bird counts.

Wesley also learned to recognize and describe the dominant plants found in the vicinity of camp. He learned techniques of keying out plants using flower parts and other standard means. At the end of his stay at Navopatia Field Station Wesley had an excellent understanding of a majority of the primary landscape components in the area.

Wesley also became additionally proficient at all aspects of bird banding in the process of participating in an international partnership of widely distributed teams of banders that include students and staff at Navopatia Field Station. Working with our Mexican partners and Field Station staff, he built on his experience using a mist net, extracting birds from a net safely, and then identifying, ageing, and sexing the birds after banding them.

Wesley was introduced to the Grinnell system at the beginning of the quarter, and his work with it during the quarter was very successful.

Wesley's journal and species accounts are of professional quality and record in useful detail the natural history of all the sub environments in which he worked and studied. His journal and species accounts are extremely well done. Wesley's journal is one of the better field journals that this reviewer (S.G. Herman) has seen in many years of reviewing them. It includes a wealth of quantitative detail. His journal account for 15 and 16 February, describing his travels in the vicinity of Alamos, is exceptional, and his 16 species accounts are all well done.

His most extensive species account is that of Peregrine Falcon. Wesley observed what was presumed to be an individual female Peregrine for many weeks when she appeared over the Field Station in the evening, hunting mostly White-winged Doves when they left the mainland to fly across water to the nearby island at dusk. The data Wesley gathered included observations of more than a dozen kills and many predation attempts by this bird. There are plans to publish these observations.

All students interacted with local Mexican residents, many of whom are old friends of staff and work at the station. Students worked and played side-by-side with many of these persons, and in the process were able to improve their Spanish language skills. Wesley was successful in this regard. He and his fellow students were thoroughly immersed in another culture, remote from their regular social lives and modern conveniences in the United States. Wesley adapted very well to this environment, and in the process learned much about Mexican culture and the business of learning, studying, and functioning in a foreign and not always convenient land.

I couldn't be more pleased with Wesley's academic achievements this quarter. His accomplishments are varied and significant, and he is very well prepared for additional work in those fields he so successfully studied.

April 10, 2012



Bowens	Wesley	т		A0020	9875
Student's Last Name	First	Ν	liddle	ID Number	
20427	Internship L	earning Contract			
Program or Contract No.	Title				
		09-JAN-2012	23-MA	R-2012	16
		Date began	Date ende	ed	Qtr. Credit Hrs.

Wes is an outstanding student with a strong interest in natural history. He contributes energy and academic sophistication to any learning situation: he consistently exhibits leadership skills. His already considerable skills are maturing rapidly and he has a very bright future that includes a lifelong appreciation of the beauty of the natural world.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 16

*6 - Natural History of the Agiabampo Estuary

*6 - Applied Ecological Field Techniques

*4 - Field Ornithology

(* indicates upper-division science credit)



Bowens	Wesley	т		A0020	9875
Student's Last Name	First	Mic	ddle	ID Number	
10240	Spanish, Be	ginning I			
Program or Contract No.	Title				
		26-SEP-2011	16-DE	C-2011	4
		Date began	Date ende	ed	Qtr. Credit Hrs.

DESCRIPTION:

Faculty: David Phillips

Students in Beginning Spanish I began to develop their communication skills in the language. Students acquired basic vocabulary and learned fundamental grammatical forms, which they practiced in written exercises. Students worked to develop listening comprehension, and practiced speaking in conversation groups. The course was taught mainly in Spanish, and the curriculum included practical topics and cultural themes. Students were evaluated on their attendance, class participation, and progress in gaining essential skills in the Spanish language.

EVALUATION:

Written by David Phillips

Wesley did commendable work to learn Spanish during fall quarter, his introduction to the language. His attendance was excellent. Wesley took a well-focused, diligent approach to learning the language. He worked diligently to acquire a growing range of beginning vocabulary. He applied grammatical forms with notable accuracy in his neatly presented written exercises. Wesley took an active approach to conversation and made progress in developing his verbal skills. He'll benefit from ongoing conversation, writing, and reading out-loud. Wesley has gained a good foundation in Spanish; he's prepared to make rapid progress in learning the language.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 4

4 - Beginning-level Spanish Language



Bowens	Wesley	т		A002098	75
Student's Last Name	First	Mide	dle	ID Number	
10386	Equatorial S	tudies: Sound, Sci	ence and the	Western Im	nagination
Program or Contract No.	Title				
		26-SEP-2011	16-DEC-2	011	16
		Date began	Date ended		Qtr. Credit Hrs.

DESCRIPTION:

Faculty: Heather Heying, Ph.D., Eric Stein, Ph.D., Sean Williams, Ph.D.

This all-level program focused on the tropics, broadly defined as the equatorial region up to and including the Tropic of Cancer and the Tropic of Capricorn, north and south. Within this region of the world, we used the lenses of science, anthropology, and ethnomusicology to explore the ways in which humans connect to the natural world, the arts, and each other. In fall quarter our studies in anthropology and ethnomusicology were contextualized within the cultures and bioregions of West Africa, the Kalahari and Brazil; scientific topics included philosophy of science, speciation, biogeography, and primate diversity and behavior. Weekly activities included lectures, films, exercises, and seminars. The students wrote six analytical essays, conducted field exercises in each of the three disciplines, and their quarter culminated in collaborative final presentations.

Fall quarter included the following books: *The Emperor of Scent* (Burr), *Tropical Nature* (Forsyth and Miyata), *The Old Way* (Thomas), *Music of West Africa* (Stone), *Baboon Metaphysics* (Cheney and Seyfarth), *Tristes Tropiques* (Levi-Strauss), and *Music of Brazil* (Murphy). Students also read short essays as part of their work. Each book was used as a foundational text in program seminars.

EVALUATION:

Written by: Sean Williams, Ph.D.

Wes Bowens has been a welcome participant in the Equatorial Studies program this quarter. His attendance was stellar, and he clearly focused well and turned in all his assignments. As a seminar participant, Wes was a leader. Even when his classmates were being stubborn about voicing their ideas or insights, Wes was always prepared and contributed again and again. Without his help and his great ideas, the seminar would have experienced diminishment.

Wes's first music essay, on the topic of West African music, described the issues of ostinato, improvisation, and the use of specific African instruments as being essential in African-American musics. He used Stevie Wonder's music (and musicianship) to illustrate the appearance of those musical elements across the Atlantic; the descriptions and examples he used were first-rate. His second essay, on the issue of Brazilian music and identity, included descriptions of several important Brazilian genres, among them capoeira, música caipira, and music of the Kayapó indigenous people. He chose good examples that, in connection with his discussion of his own musical identity, revealed profound connections between region, class, and politics.

My colleague, Heather Heying, Ph.D., wrote this about Wes's work in fall quarter:

"In evolutionary and equatorial biology, Wes did excellent work. Entering the program with substantial background in evolutionary theory, Wes continued to deepen his analytical skills, and to hone his ability to generate testable, falsifiable hypotheses. His intellectual interest in mating systems led him to research and write a very fine paper on the origins and maintenance of polyandry in several species of Callitrichids (marmosets and tamarins). Wes has excellent observation skills as well, and when he has the opportunity to combine his growing command of theory with fieldwork, he is particularly impressive."

January 5, 2012



Bowens	Wesley	т		A002098	875
Student's Last Name	First	Midd	le	ID Number	
10386	Equatorial Stu	idies: Sound, Scie	ence and the	Western Ir	magination
Program or Contract No.	Title				
		26-SEP-2011	16-DEC-2	2011	16
		Date began	Date ended		Qtr. Credit Hrs.

My colleague, Eric Stein, Ph.D., had the following to say about Wes's work in anthropology:

"Wes has consistently completed excellent work in anthropology fall quarter. His first paper offered a solid, detailed critique of the film "The Gods Must Be Crazy," showing a good level of understanding of the !Kung and of hunter-gatherers in general. Hi second paper did an excellent job describing several historical and contemporary examples of indigenous struggles for survival, providing very good insights into indigenous marginalization and dispossession in economic realms in particular. In all, Wes has demonstrated a high level of awareness of certain anthropological issues beyond the scope of the program itself, in addition to having a good grasp on the program material."

For his research project, Wes studied bird migration; this work was excellent from beginning to end. Beginning with his intuition that both migration timing and routes of predator and prey have co-evolved, he hypothesized that raptors, in particular, will time their breeding season to correspond to prey presence. Wes then did an outstanding literature review in order to prepare for a field project that could test this hypothesis; the continuation of this work would make an excellent graduate level project.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 16

- 4 Equatorial Studies
- 3 Evolutionary Biology
- 3 Anthropology
- 3 Ethnomusicology
- 3 Expository Writing



Bowens	Wesley	Т		A00209	875
Student's Last Name	First	Mi	ddle	ID Number	
40131	Summer Or	nithology: Birds in	the Hand		
Program or Contract No.	Title				
		20-JUN-2011	02-SEP	-2011	8
		Date began	Date ended		Qtr. Credit Hrs.

DESCRIPTION:

Faculty: Steven G. Herman, Ph.D.

This class of 16 students, 4 volunteer Teaching Assistants and the instructor left campus shortly after meeting on the morning of 25 July. We spent the first night at Seven Mile Cabin, a U.S. Forest Service facility and the seasonal base camp for a team of interns and staff members from Klamath Bird Observatory in Ashland, Oregon.

Students were given a detailed and comprehensive introduction to netting and banding birds there. The instruction was led by Bob Frey, an accomplished bander and ornithologist with a remarkable talent for teaching.

The next afternoon found us in Badger Camp on Sheldon National Antelope Refuge in northwestern Nevada. This remote location was to be our home for the next 13 days.

We set up mist nets at right angles to the small creek that flowed from a spring near our camp; we netted, banded, and processed some 472 birds of 30 species during our stay.

Students were taught to set up mist nets and--over a period of several days--shown how to monitor these nets and how to safely extract birds from them. Birds were routinely removed from the nets within seconds of their capture and taken in hand to the banding tent, where they were identified to species, sex and age class when possible, then banded and otherwise processed. Among the fifteen data points recorded were age, sex, brood patch, cloacal protuberance, wing length, wing wear, tail wear, details of molt, and weight. Birds were then released back into the wild.

Our routine was to rise at 0530, net and band until mid-day, have lunch and lie up for awhile, then go back to our focus. We did that routinely. Our meals were prepared for us by Dean Patrick and assistants drawn from the student body; dishes were washed and kitchen errands run by students named on a roster. We shopped in Alturas, California, 80 miles and three hours away over mostly gravel roads.

We were always armed with binoculars, and students and faculty alike improved our bird identification skills daily. We studied plants and animals of all kinds over the 18 days we were in the field. Sallie Herman, a professional botanist, familiarized the students with the local flora during an hour and a half plant walk, and indeed throughout her several day visit to camp. Adam Hannuksela, another skilled visitor, spent much time at the nets and in the banding tent providing instruction. His demonstrations of skulling were especially valuable to students. Brandon McGarry, a former student and teaching assistant, did likewise.

From time to time we explored other parts of this vast Refuge, administered by the U.S. Fish & Wildlife Service, and one day was devoted exclusively to exploration.

We broke camp and drove the 149.2 miles to Fish Lake Campground on Steens Mountain on 9 August. We left at 1030 and got to Steens at 1630, stopping at various places for birding and milkshakes. For most of the students, this was the first day in nearly two weeks they had been off Sheldon or nearby places.



Bowens	Wesley	Т		A002098	375		
Student's Last Name	First	Mido	dle	ID Number			
40131	Summer Orr	Summer Ornithology: Birds in the Hand					
Program or Contract No.	Title						
		20-JUN-2011	02-SEP-2	011	8		
		Date began	Date ended		Qtr. Credit Hrs.		

For the next two days we explored Steens Mountain, fished, swam, and completed our academic work and self evaluations. We left for Olympia and home on Friday morning, 12 August.

EVALUATION:

Written by: Steven G. Herman, Ph.D.

Wesley Bowens successfully completed **Summer Ornithology: Birds in the Hand** during the summer quarter of the 2010-2011 academic year. Wesley was an excellent student who learned a great deal about birds, mist netting, processing, and banding during the three weeks we spent in the field in Nevada and Oregon, most of the time on Sheldon National Wildlife Refuge in northwestern Nevada.

Wesley entered the program with a moderate background in ornithology. He left the program with an enlarged understanding of many components of that discipline and a good understanding of the ecology and behavior of passerine birds. Wesley is now fully qualified to be part of a banding operation anywhere in the world. He is also well qualified to pursue further studies in ornithology.

Wesley spent many hours at the processing/banding table and balanced that effort with an approximately equal amount of time at the nets. He learned techniques of identification, sexing, ageing, measuring, weighing, and banding birds, as well as means of safely removing birds from mist nets and setting and striking mist nets.

Wesley learned to recognize in detail the fine points of molt, molt limits, skulling, and closely related species identification skills.

He sharpened his identification skills, not only with regard to birds in the hand, but also with normal freeranging birds seen on the many and diverse sites we visited--from desert mountain peaks to conifer forests and several examples of shrubsteppe landscapes. He also learned much about the flora and fauna (beyond birds) of the sites we visited; this was especially true of plants, but included mammals, insects, and other major taxonomic categories.

Wesley made many contributions to the successful operation of camp and the support of his fellow students and the equipment; Wesley's accomplishments in all areas of learning and responsibility were exemplary, and should be a source of considerable pride for him.

Wesley enriched this class. His curiosity and intelligence influenced all of us. He is a highly committed student able to focus his energy on specific learning goals. His background is nearly as rich as his commitment. I very much enjoyed Wesley's great personality and attention to detail. His promise is huge and his pursuit of education is something to be highly respected.

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SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 8

*8 - Advanced Ornithology

*denotes upper division science credit



Devices		т Т	•	0000075	
Bowens	vvesiey		A	.00209875	
Student's Last Name	First	Mid	dle ID I	lumber	
30493	Individual L	earning Contract			
Program or Contract No.	Title				
		28-MAR-2011	10-JUN-2011	16	
		Date began	Date ended	Qtr. Credit Hrs.	

DESCRIPTION:

Faculty: Heather Heying, Ph.D.

Tropical Animal Behavior and Zoology consisted of a two-week short course in tropical ecology and zoology in the Bocas del Toro archipelago of Panama, followed by six weeks of independent field research in Panama, then two weeks of data analysis, write-up, and presentation back home.

During the two-week short course, students engaged some of the diversity and still-unanswered questions of tropical biology through several field days in a variety of lowland rainforests, coral reefs and caves; practice of behavioral field methods; and a three-day trip to the remote island of Escudo de la Veraguas. Lectures and workshops in tropical ecology and conservation added additional context. Students also worked in teams on two day-long field projects: one tested the hypothesis that arboreal ants, which are more protein limited than are ground ants, will prefer protein to carbohydrate baits; the other was at the students' discretion. Finally, students kept field journals, and presented both the results of their team field projects and their plans for their independent research projects to the group.

Independent research projects were originated, designed, implemented, analyzed, and presented entirely by the student. They generated original hypotheses and appropriate research designs, spent weeks in the field collecting data, and modified their original hypotheses or other plans as necessary.

EVALUATION:

Written by: Heather Heying, Ph.D.

Wes did very good work this quarter. During the two week short-course in tropical ecology and zoology, he was consistently very enthusiastic about the diversity of species and systems all around him. For his second day-long field project, Wes worked in a team of four to conduct a study of bird diversity in relation to habitat type—pasture, forest edge, and primary forest. While the results would have been stronger with statistical analysis, in combination with the ant-baiting exercise, it showcased some of Wes's already strong skills in field methods. His field journal conveyed a sense of wonder and excitement at all the tropics have to offer. It is a mixture of natural history field journal—accurate and detailed description without interpretation—and creative, precise narrative that combines scientific insight with analysis and a talent for story-telling. This skill is much needed in science: to be clear, accurate and precise in what you see and what you know, while also telling the tale in a way that is evocative and draws the reader in. Wes is able to do this extremely well in writing, with his distinct and remarkable voice.

For his independent research project, Wes studied Montezuma's oropendolas (*Psarocolius montezuma*), with a focus on vocalization behavior, and its implications for mating systems. This work was very well done overall; one of his conclusions was that the published description of oropendolas having a female-defense polygyny system is likely to be too simplistic, if not entirely wrong. He spent much time in the field watching these—and other—animals, gaining the kinds of deep insights that are possible only with direct and abundant observation. Furthermore, Wes was a great resource for other students in Panama, helping his peers generate testable hypotheses and solid experimental design.

July 12, 2011



Bowens	Wesley	Т		A00209	875
Student's Last Name	First	Mi	ddle	ID Number	
30493	Individual L	earning Contract			
Program or Contract No.	Title				
		28-MAR-2011	10-JUN-	2011	16
		Date began	Date ended		Qtr. Credit Hrs.

Early in the research period, Wes also watched a pair of plumbeous kites building a nest, and spent time watching kingfishers and capuchin monkeys as well. His study site for the oropendolas was on the Soropta peninsula, a large piece of privately owned land that has been historically difficult to access by researchers at the Institute for Tropical Ecology and Conservation (ITEC), the field station where Wes was based. Along with another student, however, Wes acted as ambassador for American researchers on Soropta, making friends both with the landowner and the caretakers living on the property, such that all future ITEC students and researchers have now been granted full access.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 16

*12 - Tropical biology

* 4 - Tropical zoology

*indicates upper-division science credit

July 12, 2011 Date

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Bowens	Wesley	т		A00209	875
Student's Last Name	First	Mid	dle	ID Number	010
10009, 20009	Animal Beh	avior and Zoology			
Program or Contract No.	Title				
		27-SEP-2010	18-MAR-2	2011	32
		Date began	Date ended		Qtr. Credit Hrs.

DESCRIPTION:

Faculty: Heather Heying, Ph.D., and Bret Weinstein, Ph.D.

This program focused on the evolutionary and ecological parameters that formed and maintain current patterns of behavior. Beginning with the premise that behavior exists at the nexus between evolution and ecology, students engaged the complex scientific predictions and results that have been generated in this field. Discussions included explanations of mechanism (e.g. how individuals recognize kin), but the main focus was on ultimate explanations for behavior: why frogs call; why many birds are monogamous; why many ants, bees and wasps forego reproduction. Both the interpretation and generation of new theory was a focus as well.

Lecture topics included but were not limited to animal diversity, natural and sexual selection, trade-offs, mating systems, competition, mate choice, territoriality, communication, and tropical ecology and land use, with a focus throughout on social behavior. Texts included *An Introduction to Behavioural Ecology* (Krebs & Davies), *Tropical Nature* (Forsyth & Miyata), and a thick course pack consisting of primary literature ranging from classic theory to empirical research. Comprehension was evaluated with four take-home exams, which required students to read and interpret recent scientific papers, as well as assess hypothetical ecological scenarios, in light of existing theory or new predictions. In addition, students led debates on "biological dichotomies"—trade-offs between species such as generalist vs. specialist habit, endotherm vs. ectotherm, and semelparous vs. iteroparous.

From weekly workshops and the text *Practical Statistics for Field Biology* (Fowler *et al*), students learned statistical methods appropriate for behavioral data, and statistical homework prepared students for the analysis of their own data. Students also created posters on the natural history of a local organism, and produced annotated bibliographies from that research. Seminars, which focused on human behavior, were led by students, and everyone wrote short essays relating to the readings before attending seminar. The class spent four weeks in the field together, during some of which students practiced behavioral observation methods.

In the Fall, teams of students conducted scientific research projects from start to finish. Lectures and workshops on research methods and design, as well as Martin & Bateson's *Measuring Behavior*, helped students formulate hypotheses and predictions. They then wrote research proposals, using the primary literature to understand what was already known about the particular question they were interested in working on, and to help them design observational or experimental research that would effectively answer their question. Students implemented their designs through field work, spending at least nine days in the field collecting data. First drafts of their Introductions, Methods and abstracts were due at intermediate stages during the research process and underwent peer and faculty review. Finally, students analyzed their data, interpreted their results in light of the existing literature, presented their research to the class in the form of PowerPoint talks, and produced scholarly papers on their work. In the Winter, students conducted short, intense research projects on topics of their choice, wrote papers based on that research, and presented their work to the class.

March 24, 2011



Bowens	Wesley	Т		A002098	75
Student's Last Name	First	Mid	dle IC	Number	
10009, 20009	Animal Beha	avior and Zoology			
Program or Contract No.	Title				
		27-SEP-2010	18-MAR-20	11	32
		Date began	Date ended		Qtr. Credit Hrs.

EVALUATION:

Written by: Heather Heying, Ph.D., and Bret Weinstein, Ph.D.

Wes (Wesley) did very solid work in this program, gaining facility with evolutionary theory, empirical research, and statistics. He is a frequent and valuable contributor in seminar, and clearly thinks frequently and deeply about many of the concepts discussed in the class. He was also an active participant on field trips, and an engaged member of the learning community. He clearly spent many hours outside of class thinking about the program material and he has strong aptitude for evolutionary thinking.

On exams, Wes frequently did very good work, including on questions concerning kin recognition in warblers, and alternate male strategies in bluegills. He did a very good job applying a theoretical model of trade-offs on the first exam, and his understanding of trade-off dynamics was also evidenced by his even stronger analysis of a hypothetical evolutionary scenario on the second. The natural history project that Wes did on the barred owl was excellent: he produced an excellent poster, which was visually accessible and full of relevant scientific information that he gleaned from primary sources. In written work on seminar readings, Wes had insight on several topics, and clearly wrestled actively with the material on human evolution and epistemology in behavioral research. Furthermore, the debate that his team set up on the trade-offs between altricial and precocial species was extremely well researched and scientifically rigorous; the elaborate structure that this team created produced a rich discussion for everyone.

In statistics, Wes did good work. He completed all of the homework, and demonstrated increasing facility in statistical description and inference over time, through his ability to decide what tests to employ on datasets not his own. He did struggle to interpret the statistics in a published paper in Winter quarter, but it is clear that he can understand key statistical concepts and tests. Furthermore, his field notes and assignments in behavioral methods were, when completed, well done.

For his research project in Fall quarter, Wes was part of a four-person team investigating the effects of photoperiod on egg production in chickens. The team did solid work early on in the generation of several sets of hypotheses, and worked hard to create an experimental design that would effectively answer their questions. They found no support for either of their tested hypotheses—that egg number, and egg weight, would vary with photoperiod, in opposite directions—and conducted appropriate statistical tests to determine those results. Their final research paper, however, was weak in many regards, including that it suffered from inadequate literature review, theoretical background, and interpretation of results, and a confusing methods section. The talk that the team gave was solid, however, as it provided some background for their study, made clear the abundant thinking and work that they had done on this system, and allowed them the opportunity to answer questions, which they did skillfully.

For his Winter research project, Wes undertook, with two partners, a literature review of the evolution of the skin boat in the Northern hemisphere, with particular focus on developing a model for how qayaqs and umiaks—closed and open boats used by peoples in modern-day North Pacific Rim—might have provided opportunities for the peopling of the Americas. This work was extremely well done, including an extensive literature review, a thorough and well-written history, and the creation of an actual skin boat. The presentation that the team gave was very compelling, and the boat itself—constructed of fabric over a

March 24, 2011



Bowens	Wesley	т	AC	0209875
Student's Last Name	First	Middle	e ID Nu	umber
10009, 20009	Animal Beha	vior and Zoology		
Program or Contract No.	Title			
		27-SEP-2010	18-MAR-2011	32
		Date began	Date ended	Qtr. Credit Hrs.

wooden frame—stunning. With this work, Wes has again demonstrated strong analytical and intellectual skills.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) - Total 32

- *8 Animal behavior
- *8 Evolutionary theory
- *4 Evolutionary ecology
- *4 Population biology
- *4 Zoology
- 4 Statistics

*denotes upper-division science credit



Bowens	Wesley	Т		A00209	875
Student's Last Name	First	Midd	le	ID Number	
30387	"We're Here!	II			
Program or Contract No.	Title				
		29-MAR-2010	11-JUN-:	2010	16
	-	Date began	Date ended		Qtr. Credit Hrs.

DESCRIPTION:

Faculty: Charles Pailthorp (Philosophy); Bret Weinstein (Biology)

Students, Spring Quarter, were expected to approach the natural order, including humankind, from an evolutionary point of view, the view Darwin gave canonical form in *On the Origin of Species*. In contrast, they also were asked to use their eyes and minds without the filters of institutionalized knowledge, with a fresh view and fresh thinking about what the appearances of things reveal. The faculty objective was that students approach the natural world as if they were on new ground, not in the usual schoolyard to which they had become so well adapted, or at least accustomed.

Students were assigned a set of common readings: Darwin, *On the Origin of Species* (selections); other readings drawn from the Norton Critical Edition, *Darwin*, edited by Appleman; Dawkins, *Climbing Mount Improbable*, and chapter 11 (on memes) of *The Selfish Gene*; Diamond, *Guns, Germs and Steel*; Wiener, *The Beak of the Finch*. They also read selections from Hume's *Enquiry* and Kant's "Preface" to *Critique of Pure Reason*. Two essays were assigned: "The Better Angles of Our Nature" by Weinstein and Lahti; and "The Moral Life of Babies" by Paul Bloom. Students were encouraged to read articles found in the *Stanford Encyclopedia of Philosophy* on scientific explanation and the philosophy of biology. They also were asked to find and read an additional book that supplemented the curriculum in a way they saw fit. Readings circumscribed the territory students were to explore while guided by their own compass. Faculty lectures variously offered one magnetic pole and at other times more than one.

Students carried out a "Naturalist's Eye" project. They were asked to study an organism in the field and avoid what *experts* say about what they were seeing. Students were expected to use their own (evolved) abilities to see what was in front of them, to notice patterns and frame hypotheses, and to consider how these might be tested. Students were warned that they were unlikely get far in a few short weeks. They could discover, however, with a persistent effort of at least four hours in the field each week, something about the authority they had been born to as one of the human kind.

In mid-May the program took a field trip to visit the Willard lava bed, an exceptionally pristine natural setting near White Salmon, Washington. The trip included a visit to the Oregon Zoo, where students tested their "naturalist's eye" on animals in artificial settings.

At the end of the quarter, each student presented something new in her or his thinking, something that had arisen during the quarter. Some addressed readings, others critiqued faculty lectures, and some showed what their "naturalist's eye" had discovered. Presentations included essays, "next slide please" talks, drawings, and one was a lesson in dance.

EVALUATION:

Written by: Bret Weinstein, Ph. D.

This program was an experiment for students as well as faculty. Our objective was to concentrate on 'how to think' rather than 'what to think.' For most students, including Wes (Wesley), that was a radical departure

July 14, 2010



Bowens	Wesley	Т		A00209	875
Student's Last Name	First	Mide	dle	ID Number	
30387	"We're Here!				
Program or Contract No.	Title				
		29-MAR-2010	11-JUN-	2010	16
		Date began	Date ended		Qtr. Credit Hrs.

from most prior schooling. It was, however, perfectly consonant with Wes' long history of direct engagement with nature. Wes resonated with the program objectives and method from the very beginning.

Wes participated enthusiastically and attended all classes. He was a frequent contributor to class discussions, and his comments were invariably excellent. He has a gift for conveying complex things in a clear and succinct manner. He further brought a sense of excitement about the material and a level of engagement that drew other people in. He did all that was assigned him and more. He showed deep motivation to explore, imagine and refine, but his primary mode was challenge. Wes is courageous and uses his excellent analytical skills in both the natural and social context.

Wes contributed strongly to our class field trip, his natural intuitive sense providing a model that other students with less experience could follow. Wes spent many hours, above and beyond that which we expected. Much of that time was spent in deep contemplation and discussion.

Wes' naturalist eye project involved the study of several raptor species. They proved difficult to observe directly, but he was undaunted, sparing no effort to find and get close to the birds.

His greatest success was not represented by any particular product. Wes found validation within the We're Here program for things he had previously discovered in isolation. Finding that legitimate, productive inquiry can sound like a seasoned naturalist—that no special defense need be made of synthetic science—seems to have put Wes on a new path full of rewards.

Wes can be rightly proud. His work in the We're Here program was extraordinary. And he deserves a great deal of credit for the skills and motivation he brought to the table. The program served him well, and he returned more on the investment than we could have hoped.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 16

- 8 Evolutionary Biology
- 4 Natural History
- 4 Philosophy: Epistemology of Biology



Bowens	Wesley	Т		A002098	75
Student's Last Name	First	Mid	ldle	ID Number	
20283	Native Ame	rican Knowledge a	nd the Power	of History	
Program or Contract No.	Title				
		04-JAN-2010	19-MAR-2	2010	12
		Date began	Date ended		Qtr. Credit Hrs.

DESCRIPTION:

Faculty: Frances V. Rains, Ph.D., Kevin Francis, Ph.D.

This program was an integrated study of Native American history, philosophy of history, and historical research methods. Several questions guided our investigation: What knowledge counts in history? How have histories changed with more expansive views of what counts as reliable source material, including oral histories and traditions? How have histories changed with the growing authority and participation of indigenous thinkers? We explored these issues through "classic" accounts of Native American history by western historians, as well as recent critiques of such accounts by both Native and non-Native scholars. Core texts included Robert Berkhofer, *The White Man's Indian*; Steven Conn, *History's Shadow*; Helen Hunt Jackson, *A Century of Dishonor*, Vine Deloria, Jr., *Custer Died for Your Sins*; Shepherd Krech III, *The Ecological Indian*; Omar Stewart, *Forgotten Fires: Native Americans and the Transient Wilderness*; David Hurst Thomas, *Skull Wars*; Donald Fixico, *The American Indian Mind in a Linear World*; and Winona LaDuke, *Last Standing Woman*. Students examined these topics in lectures, seminars, workshops, and a field trip to the Suquamish Reservation. Students wrote six one-page essays and four three-page essays on the seminar reading; they participated in writing workshops each week and revised their essays based on student and faculty feedback. Students also completed an independent research project that culminated in a written report and oral presentation.

EVALUATION:

Written by: Frances V. Rains, Ph.D.

A NOTE TO THE READER: Before proceeding, please read the Student's Own Evaluation of Personal Achievement.

Wes (Wesley) Bowens took a positive interest in the material covered in the lectures and readings. He brought an earnest, open mind to the material covered in the lectures and readings. Wes attended program events, seminars and workshops regularly throughout the quarter. He completed most of the required work and submitted a loosely organized portfolio to document it. In the future, he could include course material such as the syllabus, covenant, to provide an easy reference and more comprehensive portfolio.

His written assignments demonstrated an excellent, overall comprehension of the major events and themes in this program. In seminar, Wes was an active participant who made significant contributions to our discussions. His comments and questions demonstrated a well-developed understanding of the complex ideas in the readings and lectures. He was also very attentive to the dialogue and often raised fresh ways to think about an issue. This was particularly helpful in seminar when perspectives and ideas were being recirculated.

Wes also took leadership of one of the twice-weekly book seminars, along with another student. He and his partner prepared a springboard activity for readings in the Fixico and Deloria texts. For his portion of this activity, Wes used contrasting images of traditional and contemporary Native Americans. Volunteers were to match traditional Native housing structures with these contrasting images positioned on the board. While more organization and forethought might have made the activity go more smoothly, the activities launched

April 5, 2010



Bowens	Wesley	т		A0020987	'5
Student's Last Name	First	Mic	ddle l	D Number	
20283	Native Ame	rican Knowledge a	nd the Power o	of History	
Program or Contract No.	Title				
		04-JAN-2010	19-MAR-20	010	12
		Date began	Date ended	(Qtr. Credit Hrs.

discussions of Fixico and Deloria's main themes and concepts. Wes and his partner also had developed a series of questions to generate discussion, using cited quotes from the readings to preface each question. He and his partner were attentive to lulls in the dialogue and readily re-ignited discussion with their prepared questions.

Wes completed four one-page essays and three, three-page essays related to the seminar readings. His essays demonstrated a solid grasp of historiography skills, as the papers weighed and questioned the evidence of authors to determine whether the points they raised were logical and credible. His writing was well organized and his points were supported with specific references and examples from the readings. In Writers' Workshop, Wes applied the feedback from faculty and students, to his own work. While Wes writes well, his writing demonstrated stronger clarity across the quarter. Wes also offered valuable constructive feedback, both verbal and written, to other students in the Writers' Workshops.

For his independent research project, Wes investigated the portrayals of the Shawnee leader, Tecumseh and his brother, Tenskwatawa, the Shawnee Prophet. His paper, *Tekamthi and Native Resistance*, queried whether the label, "Great American Leader", was apt for Tecumseh. Through an examination of Tecumseh's [Tekamthi] life, a variety of episodes were raised as questionable in their representation drawing on specific references from historical scholars. Applying historiographical analysis, the paper raised intriguing contradictions about the lives of these two Native brothers. For example, the role of the younger brother, Tenskwatawa, has often been portrayed in a lesser role to the leader, Tecumseh. Yet, the paper pointed out how some historians now question whether it was Tenskwatawa, who was in charge of major events attributed to Tecumseh. The paper stopped short, after identifying such contradictions, however, leaving a more complete analysis undeveloped. Overall, the final paper demonstrated a sound grasp of the function of historiography, and an ability to apply the skills appropriately to a historical query. The paper would have benefited from a deeper analysis and more citations. The citations that were used, demonstrated a fair understanding of APA style. The paper was well-organized and flowed well.

Page 2 of 2

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 12

- 3 Native American History
- 3 Historical Theory and Practice
- 3 Expository Writing: Topics in Native American History
- 3 Independent Research and Writing: Advanced Topics in Native American History

April 5, 2010



The Evergreen State College - Olympia, Washington 98505 THE STUDENT'S OWN EVALUATION OF PERSONAL ACHIEVEMENT

Bowens	Wesley	Т	A00209875
Student's Last Name	First	Middle	ID Number
Native American Knowledg	ge and the Power of History		
Program or Contract Litle		04-JAN-2010	19-MAR-2010
		Date Began	Date Ended

This quarter was valuable learning experience. Most importantly I walked away with a clear concept of selfdirection for my academic pursuits at Evergreen and beyond.

I created a solid foundation for my studies in the future with the learning I've achieved.

This was my second quarter at Evergreen, and with Native studies, and I remain committed to my education, but my focus has shifted. I've been interested in Native cultures since childhood but my passion lies in the natural world. My course of study and career track coming into Evergreen was anthropology, specifically ethnobotany. Initially my plan was to complete a dual degree to study environmental anthropology in graduate school but I have come to simplify my goals to align with my passions and abilities. Primarily I've come to understand that the field of anthropology isn't in line with my personal beliefs, as I don't find the study of people appropriate. From here forward I plan to focus on environmental science and creative writing.

This quarter was valuable in several ways. I benefitted strongly from weekly writing workshops and discovered in interest in becoming a writing tutor. My communication ability grew through seminar discussions with fellow students. Much of the class focused on the field of anthropology. This allowed needed personal reflection on my academic choices and helped open my mind to further understanding and communication with cultural sensitivity. This program was centered in the concept of historiography, a concept which I developed a strong sense and will be able to apply to my studies in the future.

Moving forward I've established some necessary academic goals. I've learned to manage my time much more efficiently by balancing my work, school and study schedule. I will utilize the library as a facility for study and homework, an environment separate from home and conducive to study. I will use the writing center as a springboard for advancing my writing ability and laying the foundations for my future achievements. Most importantly I understand fully the importance of staying current and completing my best work in order to create a solid resume for graduate school.

WEAMENA

Student's Signature 21-MAR-2011 Date Faculty Member's Signature (optional)



Bowens	Wesley	Т		A002098	75
Student's Last Name	First	Middl	le	ID Number	
10130	American Fr	ontiers: Homelands	and Empire		
Program or Contract No.	Title				
		28-SEP-2009	18-DEC-2	2009	16
		Date began	Date ended		Qtr. Credit Hrs.

DESCRIPTION:

Faculty: Kristina Ackley, Ph.D., Zoltán Grossman, Ph.D.

American Frontiers: Homelands and Empire is a year-long program. In the fall quarter we considered alternate histories of Anglo-American expansion and settlement in North America, critically evaluating the difference between "frontier" versus a homeland. We studied how place and connection is nurtured, reimagined and interpreted, particularly in Indigenous communities, placing a particular emphasis on the Pacific Northwest and on the study of recent immigrants. Students reflected on the images and mythology of American frontiers and critically contextualized their place in popular culture. Throughout, the program aimed to complicate history as a social process by interrogating the interaction of cultures and identities in the formation of places. Book-length texts included, Erdrich, Tracks; Limerick, Legacy of Conquest: the Unbroken Past of the American West, Meeks, Border Citizens: the Making of Indians, Mexicans, and Anglos in Arizona; Saunt, Black, White and Indian: Race and the Unmaking of an American Family; Thrush, Native Seattle: Histories from the Crossing-Over Place: Johnson, Roaring Camp: the Social World of the California Gold Rush; Drinnon, Facing West: the Metaphysics of Indian-Hating and Empire-Building; Rothman, Devil's Bargains: Tourism in the Twentieth-Century American West, and Crosthwaite, Puro Border: Dispatches, Snapshots, & Graffiti from the US/Mexico Border. In addition we read theoretical and historical essays, learned about local Native nations as well as federal Indian policy, and viewed documentaries and films. We also heard from guest speakers from the TESC Center for Community-Based Learning and Action, InterIm (Seattle's International District CDA), Pinay sa Seattle, Inmigrantes Unidos de Shelton, and the author Luis Rodriguez. Students were required to attend seminar twice a week, as well as several weekly lectures and workshops. Students wrote weekly responses on the texts based on careful reading of short passages, two brief formal essays, a final paper that contextualized historical roots of a present-day place or social movement, and a self-evaluation.

EVALUATION:

Written by: Zoltán Grossman, Ph.D.

Wesley Bowens was enrolled full-time in the fall quarter of the *American Frontiers: Homelands and Empire* program. Wes did very good to excellent work in exploring the juxtaposed themes of Frontier and Homeland, Empire and Periphery, and the Indigenous and Immigrant experience.

Wes attended nearly all class activities—faculty lectures, films, field trips, and guest speakers. Wes participated in the book seminars on the readings, offering strong insights, and sometimes taking the discussion in a new and constructive direction. He also wrote four out of five in-class assignments in seminar, and made thoughtful reflections on book excerpts selected by other students.

Wes wrote detailed weekly papers responding to the seminar readings, submitting 7 out of 9 required papers (2 of them on time in seminar). Wes made helpful comments on other students' weekly papers on our class Moodle website. In his paper on *Puro Border*, Wes comments on the Anglo-American view of the Sonoran Desert as an arid wasteland, in contrast to the Tohono O'odham view of the desert and its creatures as part of their home: "Long before this place was bound by imaginary lines and political boundaries, before Euro-Americans decided otherwise, the Desert People had a house in which they thrived...Some of its mysteries

September 10, 2010



Bowens	Wesley	т		A00209875	
Student's Last Name	First	Mid	ddle	D Number	
10130	American F	rontiers: Homeland	ds and Empire		
Program or Contract No.	Title		•		
		28-SEP-2009	18-DEC-20	009 1	6
		Date began	Date ended	Qtr	Credit Hrs.

are greater than any human may come to understand, even to those who are most intimate with the place. We come to remember that a place is valued for much more than its resource wealth or as land free for the taking. Rather because it exists, and we exist in it. And if we stop and listen, one may remember that home is the center of human life and that it becomes our duty to be its caretakers."

In the first formal synthesis essay, Wes counterposed Frederick Jackson Turner's "Frontier Thesis" to the Louise Erdrich novel *Tracks*, as well as Patricia Limerick's critical history *The Legacy of Conquest*. He critiques Turner's contention that the "frontier" was a meeting point of "civilization and savagery," by pointing to the pre-Columbian Hopewell and Cahokia mound cultures as examples of Native civilizations.

In the second formal synthesis essay, Wes examined questions of cultural mixing in U.S. history by comparing *Border Citizens* (by Eric Meeks) with *Black, White and Indian* (by Claudio Saunt). He compared Native history in both Arizona and Oklahoma with the strong thesis that "The introduction of wage-based labor into Native American cultures drastically changed Native American ways and quality of life." The essay would have benefited by more even treatment of the two texts, and more specific examples or facts from the texts.

In the final research paper, Wes examined the Western Shoshone Nation in Nevada, focusing on a pair of Native rancher sisters, Mary and Carrie Dann. The excellent paper focused on the struggle of the Western Shoshone for recognition of their sovereign rights under the 1863 Treaty of Ruby Valley. Wes covered a wide range of issues--including grazing rights, gold mining, nuclear waste storage, and nuclear weapons testing. He showed the historic roots of these current issues in anthropological misrepresentations of Great Basin tribes, the original treaty violations, and ultimately in the Doctrine of Discovery. He submitted two drafts of the paper to make it more polished.

Wes presented the research and images to the class as part of the Intermountain regional panel. Despite the sad circumstances facing the Western Shoshone, the 7-minute presentation started with a positive quotation from a tribal leader, and ended with the recent United Nations committee affirmation of their treaty. Wes incorporated the image and map effectively into his presentation. He also made helpful written comments on other students' presentations, and asked good questions of other presenters.

Wes compiled a well-organized portfolio of the quarter's work. It speaks to Wesley's sense of organization and attention to detail. Wes began the quarter doing very good work, and ended the quarter doing excellent work. Wesley Bowens grew as a thinker and writer on the history of the "frontier," and its legacy in the present-day United States and the world, and earned a full 16 credits.

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SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 16

- 4 Pacific Northwest History
- 4 Geography: Boundaries and Migration
- 4 Native American Studies: Federal Indian Policy to 1975
- 4 American Studies: Race, Ethnicity and Class in the West



The Evergreen State College - Olympia, Washington 98505 THE STUDENT'S OWN EVALUATION OF PERSONAL ACHIEVEMENT

Bowens	Wesley	Т	A00209875
Student's Last Name	First	First Middle ID I	
American Frontiers: Home	lands and Empire		
Program or Contract The		28-SEP-2009	18-DEC-2009
		Date Began	Date Ended

In American Frontiers we explored the themes of Frontier and Homeland, contrasting Turner's Frontier Thesis with modern historical and indigenous viewpoints. Concepts I took away from this program are: Divide and Conquer strategies, the effects of colonialism and imperialism, the vanishing native, native perspective, gender and cultural relations, homelands, immigration and border disputes, treaty rights, the geographical importance of place, environmental racism and justice and thorough study in Native American history. Exploring these concepts has been vital in building the foundations I will carry through my career here at Evergreen and beyond. I've examined personal philosophical beliefs and previous historic knowledge through exploration of the readings and discussion in seminar. I feel that I applied a strong effort in the material covered this quarter and that my work doesn't exemplify my full potential.

This quarter proved to be challenging and invaluable in personal growth and academic pursuits. I spent much of my time adjusting to Evergreen, learning how the class structure and participation works and reexamining/ redeveloping my worldview. The workload was more than I've experienced previously. I've learned to read material entirely differently, taking notes and exploring thoughts as I read. I've overcome some fears of expressing my thoughts and opinions, primarily through participation in seminar. I've found my ability in expressing ideas through writing has improved, as by the end of the quarter I find myself writing more concisely, expressing the ideas I want to communicate more clearly and getting closer to writing in my own voice.

My strengths this quarter include attendance, participation in class, thorough note taking and connecting with peers. Expository writing and research are my main challenges currently and I plan to develop these skills through coursework and use of the writing center. Time management was also a challenge this quarter. Commuting from Tacoma drained much of my study time and I found I wasn't able to focus and reflect on the material for as long as I would have liked in order to present unique concepts and reflections through my writings and discussion in class. Moving forward, I feel prepared for academic study here as I now feel at home here in Evergreen and Olympia.

Kanens

Student's Signature 21-MAR-2011 Date Faculty Member's Signature (optional)

Date

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EVER GREEN

The Evergreen State College • Olympia, WA 98505 • www.evergreen.edu

EVERGREEN TRANSCRIPT GUIDE

Accreditation: The Evergreen State College is fully accredited by the Northwest Commission on Colleges and Universities.

Degrees Awarded: The Evergreen State College awards the following degrees: Bachelor of Arts, Bachelor of Science, Master of Environmental Studies, Master of Public Administration and Master In Teaching. Degree awards are listed on the Record of Academic Achievement.

Educational Philosophy:

Our curriculum places high value on these modes of learning and teaching objectives:

- Interdisciplinary Learning
- Collaborative Learning
- Learning Across Significant Differences
- Personal Engagement
- Linking Theory with Practical Applications

Our expectations of Evergreen Graduates are that during their time at Evergreen they will:

- Articulate and assume responsibility for their own work
- Participate collaboratively and responsibly in our diverse society
- Communicate creatively and effectively
- Demonstrate integrative, independent, critical thinking
- Apply qualitative, quantitative and creative modes of inquiry appropriately to practical and theoretical problems across disciplines, and,
- As a culmination of their education, demonstrate depth, breadth and synthesis of learning and the ability to reflect on the personal and social significance of that learning.

Our students have the opportunity to participate in frequent, mutual evaluation of academic programs, faculty and students. In collaboration with faculty and advisors, students develop individual academic concentrations.

Academic Program

Modes of Learning: Evergreen's curriculum is primarily team-taught and interdisciplinary. Students may choose from among several modes of study:

- Programs: Faculty members from different disciplines work together with students on a unifying question or theme. Programs may be up to three quarters long.
 Individual Learning Contract: Working closely with a faculty member, a student may design a one-quarter-long, full-time or part-time research or creative project. The contract document outlines both the activities of the contract and the criteria for evaluation. Most students are at upper division standing.
- Internship Learning Contract: Internships provide opportunities for students to link theory and practice in areas related to their interests. These full- or part-time opportunities involve close supervision by a field supervisor and a faculty sponsor.
- Courses: Courses are 2-6 credit offerings centered on a specific theme or discipline.

The numerical and alpha characters listed as Course Reference Numbers designate modes of learning and are in a random order.

Evaluation and Credit Award:

Our transcript consists of narrative evaluations. Narrative evaluations tell a rich and detailed story of the multiple facets involved in a student's academic work. A close reading of the narratives and attention to the course equivalencies will provide extensive information about student's abilities and experiences. Students are not awarded credit for work considered not passing. Evergreen will not translate our narrative transcript into letter or numeric grades.

Transcript Structure and Contents: The Record of Academic Achievement summarizes credit awarded, expressed in quarter credit hours. Transcript materials are presented in inverse chronological order so that the most recent evaluation(s) appears first.

Credit is recorded by:

Quarter Credit Hours:	Fall 1979 to present
Evergreen Units:	1 Evergreen Unit (1971 through Summer 1973) equals 5 quarter credit hours
	1 Evergreen Unit (Fall 1973 through Summer 1979) equals 4 guarter credit hou

Each academic entry in the transcript is accompanied by (unless noted otherwise):

- The Program Description, Individual Contract or Internship Contract which explains learning objectives, activities and content of the program, course or contract.
- The Faculty Evaluation of Student Achievement provides information on specific work the student completed and about how well the student performed in the program
 or contract.

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- The Student's Own Evaluation of Personal Achievement is a reflective document written by the student evaluating his or her learning experiences. Students are
 encouraged but not required to include these documents in their official transcript, unless specified by faculty.
- The Student's Summative Self Evaluation is an optional evaluation summarizing a student's education and may be included as a separate document or as a part of the student's final self- evaluation.

Transfer credit for Evergreen programs, courses and individual study should be awarded based upon a careful review of the transcript document including the course equivalencies which are designed to make it easier for others to clearly interpret our interdisciplinary curriculum. These course equivalencies can be found at the conclusion of each of the Faculty Evaluation of Student Achievement.

The college academic calendar consists of four-eleven week quarters. Refer to the college website (www.evergreen.edu) for specific dates.

This record is authentic and official when the Record of Academic Achievement page is marked and dated with the school seal.

All information contained herein is confidential and its release is governed by the Family Educational Rights and Privacy Act of 1974 as amended.

If, after a thorough review of this transcript, you still have questions, please contact Registration and Records: (360) 867-6180.