

A Community of Learners, Educators, and Leaders Create Wider Spheres of Influence at  
Prescott College PhD Program in Sustainability Education

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The problems we are facing are linked.  
It is not a set of problems.  
It is a system of problems.  
Now it is time to look at the system of solutions.  
-- Janine Benyus, Nobel Laureate Symposium, 2011.

## A. Learning Outcomes

### A.1. Enduring Understanding/Big Ideas:

As the first doctoral program in sustainability education in North America, Prescott College offers a unique model of a cohort-based learning environment for its doctoral students. Started in 2005, as of spring 2014, the program is running on its ninth year. Currently, altogether, there are 64 active students who are at different stages of the program. While 11 of these 64 will be graduating in May 2014, a new cohort-10 will enter the program in August 2014. So far we have graduated about 45 PhD students. After teaching/advising in the program for the last six years, I have witnessed the unfolding evolution of this program. I am pleased to share some of its salient features.

The primary goal of the PhD Program in Sustainability Education is nothing less than preparing a new generation of sustainability educators and leaders who possess the necessary knowledge, skills, and dispositions to effectively serve in those roles in their own respective communities. Most uniquely, the program focuses on not only on economic and ecological sustainability but also on social equity as well as bio-cultural and linguistic diversities. Building on Prescott College's over five decades of reputation on experiential, adventure, and ecological education, the PhD program's learning environment is hands-on, engaged, collaborative, and participatory.

I teach and advise with my own unique view of what a new generation of educators and leaders need in order to effectively dream, design and create a new world. Over the last 25 plus years of teaching in US higher education, I am realizing that this generation of educators and leaders have distinct learning needs which are largely unmet by the existing graduate programs. I have called them the **RICUVAC generation** because while they are extremely **Resourceful, Inventive and Connected**; they are equally **Uncertain, Volatile, Ambiguous and Complex**. In the absence of appropriate academic environment, they are pretty disheartened by the regular higher education academic institutions. Most of the time they stay away from these institutions. My effort has been to make the PhD program not only be attractive but also be rigorous and meaningful to them.

Overall, core to my teaching and advising are the following conceptual departures. First, I am convinced that we have to shift from educating "about" and "for" sustainability to education "as" sustainability. This invites some elaboration. While several of other higher education programs focus on what we call education "about" and "for" sustainability; we embrace the idea of what Stephen Sterling calls "education as sustainability" (Sterling, 2001). I tend to simplify this as follows. While education "about" and "for"

sustainability end up cautioning and teaching students: “why and how to do no harm or do less harm;” we take significant steps deeper. We teach: “why and how to do good and be beneficial.” One of the founders of the PhD program, Rick Medrick defines this approach in these words:

Education *as* sustainability, on the other hand, is the study of the educational process with the goal of reforming education itself. Specifically, it is a response to the dominant transmissive educational methodology of imposed instruction and transfer of information. In contrast, transformative educational methodology engages the learner through experience, participation, and reflection in the construction of meaning and knowledge (Mezirow et al., 2000). Achieving sustainability in all dimensions of human existence depends on adopting an education paradigm that manifests and supports change toward a sustainable, secure society. In other words, “you cannot learn without changing, or change without learning.” The Ph.D. Program strives to contribute to synergistic learning and change in consciousness, education, culture, and, ultimately, society (as in PhD Handbook, 2013).

We do not want our graduates to follow the dream of “competing and consuming.” Rather, we would expect them to be “caring and conserving,” and “designing and dreaming.” Echoing this spirit, I have defined the “art of learning sustainability as reorienting human species to become beneficial members of an abundant biosphere” (Parajuli, 2010). In that sense, my curriculum content does not aim to merely achieve sustainability but moves towards achieving what I call “resilient abundance.”

Second, in order to enable them to imagine, design and create a resilient and an abundant world, I tend to push students away from “ideologies that blind” to “seeking ideas that work.” Third, as I evoke the quote from Jenine Benyus above, I have also come to conclude that it helps to move away from discursive analysis of “systems of problems” (often leading to paralysis) to find designs that seek “systems of solutions.” Fourth, it is equally important to move away from banking on unitary and universal knowledge to seeking and celebrating pluriversity of traditions of knowledge. I cover these under the banner of bio-cultural as well as linguistic diversities. Fifth, I prepare students not only to protest but also to make proposals and seek solutions through design, innovations, and entrepreneurship. It does not mean we should not protest and ignore extreme forms of abuse of earth and/or people or inequities; we should be actively resisting them. Yet it seems wise to make our protests and critiques implicit in what we are proposing. My effort has been to create the most synergistic blend between what one is “advocating” and what one is “inquiring.” Sixth, one of the unique secrets of our success is in how we have shifted from a competitive, and individualistic model of learning to a collaborative, and mutual mode of learning. We accomplish this through what is known as the “cohort model” of teaching and learning.

Finally, I want to reflect on how I try to build bridges between what integral theorists call the “interiority” and “exteriority.” Through a process called, “zooming-in” and “zooming-out,” I try to engage students to gauge their inner worlds as well as the outer world. It is not enough comprehending what needs to be done in the world; there are too many to choose from. Eventually what makes a difference is helping each educator/leader

to figure out what is his/her inner calling? What is s/he gifted to do? What is the best way for him/her to engage? Not one mode of intervention works for all.

Just as the student, as their educator/advisor, I have a very special and an intimate place to engage in the world. My purpose has been to help my students find that intimate place/space with ease while also articulating a deep purpose. Some call this educating/leading by heart. Because my students and co-learners may not remember exactly what I did or what I said at what point in their PhD journey. But I trust that they will always remember how I made them feel, at any point. Was I caring? Was I trustworthy? Was I credible? Was I a barrier or a facilitator in pursuing their unique paths? Did I enlarge and foster or reduce and diminish their “art of the possible?”

As can be depicted from the dissertation titles and abstracts of a sample of seven graduates of the program (see section B.2), the Ph.D. program provides an opportunity for advanced, interdisciplinary, student-centered learning that addresses important global and local issues. It is based on the traditions, values, and educational philosophies that have differentiated Prescott College from other educational institutions since the 1960s. This Ph.D. Program emphasizes rigorous scholarship, while encouraging and validating critical thinking, and community-engaged, action-oriented research. I consider this as our effort to perfectly blend “academic rigor” with “personal vigor.” The program fosters open discourse through respect for diverse perspectives and scholarly collaboration. Integrated, interdisciplinary thinking promotes the evolution of ecological understanding, psychological/philosophical consciousness, and social learning for a humane and sustainable future.

#### A.2. Content Knowledge:

The program expects each student to demonstrate substantive knowledge base and mastery. This may include:

- Theoretical, and critical thinking skills with historical depth
- Substantive thematic knowledge in content and of practices in the field of student’s area of specialization
- On student’s topic of interest, as appropriate, ability to connect the knowledge base from natural sciences, social sciences (and humanities), and learning sciences
- Comparative analytical skills and ability to navigate between local, bioregional, national, and global trends and variations within these

One of the examples I want to share to illustrate this is a report on biological, cultural, linguistic and musical diversities by a team of five students from PhD cohort-9. This is done as part of one of the assignments for one of the foundational courses I teach: ***Sustainability Theory and Practice in Education*** (STPE). This assignment is from the second semester (Spring 2014). Recently shared with the whole cohort for further comments and discussions, this report shows the promise of collaborative teamwork. I urge you to visit this team report and make sense of it yourself.

[http://prezi.com/h3su5cnoiuai/tuning-to-the-songs-and-sustenance-of-the-land-biocultural-diversity-loss-and-preservation-in-a-global-age/?utm\\_campaign=share&utm\\_medium=copy](http://prezi.com/h3su5cnoiuai/tuning-to-the-songs-and-sustenance-of-the-land-biocultural-diversity-loss-and-preservation-in-a-global-age/?utm_campaign=share&utm_medium=copy)

#### A.3. Skills Sets:

The program places high value in offering advanced skills of inquiry, research, and communication. They may include:

- Choose and design an inquiry framework and use appropriate methods and tools (research design)
- Collect evidence for the research question/topic, analyze, and interpret data
- Communicate your ideas and findings effectively in oral, written, digital, and multimedia formats

#### A.4. Attitudes:

The program not only inculcates appropriate values, worldviews and dispositions among its students, we believe in application of knowledge into practice through design, innovations, initiatives, and even entrepreneurship. Students are not only capable of naming and interpreting problems but actually offering better solutions. We accomplish this through our focus on:

- Relevance: Ability to situate research and practice in the socially and historically embedded contexts and to the particular communities concerned
- Resourcefulness: Ability to generate social, economic, and natural capital to support innovations and initiatives one is pursuing
- Flexibility and dynamism: Ability to initiate effective change at various levels—individuals, classrooms, communities, and organizations.

A.5. Behaviors and (Effective) Actions and Engagements in the Community. We consider this as part of overall professional preparation of/for the program graduates.

These may include:

- Professional code of ethics pertaining to human communities as well as larger than human species/communities. Prescott College's Institutional Review Board ensures that this is achieved in dissertation proposal and during dissertation study.
- Integral worldviews, insights and skills in sustainability, justice, and diversity
- Expertise to seek and offer integrative and imaginative solutions in human social systems as well as in natural systems and learning systems.
- Capable, ethical, and committed leadership to create a world that is not only ecologically sustainable, but also socially equitable, and bio-culturally diverse.

Let me share another assignment in the STPE course that I teach at the PhD program. In assignment #3 of the spring semester, I ask each student to **wildly dream about the future and create pathways and design** to accomplish the dream, step by step:

As an exercise in applying some of the ideas in diversities and various forms of justices at a particular context, each of you (or a team of two of you) will identify a place, community/organization, initiative or a classroom of your choice. You are

encouraged to come up with your own format for this exercise. Some preliminary guidelines are as follows:

1. **Where are we now and why? Diagnosis of the situation:** past present and future (project at least up to 2025). Here please offer a diagnosis of all the elements covered in assignment #1 (food, water, climate, energy, green economy and governance, biological, cultural and linguistic diversities) in the context of your own chosen community or initiative.
2. **Where do we want to go? Wildest Dreams** (think 2020, 2025, 2050). What do you see, want, dream to happen by then? Why do you want that to happen? What are the 4-5 potential options and why you choose this or a combination of options/pathways?
3. **How do we reach there? Design** of new program and proposal you are formulating. Consider equity and justice (broadly defined including food, water, climate, livelihoods, energy, shelter), ecological sustainability, biological, cultural, and linguistic diversities, ecosystem health, conservation economy, and wellbeing of all species. Please create at least 4 scenarios, discuss the strengths and weaknesses of each scenario and why you are choosing a certain scenario/pathways.

As I expected, students have used this assignment to spell out (some more than others) what they want to accomplish in the PhD program and thereafter in their lives. For example, one of the students discovered that what she really wanted to do was to create a *Subsistence University* in and for her home-region of Appalachia in the United States of America. She is busy preparing and designing for that dream. Inspired by this assignment, another student is busy designing what she calls the *Priya Project: Trans-Species Therapeutic Service-Learning*. Another student started a family farm-based ecological education in the Mojave Desert in California. Yet another student is pioneering an inquiry into a post-developmental discourse of bio-cultural diversity and regeneration in Egypt. As his wildest dream project, one other student is designing a food-hub and local food economy in Bloomington region in Indiana. Yet another student from Zimbabwe has abandoned her previously held belief that her rural neighbors in Zimbabwe are “poor and underdeveloped.” With new personal vigor and academic rigor, she is articulating a theory that they are “resilient and can create an abundant world.” These are the kinds of stories that have nurtured and sustained me over the years.

## B. The Classroom or Educational Setting

### Program Design

The design of the PhD program is flexible enough to accommodate many individual learning goals of various professionals, but is focused sufficiently to generate collaborative and challenging scholarly discourse within what we call a “cohort-model” of learning. Breadth of the content and process in sustainability education is achieved through participation in a shared sequence of three foundational courses during the first

year of the program. Our core also includes a common area of interdisciplinary Modes of Inquiry. Depth is achieved through study of individually designed courses (worth 24 credits) and the dissertation/project process during the second, third and fourth year of the program.

In a nutshell, key elements of this 96-credit PhD program are as follows:

-- 96 semester credits completed with satisfactory evaluation by faculty of all learning/study documents, written materials, and oral presentations within 4-7 years time

-- Attendance at all 7 residencies of 5-6 days each (3 during first year, 2 during second year and 1 each for third and fourth years)

-- Foundational courses (24 credits) in:

1. Sustainability Theory and Practice for Education I and II (8 credits)
2. Sustainability Education and Transformational Change I and II (8 credits)
3. Modes of Scholarly Inquiry, Systems Thinking, and Action Research I and II (8 credits)

--Elective Area Courses: 4 to 8 independent study courses: conceptual, integrative, and theoretical in focus area of student's breadth and depth (24 credits). These courses designed by students in collaboration with course mentors. In most cases these courses are one-to-one between the mentor and the individual student.

-- Advanced Research Methodologies and Methods course (6 credits)

-- Mentored practicum (6-12 credits)

-- Doctoral level competencies demonstrated through Comprehensive Assessment (6-12 credits). This includes, publishable Qualifying Paper that is reviewed and approved by the full Doctoral Committee and approved Dissertation/Project Proposal & Presentation (6-12 credits)

--Dissertation/Project & Presentation (24 credits)

This limited-residency program combines interdisciplinary inquiry with intense, individualized research and practice through faculty instructed courses, mentored study courses, and dissertation committee review. Four years (one can take up to seven years to complete the program) of concentrated study. Each student's research culminates in a dissertation thesis that reflects the high academic rigor expected of a doctoral dissertation and also includes a socially significant application in any topic of student's choice.

### B.1. Curriculum, Instruction and Assessment Practices Aligned With Learning Outcomes.

Ensuring that learning outcomes are achieved at every level of student's PhD journey, the following benchmarks are established:

1. The **culminating paper** at the end of the first year of six foundational courses. At the end of the first year of study, a student also presents a **poster** during an annual **Sustainability Education Symposium** that summarizes the first year learning as well as plans for second-year elective area courses.
2. Internships and Advanced Research Methods
3. A **Qualifying Paper** (QP, during second-third year)
4. **Dissertation Proposal**: (DP, during second-third year)
5. **Dissertation** study and thesis (during 3rd-7<sup>th</sup> year of study)

One of the unique aspects of Prescott College learning environment is that students have to submit **self-evaluation narrative** in each of their courses including the dissertation proposal, and doctoral thesis. In order to thoroughly examine student's performance and progress, we do assess in a variety of settings: a) each of the three core/foundational courses; b) elective area courses; and c) Ph.D. Dissertation Project, including QP, and DP. In order to gather cross-reference and variety of sources for assessment, we use: a) students for their own assessments and self-evaluations; b) the core faculty/advisor of the student; and c) the Dissertation Committee chair and members. Usually, the core faculty/advisor also chairs the dissertation committee, which comprises of two content area members and an external advisor.

#### Assessment Rubric for Each Student

Each doctoral student is assigned a core faculty/advisor from the beginning of the program. Through the core faculty/advisor, a student's progress is monitored and assessed. Below, I outline how I use a set of learning outcomes at three levels for each of my advisees: knowledge, skills, and dispositions (K, S and D). These are then tallied with what each student might have accomplished within degrees of accomplishments. I identify degrees of accomplishment in the range of: a) introduced (I); b) practiced (P); and c) demonstrated (D). Obviously, each stage in the process and core and elective area courses are focused on certain aspects of the knowledge, skills and dispositions. For example, if the **Sustainability Theory and Practice in Education** (STPE) course is focused more on the knowledge base and historical and critical theory aspects, the course **Sustainability Education and Transformational Change** (SETC) is focused on the internal dynamic of each student, his/her worldviews, ethics, and professional dispositions. We intentionally cover both what is considered the "interiority" and "exteriority" in developmental and integral theories. In the **Modes of Inquiry** (MOI) course, the first semester is usually focused on covering the range of methods and research designs available as options for students, while the subsequent semesters are more focused on ethics of research and research design and development and use of tools in a particular setting. The same can be used for student's accomplishments on their elective area courses, DP and QP, and dissertation thesis.

#### B.2. Characteristics of Authentic Engagement:

I would like to share a sample of completed PhD dissertation thesis abstracts as an example of how our PhD students are authentically engaged in their own communities



while contributing to the field thematically and through meaningful research. Although a sample, the themes and the geographic areas covered in these studies captures the diversity of our students as well their areas of inquiry and expertise.

Jens Deichmann (***Thesis Title: A Comparative Evaluation of Governance of the Water Commons in the Upper and Middle Rio Grande Basins of New Mexico***).

Core Faculty/Thesis Chair: Pramod Parajuli

This dissertation is a study of two water management systems and their respective potential for adaptive change. It compares the principles of traditional common-pool resource communities with the policies and practices of contemporary *acequias* and the Middle Rio Grande Conservancy District. A review of the biophysical environment and relevant water laws and institutions provides a historical and environmental perspective on how the two distinct systems evolved into their current practices. New Mexico is experiencing a severe drought, prompting increasingly urgent calls for priority administration of senior water rights while causing a sharpened focus on limiting water use. Shortage sharing is a traditional practice in common-pool resource cultures, as are other measures to manage a limited and vital resource, including monitoring, sanctions, exclusion of free-riders, equity of use, and reliance on democratic institutions to ensure collective decisions. These principles and practices are present to varying degrees in both systems and provide solid bases upon which to innovate and adapt to new conditions. The challenge will be to mobilize the will to change enough to adapt while preserving the functions and honoring the cultural values represented in each system; in other words, to build resilience into the systems.

Rosemary Logan (***Thesis Title: Getting Smart to do Good: Transformative learning experiences of Expeditionary Learning graduates***).

Core Faculty/Thesis Chair: Rick Medrick

This dissertation explores the intersection between transformative learning (TL), education for sustainability (Efs), and Expeditionary Learning (EL). According to the experiences of EL graduates from three high schools, does participation in an EL high school result in transformative learning? If so, what are the elements that compose this (or series of) transformative learning experience(s) and what learning structures within EL specifically support TL? These transformative learning experiences include changes in identity, paradigmatic or mental modal change, and/or behavior change. Lastly, the research reveals the sustainability-supportive outcomes that emerge from the transformative learning experiences of EL graduates; including attitudes, characteristics, and behaviors. Results from the research indicate there are three learning realms from which students experienced transformative learning experiences. These realms included: community, immersive cross- bio-cultural learning experiences, and academic challenge and authentic learning in the real world. The research uses grounded theory as the overarching methodology to study data from an exploratory case study, as well as to guide the data collection and interpretation process. Objectives for this study include: 1.

To increase understanding on of the impact of EL practices on its graduates, with specific emphasis placed on transformative learning experiences; 2. To investigate the process of transformative learning 3. To understand the relationship between EL graduates' TL experiences and sustainability-supportive attitudes and behaviors.

Abeer Salem (***Thesis Title: Negotiating Sustainability: Reclaiming Ecological Pathways to Bio-Cultural Regeneration in Egypt.***)

Core Faculty/Thesis Chair: Pramod Parajuli

What can an indigenous Egyptian paradigm for social evolution that represents the composite of bio-cultural diversities of Egypt and multiple bio-regions within it look like? With such exploratory inquiry in mind, this dissertation research focuses on analyzing the practice of development in Egypt through the lens of place, critiquing its performance from a bio-cultural perspective, and exploring a pathway to social evolution that focuses on the uniqueness and diversity of places. In conversation with local development community members on both ends of the development equation --the sending and receiving ends-- the research elicits place-based and locally inspired responses for bio-cultural regeneration as a possibility for a more realistic, possible, and emergent pathway for social change.

While acknowledging there are multiple bio-cultural diversities in Egypt, the study focuses on the rural, Nubian and Bedouin bio-cultures as an entry point to assessing and exploring the bio-cultural regeneration perspective on social evolution in the Egyptian context. A multiple case study design that employs an eclectic data collection strategy is utilized, drawing information from semi-structured in depth interviews, observation, focus groups, group discussions, and conversations. The multiple narratives assembled in this dissertation also includes perspectives from Egyptian development thinkers and practitioners.

Kathy Lamborn (***Thesis Title: Beholding Nature: Contemplation and Connectedness.***)

Core Faculty/Thesis Chair: Pramod Parajuli

Two related studies, one for families and a second with adult and child members of an independent school community, suggest that our connections with the rhythms, processes, species, and cycles of nature, our love and feelings of affinity for nature, can be strengthened by practicing contemplation outdoors. In Study Number 1 urban and suburban families participated in an eight-week Contemplation in Nature program, and in Study Number 2, children and adult members from an urban school community practiced sitting quietly and recording observations in a journal twice a week for six weeks. Changes are measured using The Inclusion of Nature in Self Scale (Schultz, 2001), the Connectedness to Nature Scale (Mayer & Frantz, 2004), the Child and Adolescent Mindfulness Measure, and the Mindfulness Awareness and Acceptance Scale (Brown & Ryan, 2003). Analysis of journal entries provides additional insight into the participants' experiences of self, experiences of the world outside of self, experiences of the self in relationship with other community members, and expressions of biophilia values. The

journals reveal a picture of nature found in suburban and urban landscapes as it is perceived and experienced by the children and adults who were willing to take time out of busy schedules to pause, sit, listen, and learn. The journals, therefore, open a window through which we can view the everyday and extraordinary experiences of being a human in and as part of nature.

Antonio Lopez (*Thesis Title: Greening the Media Literacy Ecosystems: Situating Media Literacy within an Ecological Critique*).

Core Faculty/Thesis Chair: Pramod Parajuli

Media literacy is touted as a necessary life skill for cultural citizenship, yet as it is generally practiced there is little engagement with sustainability issues. In order to gain insights into why this is the case, this research focused on how media literacy practitioners use metaphors to frame the role of media education in the world. By analyzing how metaphors frame worldviews, through this study it was possible to determine what kinds of issues are important to media literacy educators. This involved analyzing web site documents, teacher resources and interviewing key practitioners within a bounded system I call the “media literacy ecosystem.” Drawing on an ecocritical framework, I analyzed the discourses of the media literacy ecosystem by using a variation of critical discourse analysis (Bowers, 2008; Bowers, 2009; Bowers, 2012; Cox, 2009; Dryzek, 2005; Garrard, 2004; Hansen, 2009). Such an analysis helped determine how media literacy practitioners participate in meaning-making systems that reproduce pre-existing environmental ideologies that perpetuate unsustainable cultural practices in education. The findings show that media literacy education is grounded in 19<sup>th</sup> century print-based pedagogy that excludes ecological ways of knowing. It further demonstrates that media literacy educators are primarily operating within a mechanistic paradigm, which makes it difficult to bridge sustainability with ecoliteracy. However, by problematizing the “industrial” discourses of media literacy education, the aim was to raise awareness and to offer potential solutions. As such, I theorized a model of media literacy that incorporates ecoliteracy (called Ecomedia Literacy) and outlined a path forward so that sustainability becomes a priority for media literacy educators.

Nicole Apelian (*Thesis Title: Restorative Ecotourism as a Solution to Intergenerational Knowledge Retention: An Exploratory Study with Two Communities of San Bushmen in Botswana*).

Core Faculty/Thesis Chair: Denise Mitten

The Khoisan are the most genetically ancient people on earth, with a population once numbering 300,000. The Bushmen of Southern Africa are quickly losing their 40,000 years of indigenous knowledge due to colonialism, globalization, modernization, assimilation, land loss, and marginalization. There are now large gaps in generational

knowledge, especially as people move into settlements and leave their traditional homelands. The restoration of indigenous knowledge requires the paths of intergenerational cultural transmission to be reestablished (Florey, 2009). This dissertation examines whether indigenous knowledge can be perpetuated intergenerationally with the aid of indigenous-based restorative ecotourism. Indigenous-based restorative ecotourism promotes empowerment and local engagement, is responsive to local value systems, and aims to halt marginalization in communities. Using exploratory research within a qualitative paradigm and ethnographic narrative inquiry and semi-structured interviews, I examine the effect of ecotourism on two communities of Nharo and Ju/'hoansi Bushmen through two questions: 1) How has ecotourism changed these two communities and 2) Can restorative ecotourism support intergenerational knowledge retention? The data show that these Nharo and Ju/'hoansi Bushmen want to keep their culture, that they see value in the intergenerational transmission of indigenous knowledge, and that this is happening in both communities involved in ecotourism ventures. I conclude that this system of ecotourism is culturally restorative, and leads to increased indigenous knowledge retention in these communities without further exploitation.

Marna Hauk (***Thesis Title: The Resonant Weave of Regenerativity Across Scales: Patterns from Nature and Bioculture Catalyzing Earth Empathy, Regenerative Creativity, and Wisdom School Design***)

Core Faculty/Thesis Chair: Rick Medrick

Patterns from nature make us ethical teachers and learners. What if intrapersonal empathy, nature creativity, and wisdom education are the same phenomenon at different scales of emergence? And what if this emergent, trans-scale phenomenon can accurately be called regeneration? We can harvest this insight to invigorate education beyond sustainability: by regenerating education with Earth, learning comes alive. This mixed methods research across three scales of self-organization surfaced patterns of regenerative emergence distilled into a transdisciplinary regenerativity index applied to the design of an innovative graduate institute. A complexity, emergent approach with vigor wove the rich bricolage of earth connectedness (scale 1 data), creative collaborations (scale 2 data), and semi-structured interviews with wisdom school founders (scale 3 data). Dense qualitative syntheses and coding as well as quantitative assessment of pre- and post- tests and demographic correlates surfaced insightful patterns from over one hundred research participants. Findings include how ecofractals, which are repeating patterns and processes from nature, and bioculture can regenerate compassion, creativity, and wisdom. This emergent fractal inquiry yielded significant insight into the self-similarity of regenerativity across scale that can guide educational systems design beyond sustainability.

### C. Schools/Institutions

#### C.1. Favorable Conditions—Organizational Policies and Practices:

Due to the following reasons, Prescott College seems to be an ideal institution not only to design, start, and host but also to offer a thriving environment for the PhD Program in Sustainability Education.

First, for the last 40 plus years, Prescott College has a proven record of offering leadership in ecological, experiential, adventure education and sustainability education nationally and globally.

Second, in addition to the low-residency masters programs in environmental sciences, humanities, education, and counseling psychology, various new residential masters programs are at different stages of approval, design, and development. The *Social Justice and Human Rights* program has begun since fall 2012. The *Food and Agriculture: Science, Systems and Society* has been approved by the Board and is expected to be formally launched in the near future. The residential masters program in *Ecological Design and Leadership* is also in good progress. Other masters level programs in the areas of *Sustainable Communities, Ecological Humanities, Conservation Ecology and Economy* are also in the process of design and development.

Third, the *Annual Symposium on Sustainability Education* of the PhD program has begun to get national and international attention, since its inception in 2009. A 5-6 day event, the Symposium is combined with the graduating event for the PhD students, dissertation and DP presentations, cross-cohort mutual learning and collaboration, featured keynotes, panels, and workshops. The Symposium has a potential of making a Prescott College-wide event with wider regional, national, and global reach.

Fourth, the first five issues of *Journal of Sustainability Education* have already put us on the national and global network and visibility among educators and professionals. The demand, reach, and readership of the journal is global in scope, and shows real area of growth (visit: [www.susted.com](http://www.susted.com)). Since 2013, we are simultaneously preparing three-four thematic issues (including this issue) and the progress has been encouraging. The journal could serve as a mouthpiece for the wider community of sustainability educators and inspire other publications, research reports, and community-based projects.

Fifth, with cross-college faculty participating in it, a new program of Global and Regional Studies has been created at the College. This venue will offer research and apprenticeships opportunities for PhD students in locations such as US-Mexico Border, Kino Bay, Andes/Amazon, Kenya and East Africa, Norway/Sweden, Navajo and Hopi reservations in US Southwest, and in Nepal/Tibet and the Himalayas.

## D. Communities

### D.1. Characteristics of Institution-Community Partnerships:

As my narrative above attest, the PhD Program is Sustainability Education at Prescott College expands and enriches the very notion of community and what is understood by institution-community collaborations/partnerships.

First, we recognize that each student is a member of her/his own community, in his/her own place of residence and/or practice/career. As a limited residency program each participating PhD student only spends some 40-45 days (for seven residencies) at Prescott College during the 4-7 years of the program. In that sense, we consider that the PhD program takes students on loan from their families, communities and careers for a very short period of time. Rather than bringing the student and her/his life and community to Prescott, Prescott's motto is to "meet them where the students already are." Thus we foster the larger sense of community by not dislocating/displacing the student from her place of residence and practice. There is no need of "homecoming" for our students after they graduate; their home and community have always been important part of our larger network of PC community. We do not ask them to loose their roots in their places and/or a sense of place and be in exile at Prescott just to take a degree. Philosopher of perennial polyculture and sense of place (Jackson, 1996), Wes Jackson would be proud of us why and how we do this.

Second, while we do not displace/dislocate students from their home communities to get a PhD degree; we intentionally create a deep and robust community of learners through our cohort model. This is perhaps one of the secrets to our success. We trust that creating a healthier and comfortable space and process for learning is equal or even more important than the thematic and subject area content, breath and depth we cover in courses. Many students feel and admit that the PhD program is their second community, but which is very intense and meaningful.

For example, the seven residencies, which are planned in thoughtful succession in someone's PhD journey have proved to be central to cement a student's relation to the cohort as well as the larger PhD community. While the orientation (takes place during August each year for new cohort) and fall (during the second year of the program) residencies enhance cohort-wide learning; the May colloquium and symposium are organized to facilitate cross-cohort learning, collaborations, rituals and celebrations. There are deliberate and in-built strategies to ensure that the PhD program is a collaborative learning community.

Third, how we plan seven residencies and incorporate rituals, festivities and celebrations are worth mentioning. I for one have adopted a motto that the "academic rigor" can be meaningfully achieved when it is blended and matched with "personal vigor" of each student. That requires a multi-sensory and multi-media approach to learning and teaching. It works when we pay attention to each student's learning style while offering all the help needed in every aspect of the PhD journey.

One of the brighter spots in the PhD program life has been how we have evolved with the idea of fall residency during the second year of the program, for each cohort. Starting with cohort-5 (2010 fall residency), we decided that we wanted to meet somewhere outside Prescott for this occasion. That year, we attended and presented at the American Association for Sustainability in Higher Education (AASHE) in Denver, Colorado and added a 3-day retreat at Estes Park in the Colorado Rockies. Cohort-6 (fall 2011) opted for attending and presenting at the Bioneers in San Rafael, California and then we created a 3-day retreat for ourselves at the coast of Point Reyes, California. Cohort-7 planned a week-long colloquium at the Vieques Island, off of Puerto Rico. There our focus was to closely study the ecological and equity options for the Vieques island as they are entering the post-US Navy futures. In a similar spirit, cohort-8 opted to visit food-hubs, land-trusts, community-supported agriculture, and even community-supported restaurants in Vermont. Most likely, we will be heading to one of the Hawaiian Islands in fall 2014 as the cohort-9 seeks to combine “surf and turf” elements of those islands in their learning recipe.

To conclude, what I have narrated above is a story of this PhD program coming of age. Nine-ten years have been a good incubating period for that. As a co-creator and a witness of this unfolding, I am confident what we offer at Prescott College is unassuming, unique, and authentic. Of course, each student has taken, and will take these discourses and processes as suits her/his “personal vigor” at that point in their lives. Yet, I trust that what we offer as the PhD journey remains a significant mark in their life’s longer journey. There is enough evidence that what has been achieved in one student’s life is percolating into his/her/his larger spheres and community of influence. The PhD program has not only prepared a new generation of sustainability educators and leaders; they are indeed already at work! As educator David Orr, would have it, for them, “hope is the verb with its sleeves rolled up.”

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