



MVI Internship Program 2021

ACADEMIC INTERNSHIPS

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ACADEMIC INTERNSHIPS WITH THE MONTEVERDE INSTITUTE (MVI)

The mission of the Monteverde Institute Internship program is to provide unique opportunities that allow in-depth participation in community initiatives. Each intern holds a specific role in a selected project that results in a positive contribution to the Monteverde community. We do this while providing a solid support in academics, theory, methods, and communication. In addition to individual internships, we provide team opportunities where professional skills regarding organization, communication, collaboration, and decision-making are enhanced.

Interns with the Monteverde Institute work with local experts involved in a variety of community and environmentally based initiatives that investigate or contribute to local issues. Students receive background information and the skill sets necessary to accomplish their tasks. While participating in this program, students also have the opportunity to gain skills in team-building, conflict resolution, project management and cultural awareness. Additionally, throughout the internship we provide multiple levels of supervision and expertise to ensure that the student has the most authentic and beneficial experience possible. Furthermore, we insist that all projects are presented publicly, so all internships end with community accountability and feedback. All completed work is documented and cataloged in our digital, publicly accessible database for use by future generations. These learning internships help the MVI promote its mission to *advance sustainable living at the local and global level through place-based education, applied research, and collaborative community programs.*

About the Monteverde Institute: The Monteverde Institute (MVI) is a member-governed Costa Rican non-profit association dedicated to education, applied research, and community engagement. Founded in 1986, the MVI from its inception has facilitated place-based, experiential learning in education abroad, grounded in the environmental, social, economic and cultural realities of the Monteverde Zone communities. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health, and spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the Bellbird Biological Corridor. Student field work and service learning make valuable contributions to our local communities and families.

Types of Internships: This program offers three different types of internships: project-based without academic modules, project-based with academic modules (includes five modules and/or Spanish), and team internships. Please see Modules and Prices sheet for a complete list of the academic modules we offer.

Team Internships: Today's employers are looking for college graduates who have both technical skills and the ability to collaborate and function as a team. Team Internships are part of the Monteverde Institute's effort to enhance our students' education through real-world experiences in a team setting. Students work on-site with community partners as a multi-disciplinary team focused on a clearly defined and significant project. These internships are located in Section A of this packet.

Duration: The MVI offers internships starting from 4-10 weeks (longer options can be arranged). Internships are available from the end of March – beginning of August (project dependent).

Recommended credits: Recommended Credits are based on contact hours: 15 lectures hours = 1 credit; 30 lab/ field hours = 1 credit; 15 discussion class hours = 1 credit.

Homestays: During their internship, students will have the opportunity to live with Costa Rican families, which will enhance their Spanish and cultural knowledge. Homestays include a single room, three meals, and laundry service. Arrangements may be made for students who prefer to live independently.

How to apply: Internships are based on trimesters, with some flexibility in dates. There are three application deadlines that prospective interns should keep in mind:

1. Spring Trimester (January-April): **November**
2. Summer Trimester (May-August): **March**
3. Fall Trimester (September – December): **July**

Apply by completing the following and sending to interns@mvinstitute.org:

1. Cover letter of interest
2. Curriculum vitae / resume
3. Application form
4. Two letters of recommendation
5. Application fee: \$50. Please make checks out to “Asociación Instituto Monteverde” and send to:

Instituto Monteverde Internship Program
Apartado 69-5655, Monteverde
Puntarenas, Costa Rica

Note: Applications will not be considered until the application fee is received. Please allow two weeks for checks to arrive. Must be 18 or older to apply. Accepted applicants will be required to provide proof of travelers’ insurance, and proof of valid passport.

For more information about applying, please contact: interns@mvinstitute.org



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Section A – Research: Conservation/Habitat Restoration
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TEAM INTERNSHIP: POTENTIAL FACTORS THAT AFFECT THE SUCCESSFUL RESTORATION OF TROPICAL HABITAT

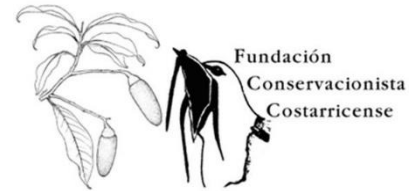
WITH THE MONTEVERDE INSTITUTE (MVI) AND LA FUNDACIÓN CONSERVACIONISTA COSTARRICENSE (FCC)

Intern Position: Research Assistant

Supervisor: MVI staff

Time Frame: May-July

Internship Length: 6-10 weeks



Internship description: There is a lack of information on variables that may affect seedling survival and growth, such as soil, slope, optimal planting time, fertilizer use, and maintenance. The socioeconomic willingness, abilities, and reasons for reforestation should correspond with research recommendations for efficient and effective habitat restoration. Therefore, the primary task of the team of interns that take on this project is to conduct research on variables related to reforestation and make recommendations for future habitat restoration efforts, relating this research back to sociocultural norms where applicable. This team research project is for 3-6 participants and will use an in-process database that includes established research plots with tagged seedlings, planting information (date, height), precipitation data, and reforestation participant data. This team internship may assess the survival rates and growth rates of a minimum of 10 tropical tree species by assessing several of the following variables:

1. *Effects of wind exposure on seedling survival and growth.*
Monteverde experiences moderate-to-high winds from November to March. To what extent does wind exposure desiccate seedlings and reduce survival and growth?
2. *Effects of solar exposure on seedling survival and growth.*
How do shade-tolerant species fare in pastures and at forest edges compared to other species?
3. *Seedling survivorship within different life zone ranges.*
There are three life zones in Monteverde and tree species tend to be specific to each zone. Is tree survival and growth affected by location within the life zone (lower edge, middle, upper edge)?
4. *Seedling survivorship related to soil characteristics.*
Soils are phosphorous-poor ultisols with a varying level of organic layer. What role do

variables such as nutrient levels, compaction, and organic layer depth play in seedling survival and growth?

5. *Effects of fertilizer application at time of planting.*

Does the application of fertilizer (10-30-10) aid the survival and growth of seedlings?

6. *Minimum maintenance regimes for seedling survival and growth.*

There is controversy on the methods of weed management around seedlings. Local farmers believe that grasses provide shade during the dry season, which benefits the seedlings. General botanical knowledge suggests otherwise. Our ongoing research studies four different tree species with differing maintenance regimes (full year, partial year, and no weed removal).

7. *Effects of reduced precipitation on seedling survival and growth rates.*

Given the predictions of reduced precipitation in Costa Rica due to more frequent El Niño events, what tree species will be more resistant to drought during their initial stages of growth and recuperation from transplant shock? This will provide important information for reforestation efforts when incorporating drought-resistant species into their programs.

8. *Economic feasibility of enhanced reforestation techniques.*

Important to reforestation programs is farmers' willingness to participate. What is the cost-benefit analysis of proposed reforestation techniques (e.g., fertilizer applications, seedling maintenance) and how much/how often are farmers willing to pay and implement enhanced reforestation techniques?

9. *Geo-referencing reforestation and factors affecting seedling survival and growth.*

Data representation in their geographical formats provides key insights into distributions and patterns that may affect habitat restoration.

Requirements: A strong interest in nature and reforestation is required. Previous experience with data entry and GPS is recommended, but not required. Applicants should demonstrate stamina for fieldwork and be eager to get dirty and wet in the forest. The ideal intern is detail-oriented and presents good organization skills.

Key areas of internship: Forestry, Botany, Conservation, Soil Science, Tropics, Statistics, Research, Biology, Agronomy, Plant Physiology, Economics, Tropical Ecology, Geography, Reforestation

Background information: Based on research of the Three-wattled Bellbird (*Procnias tricarunculatus*) in Costa Rica, the lack of protection of habitat on the Pacific slope of the country has led to the decline of this species. In 1998, the Fundación Conservacionista Costarricense (FCC) of Monteverde, Costa Rica changed its course from research to conservation through the initiation

of native tree reforestation on the Pacific slope. Over 150,000 trees have been distributed to land owners and 10% of these trees have been planted on wildlife refuges owned by the FCC. As the reforestation effort was established, several questions regarding reforestation techniques have arisen. There is very little information on seedling survival, growth rates of trees, factors affecting survival and growth rates (solar exposure, wind exposure, fertilizer applications), competition (maintenance), ranges of species, precipitation, soil characteristics, and herbivory (especially leaf cutter ants). These are important considerations for effective restoration of tropical habitats. This information is also important for successful reforestation by landowners who lack the resources necessary to implement optimal reforestation methods. Research plots have been established by the FCC to examine the variables that may affect reforestation success. All trees are marked and numbered with genus/species codes. Most plots have been mapped using ArcInfo GIS.

Organization/project information: The Fundación Conservacionista Costarricense is dedicated to habitat restoration (in the form of reforestation) and habitat protection on the Pacific slope of Monteverde with a special emphasis on the protection of the Three-wattled Bellbird (*Procnias tricarunculatus*). The Foundation was formed in 2002 after investigation of the Three-wattled Bellbird showed that its decline was correlated with loss of habitat on the Pacific slope. The main activities of the foundation are habitat restoration with native tree species, protection of habitat, research, and presentations.

The Monteverde Institute (www.monteverde-institute.org) partners with the FCC in order to promote appropriate conservation practices through research of reforestation techniques in the Bellbird Biological Corridor (BBC). This is just one of the many programs where the Monteverde Institute combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the BBC.

Intern responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings.
2. Operate as part of a multi-disciplinary team that will examine various aspects of the research topic in a respectful and participatory manner.
3. Field data collection on no less than 8 internship workdays (e.g., seedling height and GPS data).
4. Learn basic tree measurement techniques used by FCC and apply them in the field to measure all trees planted within your assigned plots (if applicable).
5. Team development and function: Develop the team charter (defines the purpose of the team and how it will work), define project goals, objectives, operational strategy, credits, and communication.
6. Preliminary assessment of existing data (e.g., survival and growth rates that includes the identification of potential variables affecting these rates).
7. Learn basic identification characteristics of a few tree species that will be measured (although trees are temporarily marked and identified).
8. Research design and implementation (individual research design, team approval and coordination).
9. Data analysis and interpretation – individual written results.
10. Data analysis and interpretation – team combined results.
11. Individual final report (including literature review).
12. PowerPoint presentation preparation and delivery, as a tea

Final products:

1. For digital information: Data files (raw data and compilations). Include a written list of digital files (with accurate file names) created during the internship, with brief information on contents and how it's useful to the MVI and the FCC when content not obvious. Digital backup of all final files and original datasheets should be given to the internship coordinator at end of project.
2. Individual and team data analysis for reporting results of research topic.
3. Report of the specific internship topic (e.g., effects of wind exposure on seedling survival/growth)

Abstract: brief summary of topic and results

Introduction: detrimental effects of wind on plant survival and growth

Literature review

Study area and methods: site information, selected species, methods

Results: data summary as related to topic

Discussion: your interpretation and implications of the results, recommendations

Acknowledgements

Appendices

References

4. PowerPoint presentation of results



TEAM INTERNSHIP: TROPICAL HABITAT RESTORATION AND MAPPING

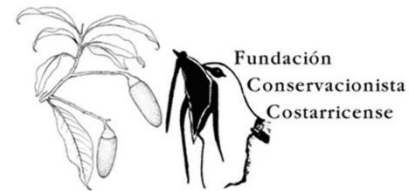
WITH THE MONTEVERDE INSTITUTE (MVI) AND LA FUNDACIÓN
CONSERVACIONISTA COSTARRICENSE (FCC)

Intern Position: Research Assistant

Supervisor: Randy Chinchilla

Time Frame: May-August

Internship Length: 6-10 weeks



Internship description: The Fundación Conservacionista Costarricense's (FCC) reforestation effort has been active for several years and now needs to expand tree tagging and mapping efforts so it can more efficiently move forward with restoration activities. Together with the Monteverde Institute, it has ongoing growth and survivorship studies that require technicians to annually revisit and re-measure a subset of the planted trees. This internship period coincides with the re-measurement period, therefore these two organizations are calling on interns to help retag and measure planted trees and create maps of where the trees are planted so they are easier to find by future volunteers. Students must be motivated to learn how to efficiently, accurately, and safely collect data in rugged conditions. Patience, flexibility, teamwork, perseverance, and an appetite for adventure will ensure a rewarding internship experience.

A new and related initiative in the Monteverde zone and the Bellbird Biological Corridor is to create a geographic atlas that includes different features that are characteristic of the area. These layers include riparian areas, streams, springs, roads, land use, trails, soils, social features, and forested areas, to name just a few, and all will be linked to specific data sets related to these layers. The atlas will be a free and useful source of basic information about the geography of Monteverde that can be used as a base for any other research project undertaken in the zone. The interns will contribute to this new and necessary project by continuing work on the first layer of this atlas: forest cover on Monteverde Institute and FCC property, including reforestation plots in the Rachel & Dwight Crandell Reserve, Finca Naciente de Vida, and Finca Rodríguez (time allowing). Oftentimes, due to the limitations of GPS, mapping trees must often be done by hand before the coordinates are inputted into ArcGIS.

The intensive nature of the field and computer work mandates that there be at least 2 interns willing and able to work together in both arenas. Field work to be carried out during this internship includes the following tasks:

- Measuring height, DBH, leaf cover, herbivory, and general health of trees.
- Permanently tagging trees that have newly reached a DBH of greater than 20cm.
- Replacing or resituating poles next to trees, if necessary.
- Hand-mapping trees using a compass and 10m by 10m plots.
- Adding new trees into the data set, if applicable and desired by the project supervisor.

Topics of discussion throughout the internship include the following themes:

1. *Growth rates of selected species of tropical trees.*

How do species of trees used for reforestation differ in their growth patterns? Which ones tend to grow quicker, taller, and wider? What patterns emerge in the data related to survivorship?

2. *Carbon sequestration.*

What is carbon sequestration and what is its relation to the carbon neutrality effort? How is it calculated? What factors affect sequestration?

3. *GIS, GPS, and geo-referencing reforestation and factors affecting seedling survival and growth.*

How is the product of a Geographic Information System (GIS) different from a paper map? What is the difference between raster and vector GIS? Data representation in their geographical formats provides key insights into distributions and patterns that may affect habitat restoration.

Requirements: A strong interest in nature and reforestation is required. Previous experience with data entry and GPS is recommended, but not required. Applicants should demonstrate stamina for fieldwork and be eager to get dirty and wet in the forest. The ideal intern is detail-oriented and presents good organization skills.

Key areas of internship: Forestry, Botany, Conservation, Statistics, Research, Agronomy, Plant Physiology, Tropical Ecology, Geography, Reforestation

Background information: Based on research of the Three-wattled Bellbird (*Procnias tricarunculatus*) in Costa Rica, the lack of protection of habitat on the Pacific slope of the country has led to the decline of this species. In 1998, the Fundación Conservacionista Costarricense (FCC)

of Monteverde, Costa Rica changed its course from research to conservation through the initiation of native tree reforestation on the Pacific slope. Over 150,000 trees have been distributed to land owners and 10% of these trees have been planted on wildlife refuges owned by the FCC. As the reforestation effort was established, several questions regarding reforestation techniques have arisen. There is very little information on seedling survival, growth rates of trees, factors affecting survival and growth rates (solar exposure, wind exposure, fertilizer applications), competition (maintenance), ranges of species, precipitation, soil characteristics, and herbivory (especially leaf cutter ants). These are important considerations for effective restoration of tropical habitats. This information is also important for successful reforestation by landowners who lack the resources necessary to implement optimal reforestation methods. Research plots have been established by the FCC to examine the variables that may affect reforestation success. All trees are marked and numbered with genus/species codes.

Organization/project information: The Fundación Conservacionista Costarricense is dedicated to habitat restoration (in the form of reforestation) and habitat protection on the Pacific slope of Monteverde with a special emphasis on the protection of the Three-wattled Bellbird (*Procnias tricarunculatus*). The Foundation was formed in 2002 after investigation of the Three-wattled Bellbird showed that its decline was correlated with loss of habitat on the Pacific slope. The main activities of the foundation are habitat restoration with native tree species, protection of habitat, research, and presentations.

The Monteverde Institute (www.monteverde-institute.org) partners with the FCC in order to promote appropriate conservation practices through research of reforestation techniques in the Bellbird Biological Corridor (BBC). This is just one of the many programs where the Monteverde Institute combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the BBC.

Intern responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings.
2. Operate as part of a multi-disciplinary team that will examine various aspects of the research topic in a respectful and participatory manner.
3. Field data collection on no less than 8 internship workdays (e.g., seedling height and GPS data).
4. Learn basic tree measurement techniques used by FCC and apply them in the field to measure all trees planted within your assigned plots (if applicable).
5. Team development and function: Develop the team charter (defines the purpose of the team and how it will work), define project goals, objectives, operational strategy, credits, and communication.
6. Preliminary assessment of existing data (e.g., survival and growth rates that includes the identification of potential variables affecting these rates).
7. Learn basic identification characteristics of a few tree species that will be measured (although trees are temporarily marked and identified).
8. Learn methods for entering tree data into ArcGIS and update the forested layer in the database.
9. Research design and implementation (individual research design, team approval and coordination).
10. Data analysis and interpretation – individual written results.
11. Data analysis and interpretation – team combined results.
12. Individual final report (including literature review).
13. PowerPoint presentation preparation and delivery, as a team.

Final products:

1. For digital information: Data files (raw data and compilations). Include a written list of digital files (with accurate file names) created during the internship, with brief information on contents and how it's useful to the MVI and the FCC when content not obvious. Digital backup of all final files and original datasheets should be given to the internship coordinator at end of project.
2. A series of databases that provide accurate data on growth and survival of individual trees in the study plots.
3. ArcGIS updated forested layer for the geographic atlas.
4. Individual and team data analysis for reporting results of research topic.

5. Report of the specific internship topic (e.g., methods of creating forest layers and next steps)

Abstract: brief summary of topic and results

Introduction: background information, reforestation efforts, reasoning for geographic atlas

Literature review

Study area and methods: site information, selected species, methods

Results: data summary as related to topic

Discussion: your interpretation and implications of the results, recommendations

Acknowledgements

Appendices

References

6. PowerPoint presentation of results



SEED GERMINATION TREATMENTS FOR SELECTED SPECIES OF TROPICAL TREES

WITH THE MONTEVERDE INSTITUTE (MVI)

Intern Position: Research Assistant

Supervisor: Lorenzo Vargas & Julio Rojas

Time Frame: Ongoing

Internship Length: 4-6 weeks

Internship description: This internship is designed for a self-motivated individual(s) to conduct formal research on germination success and rates through efficiency of direct seeding versus the use of germination beds. Skills learned throughout this internship include seed identification, nursery techniques, and data collection. This internship will provide basic information regarding germination techniques for several species of tropical trees.

Internship topics include the following themes:

1. *Germination.*
How do seeds germinate? Do tropical trees differ from temperate trees with respect to seed germination? What factors affect seed germination and why?
2. *Experimental design.*
What question(s) should be investigated in order to better understand ideal conditions for tropical tree species X's seed germination? How many treatments should be applied to the soil? How is data collected?
3. *Reforestation.*
What is the importance of reforestation to the Monteverde zone? Which tree species are typically used for reforestation and why?

Requirements: The ideal intern demonstrates an interest in ecology, experimental design, and data entry. Attention to detail and good organization skills are a must. Previous research experience is recommended but not required.

Key areas of internship: Forestry, Botany, Conservation, Soil Science, Tropics, Statistics, Research

Background information: Based on research of the Three-wattled Bellbird (*Procnias tricarunculatus*) in Costa Rica, the loss of Pacific slope habitat has led to the decline of this species. In 1998, the Fundación Conservacionista Costarricense (FCC) of Monteverde, Costa Rica changed its course from research to conservation and initiated a program of native tree reforestation on the Pacific slope of Costa Rica. Over 150,000 trees have been distributed to land owners and 10% of these trees have been planted on wildlife refuges owned by the FCC. The successfulness of the program relies upon seedling production from seeds gathered from nearby forests. As the reforestation effort was established, several questions regarding reforestation techniques have arisen. To date, no formal investigation has been performed regarding germination techniques and success rates. These are important considerations for effective restoration of tropical habitats by land owners who lack resources for the implementation of optimum reforestation methods.

Organization/project information: The Monteverde Institute (www.monteverde-institute.org) combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the Bellbird Biological Corridor.

Intern responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings.
2. Learn basic identification characteristics of trees species that will be studied.
3. Learn basic principles of seed germination: general germination techniques with an understanding of seed viability, germination inhibitors, enhanced germination methods, time requirements, and germination rates.
4. Seed collection and identification in the field.
5. Experimental design: Design an experiment with limited variables (different techniques or natural conditions) and with sufficient sample size per species, methodology, and selected analysis method.
6. Experimental set up: Create the required environment and site for the experiment as well as an equipment list.
7. Data collection and entry, analysis, statistical analysis, and interpretation.
8. Final report (including literature review).
9. PowerPoint presentation preparation and delivery.

Final products:

1. For digital information: Data files (raw data and compilations). Include a written list of digital files (with accurate file names) created during the internship, with brief information on contents and how it's useful to the MVI and the FCC when content not obvious. Digital backup of all final files and original datasheets should be given to the internship coordinator at end of project.
2. Data analysis for reporting results of research topic.
3. Report of the specific internship topic (e.g., germination rates of different *Ocotea* species)

Abstract: brief summary of topic and results

Introduction: methods of recruitment and success

Literature review

Study area and methods: site information, selected species, methods (sampling, data analysis)

Results: data summary as related to topic

Discussion: your interpretation and implications of the results, recommendations

Acknowledgements

Appendices

References

4. PowerPoint presentation of results



THE EFFECT OF HERBIVORY ON TROPICAL TREE SEEDLINGS PLANTED IN REFORESTATION EFFORTS IN MONTEVERDE, COSTA RICA

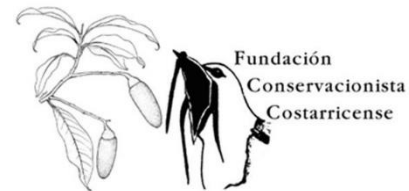
WITH THE MONTEVERDE INSTITUTE (MVI) AND LA FUNDACIÓN
CONSERVACIONISTA COSTARRICENSE (FCC)

Intern Position: Research Assistant

Supervisor: MVI staff

Time Frame: Jan.-April, May-Aug., Sept.-Dec.

Internship Length: 4-6 weeks



Internship description: This internship is designed for a self-motivated individual to conduct formal research on the effects of herbivory on plant survival, growth and general health. Skills learned over the duration of this internship include tree identification, insect identification, and data collection. There is a lack of information on variables that may affect seedling survival and growth, including herbivory; the results of the intern's research and the intern's recommendations at the end of the project will help further habitat restoration efforts in the Bellbird Biological Corridor. Herbivory occurs at a significant rate on newly planted seedlings, sometimes resulting in complete defoliation. In addition to leaf cutter ants, there are numerous other insects feeding on young growth.

The intern can choose from the following two research proposals, or may create a third option with the direction of the project supervisor:

- Identify, compare, and correlate herbivorous insect species, levels of leaf damage, and tree species growth/survival.
- Identify, compare, and correlate leafcutter ant damage, tree species, and proximity of anthills.

Internship topics include the following themes:

1. *Growth rates of selected species of tropical trees.*
How do species of trees used for reforestation differ in their growth patterns? Which ones tend to grow quicker, taller, and wider? What patterns emerge in the data related to herbivory?
2. *Herbivorous insects.*
What special adaptations do herbivorous insects have that allows them to predate on

plants? What are the most common insectivorous herbivores in the tropics? Are there similarities among the natural histories of these insects? How can they be controlled?

Requirements: Self-motivation and an interest in reforestation is a must. Previous independent research experience is preferred. The ideal intern should be willing to handle insects, if necessary.

Key areas of internship: Entomology, Forestry, Botany, Conservation, Tropics, Statistics, Research

Background information: Based on research of the Three-wattled Bellbird (*Procnias tricarunculatus*) in Costa Rica, the lack of protection of habitat on the Pacific slope of the country has led to the decline of this species. In 1998, the Fundación Conservacionista Costarricense (FCC) of Monteverde, Costa Rica changed its course from research to conservation through the initiation of native tree reforestation on the Pacific slope. Over 150,000 trees have been distributed to land owners and 10% of these trees have been planted on wildlife refuges owned by the FCC. As the reforestation effort was established, several questions regarding reforestation techniques have arisen. There is very little information on seedling survival, growth rates of trees, factors affecting survival and growth rates (solar exposure, wind exposure, fertilizer applications), competition (maintenance), ranges of species, precipitation, soil characteristics, and herbivory (especially leafcutter ants). These are important considerations for effective restoration of tropical habitats. This information is also important for successful reforestation by landowners who lack the resources necessary to implement optimal reforestation methods. Research plots have been established by the FCC to examine the variables that may affect reforestation success. All trees are marked and numbered with genus/species codes. Most plots have been mapped using ArcInfo GIS.

Organization/project information: The Fundación Conservacionista Costarricense is dedicated to habitat restoration (in the form of reforestation) and habitat protection on the Pacific slope of Monteverde with a special emphasis on the protection of the Three-wattled Bellbird (*Procnias tricarunculatus*). The Foundation was formed in 2002 after investigation of the Three-wattled Bellbird showed that its decline was correlated with loss of habitat on the Pacific slope. The main activities of the foundation are habitat restoration with native tree species, protection of habitat, research, and presentations.

The Monteverde Institute (www.monteverde-institute.org) partners with the FCC in order to promote appropriate conservation practices through research of reforestation techniques in the Bellbird Biological Corridor (BBC). This is just one of the many programs where the Monteverde Institute combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various

community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the BBC.

Intern responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings.
2. Field data collection on no less than 8 internship workdays (e.g., seedling growth, herbivory type)
3. Learn basic identification characteristics of tree species and insects that will be studied.
4. Research design and implementation: Design a study with limited variables with sufficient sample size per species, methodology, and selected analysis method.
5. Data analysis and interpretation.
6. Final report (including literature review).
7. PowerPoint presentation preparation and delivery.

Final products:

1. For digital information: Data files (raw data and compilations). Include a written list of digital files (with accurate file names) created during the internship, with brief information on contents and how it's useful to the MVI and the FCC when content not obvious. Digital backup of all final files and original datasheets should be given to the internship coordinator at end of project.
2. Data analysis for reporting results of research topic.
3. Report of the specific internship topic (e.g., effects of herbivory on seedling survival and growth)

Abstract: brief summary of topic and results

Introduction: detrimental effects of herbivory on plant survival and growth

Literature review

Study area and methods: site information, selected species, methods

Results: data summary as related to topic

Discussion: your interpretation and implications of the results, recommendations

Acknowledgements

Appendices

References

4. PowerPoint presentation of results



**THREE-WATTLED BELLBIRD TERRITORY USE,
DESCRIPTION, LOCATIONS, AND ABUNDANCE**

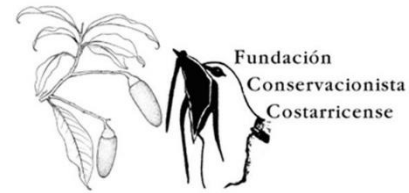
WITH THE MONTEVERDE INSTITUTE (MVI) AND LA FUNDACIÓN
CONSERVACIONISTA COSTARRICENSE (FCC)

Intern Position: Research Assistant

Supervisor: MVI staff

Time Frame: April-August

Internship Length: 4-10 weeks



Internship description: The intern will be required to walk several different transects in order to locate three-wattled bellbirds (*Procnis tricarunculatus*) and take data about the birds as well as their perches. Throughout this internship, the intern will learn how to identify bellbirds and their age, dialects, perch and territorial patterns, and natural history. The intern will also utilize a GPS to mark the perches of these birds. In-depth analysis of a bellbird's territory, which males defend from specific calling perches, has not been updated since Barbara Snow's study completed in the early 1970s. Comparison of previous territory positions, quantities, and descriptions will lend further insight into the natural history of the bellbird, as well as its population status.

Internship topics include the following themes:

1. *Three-wattled bellbird natural history.*
Taxonomically, how are bellbirds classified? What are their mating strategies and breeding patterns? Where do bellbirds live and, according to previous research, what are their migration patterns?
2. *Seed dispersal.*
What is the primary diet of bellbirds and which trees benefit from the bellbird as a primary seed disperser? How do patterns in fruit consumption by bellbirds influence habitat restoration?
3. *GIS and GPS.*
How is the product of a Geographic Information System (GIS) different from a paper map? What is the difference between raster and vector GIS?

Requirements: A general knowledge of ornithology, good observation skills, willingness to do extensive background literature review, and stamina to hike extensively through transects are all required. Knowledge of GPS and ArcGIS is recommended but not necessary.

Key areas of internship: Birds, Tropics, Research, Conservation, GPS systems

Background information: The three-wattled bellbird is a Central American endemic bird species in decline (listed as vulnerable on the IUCN Red List). The breeding and post-breeding region for this bird is the Monteverde zone of Costa Rica. The Bellbird Project began investigative work regarding the migration of the three-wattled bellbird (Monteverde population) in 1992 by George Powell and Robin Bjork. This project expanded its focus to all aspects of bellbird natural history with a specific interest in the causes of the decline of this species (led by Debra Hamilton). Once it was determined that one cause of decline was the lack of habitat on the Pacific slope, the project formed the Fundación Conservacionista Costarricense (FCC) to protect and restore Pacific slope habitat. Since 2001, the FCC has provided over 150,000 native tree seedlings to the region and has protected over 90 hectares of habitat. Continued investigation of the bellbird, in the form of census work, banding, phenology, and observations, has revealed information regarding molt patterns, diet, habitat use, and vocalizations.

Organization/project information: The Fundación Conservacionista Costarricense is dedicated to habitat restoration (in the form of reforestation) and habitat protection on the Pacific slope of Monteverde with a special emphasis on the protection of the Three-wattled Bellbird (*Procnias tricarunculatus*). The Foundation was formed in 2002 after investigation of the Three-wattled Bellbird showed that its decline was correlated with loss of habitat on the Pacific slope. The main activities of the foundation are habitat restoration with native tree species, protection of habitat, research, and presentations.

The Monteverde Institute (www.monteverde-institute.org) partners with the FCC in order to promote appropriate conservation practices through research of reforestation techniques in the Bellbird Biological Corridor (BBC). This is just one of the many programs where the Monteverde Institute combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the BBC.

Intern responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings.
2. Daily field census observations and data collection.
3. Learn basic bird identification techniques including bellbird dialects and ages by plumage.
4. Learn field observation and notes-taking techniques.
5. Development of methodology for census-taking.
6. Mapping of territories.
7. Data analysis and interpretation.
8. Final report (including literature review with specific focus on territories and Barbara Snow).
9. PowerPoint presentation preparation and delivery.

Final products:

1. For digital information: Data files (raw data and compilations). Include a written list of digital files (with accurate file names) created during the internship, with brief information on contents and how it's useful to the MVI and the FCC when content not obvious. Digital backup of all final files and original datasheets should be given to the internship coordinator at end of project.
2. Data calculations including abundance, time budget analysis, and territory distribution.
3. If time permits, an ArcGIS map layer of this year's census territories.
4. Report of the specific internship topic (e.g., three-wattled bellbird census results)

Abstract: brief summary of topic and results

Introduction: overview of the importance of periodic three-wattled bellbird censuses

Literature review

Study area and methods: site information, selected species, methods

Results: data summary as related to topic, including territory census data (date inhabited, date abandoned, frequency, visits, behaviors, food availability [collect seeds]), territory descriptions (size, preferred perches, elevation, tree species), bellbird time budget (times and duration in territory and at specific perches), and territory locations on a map of the region

Discussion: your interpretation and implications of the results, recommendations

Acknowledgements

Appendices

References

5. PowerPoint presentation of results

Literature:

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PRELIMINARY SOIL ANALYSIS AND PROFILING

WITH THE MONTEVERDE INSTITUTE (MVI) AND THE BELLBIRD
BIOLOGICAL CORRIDOR (BBC)

Intern Position: Research Assistant

Time Frame: June-August

Length of Internship: 4-10 weeks

Internship Description: This internship is a preliminary assessment of soil types found in the Bellbird Biological Corridor. Data from this internship will contribute to research that examines soils as a limiting factor in recruitment for trees in the Lauraceae family. Interns will evaluate small-to-medium scale soil variability by examining soil cores over several different plots throughout the BBC. Soil samples will be used to analyze pH, water content, composition, nutrient content, and possible contaminated content (near forest edges). Depending on duration of internship and background research obtained during this internship, interns may also be expected to use GPS for mapping soil boundaries.

Topics that will be covered during this internship may include the following:

1. Soil description
What are the soil classifications, horizon designation, diagnostic horizons, and horizon boundaries of area in question?
2. Soil boundaries
How are these boundaries usually delineated?
3. Techniques for mapping soils
What information already exists in this area e.g., small-scale soil maps, topographic maps, geological maps etc.? What are modern day methods/technology used for mapping?
4. Soil variability
What is soil variability? What are soil properties or patterns over different scale variabilities?

Requirements: Interest in soils and getting dirty, stamina for fieldwork and data collection, scientific article research skills, experience with data entry, organizational skills.

Key areas of internship: Soil Science, Ecology, Soil Profiling, Soil Variation, GPS Mapping, Vulnerable Bird Species

Background information: Changes in the climate contribute to biogeochemical variations in the tropics, which can affect plant production, decomposition, and nutrient cycling. Previous studies conducted in Costa Rican lowlands have found that tree species can affect nitrogen fixation and soil respiration. Gathering information about the soils found throughout the BBC will aid in further understanding ecosystem processes that may affect gene flow and Lauraceae recruitment. Because the Three-wattled Bellbird feeds on fruits from Lauraceae trees, understanding soil variability will grant insight to the protection of this endangered species.

Organization/project information: The Bellbird Biological Corridor (www.cbpc.org) is an ecological connection that spans 10 distinct life zones from the high elevation cloud forests (1850 masl) to the mangroves at the Gulf of Nicoya (0 masl) on the Pacific slope of Costa Rica. The corridor has been created by nine collaborating organizations to protect and enhance biodiversity, promote the sustainable use of natural resources while providing socio-economic benefits to the communities of the corridor. One of the pending decisions is how to identify and prioritize areas in need of habitat protection and restoration.

The Monteverde Institute (www.monteverde-institute.org) combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the Bellbird Biological Corridor.

Intern Responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings
2. Field data collection on no less than 8 internship workdays: e.g., soil sampling and GPS
3. Literature review
4. Data collection and entry, analysis, statistical analysis, and interpretation
5. Final report
6. PowerPoint presentation preparation and delivery

Final products:

1. For digital information: Data files (raw data and compilations). Include a written list of digital files (with accurate file names included) that were created during the internship. List should include brief information on contents and how it's useful to the MVI and the BBC when content not obvious. Digital backup of all final files and original datasheets should be given to the academic supervisor at end of project.
2. Interpretative materials on soil taxonomy (e.g., posters, digital files etc.,)
3. Data analysis for reporting results of research topic
4. Report of the specific topic (e.g., Soil types found in the BBC and implications for tree recruitment):

Abstract: brief summary of topic and results
 Introduction: biochemical variation and soil type
 Literature review
 Study area and methods: site information, soil sampling, methods
 Results: data summary as related to topic
 Discussion: your interpretation and implications of the results
 Acknowledgements
 Appendices
 References

5. PowerPoint presentation of results



DENSITY AND SPATIAL DISTRIBUTION OF TROPICAL TREE GENERA *OCOTEA* AND *CINNAMOMUM* IN PRIMARY AND SECONDARY PREMONTANE FOREST

WITH THE MONTEVERDE INSTITUTE (MVI) AND THE
BELLBIRD BIOLOGICAL CORRIDOR (BBC)

Intern Position: Research Assistant

Supervisor: Randy Chinchilla or MVI staff

Time Frame: Ongoing

Length of Internship: 4-10 weeks

Internship Description: This internship is a preliminary assessment of *Ocotea* and *Cinnamomun* tree spatial distributions throughout the Bellbird Biological Corridor. Eventually these data will be used in future studies to investigate differences in forest composition, phenology, and density and spatial distribution over different scales (local and landscape).

Initial assessment will involve locating, measuring, and taking GPS points and mapping all individuals with a ≥ 2 cm DBH, on at least six 20 x 50 meter plots. Interns will learn Lauraceae family characteristics and will be actively involved in tree identification for this study. Key questions include: What is the density of species found in these genera within these transects? Where are these trees located within each transect? Does recruitment vary by forest type or tree species?

Internship topics may include the following:

1. Plant identification

*What are some key morphological characteristics of the Lauraceae family and species found in the *Ocotea* and *Cinnamomun* genera that provide fruits for the Three-wattled Bellbird?*

2. Spatial distribution

What methods are used to map spatial distribution? What is the spatial distribution of species found in these genera?

3. Recruitment

What is tree species recruitment, and what are some limiting biotic and abiotic factors?

4. Phenology, seed dispersal and density-dependent predation

What role do phenology, seed dispersal, and seed predation play in the success of these species?

Requirements: Interest in forestry and getting dirty, stamina for fieldwork, data collection, and scientific article research skills. Data entry and organization are also requirements.

Key areas of internship: Ecology, Forestry, Mapping, Spatial distribution, Reforestation, Recruitment, Seed dispersal, Vulnerable Bird Species

Background information: Changes in climate have created a shift in phenology patterns for both plants and avian species. The timing of flowering and breeding is especially important for migratory frugivorous bird species, such as the Three-wattled Bellbird. Gathering information about *Ocotea* and *Cinnamomum* distributions found throughout the BBC will aid in further understanding ecosystem processes that may affect phenology and Lauraceae recruitment. Because the Three-wattled Bellbird feeds on fruits from trees in this family, understanding recruitment will grant insight to the protection of this vulnerable species.

Organization/project information: The Bellbird Biological Corridor (www.cbpc.org) is an ecological connection that spans 10 distinct life zones from the high elevation cloud forests (1850 masl) to the mangroves at the Gulf of Nicoya (0 masl) on the Pacific slope of Costa Rica. The corridor has been created by nine collaborating organizations to protect and enhance biodiversity, promote the sustainable use of natural resources while providing socio-economic benefits to the communities of the corridor. One of the pending decisions is how to identify and prioritize areas in need of habitat protection and restoration.

The Monteverde Institute (www.monteverde-institute.org) combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the Bellbird Biological Corridor.

Intern Responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings
2. Field data collection on no less than 8 internship workdays: e.g., tree identification, plot boundaries and GPS
3. Literature review
4. Data collection and entry, analysis, statistical analysis, and interpretation
5. Final report
6. PowerPoint presentation preparation and delivery

Final products:

5. For digital information: Data files (raw data and compilations). Include a written list of digital files (with accurate file names included) that were created during the internship. List should include brief information on contents and how it's useful to the MVI and the BBC when content not obvious. Digital backup of all final files and original datasheets should be given to the academic supervisor at end of project.
6. Data analysis for reporting results of research topic
7. Report of the specific topic (e.g., Spatial distribution and density of *Ocotea* trees throughout the Bellbird biological corridor):

Abstract: brief summary of topic and results

Introduction: methods of recruitment and success

Study area and methods: site information, selected species, methods (samples of different *Ocotea* species and density within plots, data analysis)

Results: data summary as related to topic

Discussion: your interpretation and implications of the results

Acknowledgements

Appendices

References

8. PowerPoint presentation of results

Literature:

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BAT ECOLOGY AND CONSERVATION
WITH THE MONTEVERDE INSTITUTE (MVI) AND
THE BAT JUNGLE

Intern Position: Research assistance

Coordinator(s): Richard LaVal, PhD, Monteverde Bat Jungle founder

Research Supervisor: Vin de Backer, biologist

Academic Supervisor: Richard LaVal, PhD, Monteverde Bat Jungle founder, and Vin de Backer, biologist

Time Frame: Ongoing

Length of Internship: 4-6 weeks

Internship Description: The ecological and economic importance of bats cannot be understated. Pest control, crop pollination, seed dispersal, and facilitation of plant response to climate change are just a few of the important roles that bats play. The objective of this internship is to convert raw data from decades of bat research in Costa Rica into results usable for publication; informing conservation priorities; educating diverse local, national, and international audiences; and laying the groundwork for further research and conservation. Under the guidance of two bat researchers, you will learn how to prepare and analyze scientific data, interpret results, and prepare the information for distribution to a wider audience (possibly including publication).

Requirements: Some experience and training in bat biology who would like to learn about tropical bats. Microsoft Excel proficiency and prior knowledge of statistics are preferable but not strictly required.

Key areas of internship: Bat Ecology, Bat Conservation, Tropical Ecology, Data analysis.

About the Organization:

The Monteverde Institute (www.monteverde-institute.org) combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the Bellbird Biological Corridor.

The Bat Jungle in Monteverde offers a world class bat exhibit where live bats fly through a simulated jungle environment, designed to introduce visitors to the incredible world of bats and educate about their ecology, diversity and conservation. Created in 2006, it is a culmination of 40 years of worldwide research by Dr. Richard LaVal, a bat researcher and longtime member of the Monteverde Community.

Intern Responsibilities: Exact responsibilities will be defined with the supervisor and will depend on the specific research project.

1. Coordinate with internship supervisors during first days of internship to identify priority task/locations and to schedule weekly update meetings.
2. Literature review.
3. Field data collection, no less than ten days a month, in the evenings in the field locally assisting in the capture of and recording data on bats of the Monteverde Cloud Forest. As many days as possible at the Bat Jungle observing and learning about the bats that live there and their care and feeding.
4. Data entry.
5. Final written report

Final products:

1. Create written list of digital files (with accurate file names included) that were created during the internship. List should include brief information on contents and how it's useful to the research endeavor when content is not obvious. Digital backup of all final files should be given to the research supervisor at end of project. Original datasheets should be delivered to the director.
2. Digital data files of bat captures and measurements.
3. Bibliography
4. Analysis of species compositions and guilds.
5. Final report with complete data analysis (manuscript for publication)
6. Data calculations and literature citations
7. PowerPoint Presentation



ADOPT-A-STREAM CITIZEN SCIENCE PROGRAM

WITH THE MONTEVERDE INSTITUTE (MVI)

Intern Position: Program Assistant

Supervisor: Luisa Moreno

Time Frame: Year-round (June-July will be more research-oriented)

Internship Length: 4-12 weeks

Internship description: The main objective of the Monteverde Institute's Adopt-a-Stream (AAS) internship is to provide support to the various aspects that this citizen science program encompasses. This program reaches out to 9th and 10th graders at Monteverde's three high schools and provides them with education about water ecosystems and related issues, in addition to experiential learning in the field. Each of the schools "adopts a stream" and monitors water quality indicators on a monthly basis. When schools are not in session, MVI staff must still obtain monthly data at these stream sites, which may imply calling upon other community members for support. For this internship, site lists and sampling periodicity may be expanded in order to obtain a greater data set.

The intern will be trained in field data collection and lab activities, and will be expected to support the program coordinator (supervisor) in one or more of the following ways depending on intern interest and current needs:

- Development of AAS educational materials and improvement of datasheets.
- Physical, chemical, and biological data collection at local stream sites.
- Macroinvertebrate rapid-identification in the field, to order level.
- Data entry and analysis.
- Photodocumentation of stream activities and stream conditions.
- Macroinvertebrate identification to family level in laboratory setting.

Topics that the intern will learn throughout this internship include the following:

1. *Citizen science.*

What is citizen science and how can it contribute to professional science? What are the advantages and limitations of using crowd-sourced data?

2. *Research methods.*

What techniques are most accurate for measuring different physical, chemical, and biological indicators? Why are accuracy and precision necessary for adequate data collection? What different human errors could occur in citizen science and how could these be avoided?

3. *The importance of water.*

What are the characteristics of water and what do its abiotic and biotic relationships look like? What are its economic, environmental, and social importance for humans? How has climate change affected water scarcity?

4. *Water quality.*

Which physical-chemical and biological parameters are used to measure water quality and why? For waters discharged into streams, what are the maximum allowed levels of these parameters set by the Costa Rican Water Law?

5. *Education.*

What is the importance of *in situ* science labs for high school students? What teaching methods are most effective a) for this age group, and b) in a field setting? What aspects of the program are most important for this group and how can they be greater emphasized?

Requirements: No prior experience necessary. Intern must be willing to get wet and muddy, and should have stamina for fieldwork. Enthusiasm is a key personality trait for this internship.

Key areas of internship: Citizen Science, Public Health, Education, Biology, Ecology

Background information: Water pollution is one of Costa Rica's most critical problems, with only 5% of total domestic wastewater treated before being discharged to surface waters. Streams in the Monteverde region are no exception, and pollution through direct discharge of greywater is a major problem. One of the ways that the Monteverde Institute has confronted this public health and ecological issue is with the creation and implementation of the Adopt-a-Stream program, which has collected water quality data from streams since 2008. The program has provided high school students with hands-on, out-of-the-classroom opportunities to develop professional research techniques, collect real data, and better comprehend the extent to which human activities affect our water supply and the ecosystem we live in. Though Monteverde's location provides it with the fortune of obtaining pristine water directly from its springs, further action must be taken to educate

the community about solid waste, greywater/blackwater, and other forms of contamination that affect stream health and communities farther downstream in the Bellbird Biological Corridor.

Organization/project information: The Monteverde Institute (www.monteverde-institute.org) combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the Bellbird Biological Corridor.

Intern responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings.
2. Field data collection on no less than 8 internship workdays.
3. Practice to become familiar with macroinvertebrate orders and the use of dichotomous keys.
4. Final report (including literature review).
5. PowerPoint presentation preparation and delivery.

Final products:

1. For digital information: Data files (raw data and compilations). Include a written list of digital files (with accurate file names) created during the internship, with brief information on contents and how it's useful to the MVI when content not obvious. Digital backup of all final files and original datasheets should be given to the internship coordinator at end of project.
2. Depending on the tasks negotiated with the intern, one or more of the following will be produced: Data analysis summary of the results obtained from monthly stream testing activities, interpretation of photographic documentation obtained from stream sites, new or altered worksheets and educational materials for future AAS use.
3. Report of the specific internship topic (e.g., stream quality compared among sites sampled)

Abstract: brief summary of topic and results

Introduction: MVI's AAS program, antecedents for Adopt-a-Stream

Literature review

Study area and methods: site information, selected species, methods

Results: data summary as related to topic

Discussion: your interpretation and implications of the results, recommendations

Acknowledgements

Appendices

References

4. PowerPoint presentation of results

Section B – Sustainability: Landscape Design, Farm Production and Gardening

- Sendero Pacifico Trail Stewardship page 42
- Trail Mapping and Materials Development page 46
- Native Ornamental Plant Landscaping page 49
- Permaculture Site Assessment and Design page 51
- Sustainable and Efficient Farm Production Planning page 54
- Medicinal Herbalism page 56



SENDERO PACIFICO TRAIL STEWARDSHIP

WITH THE MONTEVERDE INSTITUTE (MVI) AND LA ASOCIACION DE DESARROLLO INTEGRAL DE SAN LUIS (ADISL)

Intern Position: Trail Steward

Supervisor: Nathaniel Scrimshaw

Time Frame: February-April

Internship Length: 4-12 weeks

Internship description: Interns working as Trail Stewards will assist with the care and development of the Sendero Pacífico project in a rural community in the Monteverde zone called San Luis. While in San Luis, interns have access to an office and GIS lab at the San Luis Community Center (WIFI, access to printers, small library). In addition to field work that involves trail maintenance and regular hikes to a field station in the mountain settlement of Amapala (7.6km), interns will assist the San Luis Development Association in elaborating a strategic plan for rural tourism in the San Luis Valley. Furthermore, upon arrival, the intern and internship supervisor will choose several of the below tasks to complete throughout the duration of this internship, depending on the length of time that the intern desires for this internship and whether the intern wishes to partake in Spanish classes and/or modules at the Monteverde Institute:

- Collect data from camera traps set up along the Sendero Pacífico trail.
- Record phenology data such as bird sightings, flowering plants, and animal tracks.
- Maintain trail markers and signage.
- Conduct light "level 1" trail work (keeping the trail clear of vegetation and clearing blowdowns).
- Help design and build a wastewater treatment wetland and/or composting toilet for the Amapala field station.
- Develop and tend to permaculture gardens on the surrounding property.
- Work with visiting volunteer groups on "level 2" trail work (erosion control construction).
- Work with local high school and elementary school students in environmental monitoring.

Depending on the tasks agreed upon between the supervisor and intern at the outset, topics may include:

1. *Environmental monitoring through educational programs, citizen science and crowdsourcing.*
What is citizen science and how can it contribute to professional science? What are the advantages and limitations of using crowd-sourced data?
2. *Trail design, construction, monitoring and maintenance.*
What are the elements of good trail design and maintenance? How does good trail design and maintenance help reduce negative environmental impacts and improve hiker safety?
3. *Design, implementation and maintenance of a permaculture landscape, including reforestation.*
What is permaculture? How is it different from agriculture focused on annual crops?
4. *Design and construction of wetlands for greywater treatment; design and construction of composting toilets.*
What is greywater and what are its sources in a household? Why is greywater a concern for human health and the environment?
5. *GIS and GPS.*
How is the product of a Geographic Information System (GIS) different from a paper map? What is the difference between raster and vector GIS?

Requirements: Because there will be onsite training for all of the above, including GIS and GPS, previous experience is not required. Interns should be physically fit and ready to hike up to six miles a day carrying a moderate load (25 pounds). An interest in the above tasks, disciplines, and focus areas is highly recommended. An intermediate level Spanish recommended. Wilderness First AID or Wilderness First Responder certification is a plus, but not a requirement.

Key areas of internship: Recreation, Trail maintenance, Environmental interpretation, Hospitality, Environmental monitoring, Environmental technologies, Geographic Information Systems (GIS), Landscape ecology, Permaculture, Sustainability, Participatory community planning

Background information: The Trail Steward Internship is essential element of next phase of the Sendero Pacífico project. We have now established a signed route through the San Luis valley and begun improvements on the trail (erosion control construction). We also have the first field station and hiking hut in the mountain settlement of Amapala. Working alongside locals, interns will regularly traverse the trail to monitor both animal and human traffic and trail conditions, and help care for and improve the field station/hiking hut. This is important for maintaining a safe trail, evaluating environmental impact, and providing a welcoming overnight experience for hikers. Dispersed, freely accessible trails are new to Costa Rica, and so represent a different and unique

opportunity for visitors to the San Luis Valley. Because the trail links communities along the Pacific Slope in the Bellbird Biological Corridor, it also has the potential bring visitors to remote communities that otherwise would not benefit from tourism. The San Luis experience could be a model and inspiration for other communities along the trail.

The Sendero Pacífico envisions a network of feely accessible trails between the Monteverde Cloud Forest and mangrove forests in the Gulf of Nicoya. The Sendero Pacífico is loosely modeled on other long trails, like the Appalachian Trail and Vermont’s “Long Trail.” However, while there will be a primary route, the Sendero Pacífico project includes feeder trails and associated loops. All together these provide various hiking options within a broad area that corresponds to the Bellbird Biological Corridor. Trails link human as well as natural communities, and it is the people in these communities who will identify and maintain sections of trail. Each community will also develop options for shelter and camping. These include a series of remote hiking huts that also serve as field stations for environmental monitoring and demonstrate environmental technologies and sustainable land use. The Alliance for the Sendero Pacífico is an informal association of individuals, community groups and organizations that support the trail.

Organization/project information: The Asociación de Desarrollo Integral de San Luis (ADISL) is the development association for the community of San Luis de Monteverde, Costa Rica. It serves as the primary community organization that raises money for schools, roads, trails, the health post, and other public infrastructure and services. The ADISL sponsors the Sendero Pacífico project in San Luis as part of a broader initiative to promote sustainable rural tourism in the San Luis valley. The ADISL has partnered for many years with the Monteverde Institute in various programs, and the MVI was a founding member of the Alliance for the Sendero Pacífico in 2004.

The Monteverde Institute (www.monteverde-institute.org) partners with the ADISL via the Alliance for the Sendero Pacífico in order to promote recreational, research, and conservation opportunities for developing communities within the Bellbird Biological Corridor (BBC). This is just one of the many programs where the Monteverde Institute combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as Traveler’s Philanthropy, sidewalk development, recycling, and the BBC.

Intern responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings.
2. Field data collection on no less than 8 internship workdays (e.g., get photos from camera traps).
3. Final report (including literature review).
4. PowerPoint presentation preparation and delivery.

Final products:

1. For digital information: Data files (raw data and compilations). Include a written list of digital files (with accurate file names) created during the internship, with brief information on contents and how it's useful to the MVI and the ADISL when content not obvious. Digital backup of all final files and original datasheets should be given to the internship coordinator at end of project.
2. Depending on the tasks negotiated with the intern, several of the following will be produced: Constructed wetland, permaculture garden, composting toilet, hiking trail map, interpretive signage, and video and photo collage from camera traps.
3. Report of the specific internship topic (e.g., Sendero Pacífico as a rural tourism opportunity)

Abstract: brief summary of topic and results

Introduction: antecedents for the Sendero Pacífico

Literature review

Study area and methods: site information, selected species, methods

Results: data summary as related to topic

Discussion: your interpretation and implications of the results

Acknowledgements

Appendices

References

4. PowerPoint presentation of results



TRAIL MAPPING AND MATERIALS DEVELOPMENT

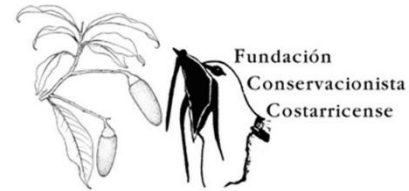
WITH THE MONTEVERDE INSTITUTE (MVI) AND THE
FUNDACION CONSERVACIONISTA COSTARRICENSE (FCC)

Intern Position: Materials Development Assistant

Supervisor: Randy Chinchilla or MVI staff

Time Frame: Ongoing

Length of Internship: 4-6 weeks



Internship Description: This internship focuses on the mapping and creation of interpretive signs for the Rachel & Dwight Crandell Reserve, located behind the Monteverde Institute. Interns will work with the supervisor to create a detailed map of the trails in Crandell Reserve and develop trailmarkers, trail maps, informative signs about the reserve's history, and signage that signals points of interest.

The internship contains two parts: mapping and creation of trailmarkers and interpretive materials. Initial fieldwork will involve trail maintenance and clearing, as some parts of the trail have become blocked by fallen debris. This will also help the intern become familiar with the layout of the Crandell Reserve and the general property. During this time, the intern and supervisor will also research the property boundaries of the Crandell Reserve versus nearby properties like the Curi Cancha Reserve. The creation of a map of the boundaries of the reserve is of utmost importance, as is the creation of a map of the main trails within the reserve.

After the initial fieldwork, the intern will conduct a literature review about interpretive materials and signage in order to become familiarized with important points to consider when developing these materials. Then, the intern and supervisor together will decide where to place these materials, and will work together with MVI communications and maintenance staff to create trailmarkers and signs.

Requirements: Basic level of management of GIS programs, interest in forestry and getting dirty, stamina for fieldwork. Experience with GPS helpful but not necessary.

Key areas of internship: Design, Ecology, Forestry, Interpretive Materials, Mapping, Reforestation

Background information: During their lifetimes, Dwight & Rachel Crandell were much loved conservationists and supporters of the Monteverde Institute and the Monteverde Zone in general. Following his passing in 2008 and her passing in 2010, the Monteverde Institute, in partnership with the Costa Rican Conservation Foundation (FCC), has turned what was once land owned by the Institute into a conservation land trust administered by the FCC. This 32-acre area is formally known as the Dwight and Rachel Crandell Memorial Reserve and is home to a network of hiking

trails through primary and secondary cloud forest. Though some general maps of the region have been created in the past to delineate the general boundaries of the reserve, there is a need for a formal trail map and trail markers, in addition to other informative materials, in order to provide reserve visitors with a better experience.

Organization/project information: The Fundación Conservacionista Costarricense is dedicated to habitat restoration (in the form of reforestation) and habitat protection on the Pacific slope of Monteverde with a special emphasis on the protection of the Three-wattled Bellbird (*Procnias tricarunculatus*). The Foundation was formed in 2002 after investigation of the Three-wattled Bellbird showed that its decline was correlated with loss of habitat on the Pacific slope. The main activities of the foundation are habitat restoration with native tree species, protection of habitat, research, and presentations.

The Monteverde Institute (www.monteverde-institute.org) combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the Bellbird Biological Corridor.

Intern Responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings
2. Field data collection on no less than 8 internship workdays: e.g., trail mapping and GPS
3. Creation of interpretive materials
4. GIS mapping of reserve boundaries and trails
5. Literature review
6. GPS data collection and entry, analysis, and interpretation
7. Final report
8. PowerPoint presentation preparation and delivery

Final products:

1. For digital information: Data files (raw data and compilations). Include a written list of digital files (with accurate file names included) that were created during the internship. List should include brief information on contents and how it's useful to the MVI and the FCC when content not obvious. Digital backup of all final files and original datasheets should be given to the academic supervisor at end of project.
2. Signage and trailmarkers for the Crandell Reserve
3. Portable trail map
4. Data analysis for reporting results of research topic
5. Report of the specific topic (e.g., methods of mapping trails in the Crandell Reserve):

Abstract: brief summary of topic and results
Introduction: general interpretive materials and trailmarking methods and reasoning
Literature review
Study area and methods: site information and history, problem, methods to map
Results: data summary as related to topic
Discussion: your interpretation and implications of the results
Acknowledgements
Appendices
References
6. PowerPoint presentation of results



**NATIVE ORNAMENTAL PLANT LANDSCAPING
WITH THE MONTEVERDE INSTITUTE (MVI) AND
PRONATIVAS (PN)**

Intern Position: Sustainable landscaping

Supervisor: MVI Staff

Time Frame: Ongoing

Length of Internship: 4-10 weeks

Internship Description: Landscaping will consist in interns planning and/or implementing designs depending on the length of internship, intern's interests and season, that work together with the local ecosystem to serve both humans and ecological needs. During this process the supervisor will be teaching and sharing acquired knowledge from his landscaping profession. The first part of the internship will consist in a study to understand the characteristics of the place where the work will be done (probably the M.V.I. campus and the surroundings). The second step will be to define the work area and prepare a site analysis before starting with the design. The construction process will be the last step. Besides that the internship also pretends to benefit ProNativas (a local nonprofit organization that works in promoting the use of native plants) helping them on maintenance of some gardens and/or in the green house propagating some native plantings.

Requirements: No prior experience necessary. Intern must be willing to do some tree planting or gardening. Drawing skills preferred.

Key areas of internship: Sustainability, Conservation, Landscaping, Design, Environmental Education, Plant-animal interactions, Horticulture, Invasive species, Tropical Plant taxonomy

Background information: ProNativas is a network of scientists, biologists, landscapers and gardeners of Costa Rica concerned about the low diversity of native ornamental plants in gardens. This network started in 2004 as a local initiative in Monteverde. ProNativas' mission is to promote the use of native ornamental plants, and raise awareness of their contribution and importance to the rich ecology and beauty of Costa Rica's landscape.

Organization/project information: ProNativas was created in order to provide compiled information about native plants found throughout the country, educate about the importance and disappearance of native flora, and promote sustainable alternatives to using exotic species in gardens. This internship will provide the Monteverde Institute with the design, proposal, and possible installation of native gardens as well as providing interpretive materials about these species to MVI visitors and community members.

The Monteverde Institute (www.monteverde-institute.org) partners with ProNativas to promote the importance of the use of native plants as ornamentals and thereby reduce the use of invasive species. This is just one of the programs where the Monteverde Institute combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as reforestation, public health, information access, citizen science, GIS, communication for social change, resource management and others.

Intern Responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings.
2. Literature review
3. Site analysis
4. Conceptual design (specific area)
5. Construction (specific area/ if time permits)
6. Help ProNativas at the greenhouse and/or other places.
7. Final report and presentation

Final products:

1. Site analysis
2. Conceptual proposal
3. Planted and constructed specific area inside Institute campus.
4. Support ProNativas in different ways.
5. Create a final report and a presentation.



PERMACULTURE SITE ASSESSMENT AND DESIGN

WITH THE MONTEVERDE INSTITUTE (MVI)

Intern Position: Research Technician

Supervisor: Selena Avendaño

Time Frame: Ongoing

Length of Internship: 4-10 weeks

Internship Description: This internship revolves around applying the ethics and seven design principles of permaculture at the local level. The intern and supervisor will select a site within the community and work with the proprietor/owner to develop a permaculture design for the chosen property. The intern will produce a permaculture site assessment along with any recommendations to improve the fertility, productivity, and sustainability of the property. If time and budget permits, the intern will then implement any of the suggestions or systems within their capability. The intern and supervisor working with the potential client will determine an area of focus from the following list: grey water systems, food forest/garden, green building, water management, general sustainability within the system, soil regeneration, and renewable energy.

This internship will cover a multitude of topics, as they are required to carry out a basic permaculture site evaluation. These include, but are not limited to, the following information:

- Interview techniques and goals in order to obtain information from the proprietor
- Identification of existing natural resources (water, topography, flora/fauna, sun, wind, microclimates, etc.) and why these are important to permaculture
- Identification and mapping of access zones (vehicular, pedestrian, wildlife, etc.)
- Land use capability
- Geography and soils
- Weather and solar data
- History of the site
- Off-site local resources and/or hazards
- Local laws and regulations restricting changes in land and land use

Requirements: Priority will be given to interns who demonstrate one or more of the following general skills: research, technical writing, mapping and/or Geographic Information Systems (GIS),

Word processors, interview experience, outdoors experience, and ability to do moderate-to-heavy labor.

Key areas of internship: Sustainability, Ecology, Renewable Energies, Conservation, Landscaping, Permaculture, Horticulture, Water Management

Background information: This internship was developed to correspond with MVI's mission of promoting sustainability in the Monteverde region and becoming a sustainably-maintained organization.

Organization/project information:

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Intern Responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings
2. Field data collection (including photo documentation) on no less than 8 internship dates (e.g. compile site assessment)
3. Client interview
4. Application of site assessment recommendations based on time, internship/proprietor budget, and supply availability
5. Literature review
6. Data collection and entry, analysis, statistical analysis, and interpretation
7. Final report
8. PowerPoint presentation preparation and delivery

Final products:

1. For digital information: Data files (raw data and compilations). Include a written list of digital files (with accurate file names included) that were created during the internship. List should include brief information on contents and how it's useful to the MVI and GP when content not obvious. Digital backup of all final files and original datasheets should be given to the academic supervisor at end of project.
2. Site assessment (separate from the final report)
3. Permaculture design implementation (time and budget permitting)
4. Data analysis for reporting results of research topic
5. Report of the specific topic (e.g., implementation of permaculture design at X site):

Abstract: brief summary of topic and results
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Introduction: permaculture, its utility, and a survey of permaculture in Monteverde

Literature review

Study area and methods: site information, methods (interview and others), work done

Results: site analysis and data summary as related to topic

Discussion: your interpretation and implications of the results

Acknowledgements

Appendices

References

6. PowerPoint presentation of results



SUSTAINABLE AND EFFICIENT FARM PRODUCTION PLANNING

WITH THE MONTEVERDE INSTITUTE (MVI)

Intern Position: Research Assistant

Coordinator(s): Anibal Torres

Research Supervisor: Anibal Torres & Randy Chinchilla

Time Frame: Ongoing

Internship Length: 4-12 weeks

Internship Description: The need for an adequate use of natural resources has become more important in recent years in multiple productive areas, especially the agricultural sector.

In response to a much more sustainable and efficient production, technology such as geographic information systems (GIS) and unmanned aerial vehicles (UAVs) had given tools to better understand land planning, new design principles like permaculture allow a more holistic approach in production.

This project would be working with selected farms along the Bellbird Biological Corridor to analyze surface features (land use, contour, water derange, water bodies), research on how incorporating new design principles in to the current farm activities and developing with the farm owner a master plan proposal that could boost productive landscapes, improving agricultural and forestry efficiency.

Intern will work with supervisor to generate orthomosaics from drone photographs, interpolation of data to create 3D digital elevation models. (With help from Intern coordinator); or use generated farm data and farmer input to create a master plan (map) that could detect areas with most potential for current and future production, reforestation and water conservation

Requirements: Candidate's background knowledge (*intern doesn't need to have skill in all areas*):

- GIS knowledge (ArcGIS or QGIS)
- Landscape Architecture
- Permaculture

-Land use planning

*Spanish preferable but not necessary.

Key areas of interest: Permaculture, Landscape Architecture, Agricultural Science, GIS.

About the Organization:

The Monteverde Institute (www.monteverde-institute.org) combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the Bellbird Biological Corridor.

Intern Responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings.
2. Literature review and get acquainted with softwares and data type that will be used.
3. Meeting or interviewing with farm owner and/or local experts.
4. Data collection or data analysis and interpretation /generation of a master plan.
5. Final report.

Final products:

1. Orthomosaics and Digital Elevation Models by farms.
2. Land use and coverage map.
3. Farm master plan.
4. Final report with complete data analysis (mandatory).
5. Power Point presentation (mandatory).



MEDICINAL HERBALISM: PLANTS AND PRACTICES WITH THE MONTEVERDE INSTITUTE (MVI)

Intern Positions: Emerging Herbalist

Supervisor: Carla Willoughby

Time Frame: April, May, June, August

Length of Internship: 4-8 weeks

Internship Description: This internship involves ethnobotanical research and education on native and non-native medicinal plants conducive to growth in Monteverde. The intern will visit several community medicinal plant garden initiatives and learn how to identify medicinal plants by their scientific and common names. With this gained knowledge, the intern will be capable and responsible for choosing medicinal plants for expanding existing community gardens, and/or locating an area in the community for the design and installation of a new medicinal plant garden. Interns may also develop educational presentations and materials about medicinal plants for the community; as well as contribute to the current database of the local community's medicinal plant knowledge.

Topics that may be covered during this internship include:

1. Functions of medicinal plants
What medicinal plants are used in Monteverde? How do medicinal plants work? Which medicinal plants are used for what ailments?
2. Community perceptions of alternative medicine
What is the profile of the population that uses medicinal plants? What plants does this population use and for what ailments? What are their perceptions of modern versus alternative medicine?
3. Landscape design
How should a medicinal garden be designed? What factors should be considered when designing the medicinal garden? For what purposes should a particular medicinal garden be designed.
4. Education and community outreach
How should material about medicinal plants be presented to the community/target audience? What material should be presented? How can such presentations be made more interactive, reach more people, etc.?

Requirements: Interest in medicinal plants and herbalism, gardening and landscape design, community education, and ethnobotanical research.

Key areas of interest: Landscape Design, Gardening, Health Care, Medicinal Plants and Herbalism, Sustainability, Education, Medical Anthropology, Ethnobotany

Background information: Community knowledge of medicinal plants, specifically native medicinal plants and their uses, is a form of local holistic sustainability because it enables its members to draw on community-based natural health resources. Medicinal plant gardens located at the Monteverde Institute and at the Cloud Forest School/Centro de Educación Creativa are in need of maintenance, renovation and expansion. With the work of the Emerging Herbalist internship, both gardens, and/or any future planned gardens will serve the local community and students as demonstration gardens to promote the awareness and use of medicinal herbs.

Organization/project information: The Monteverde Institute (www.monteverde-institute.org) combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the Bellbird Biological Corridor.

Intern Responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings
2. Field data collection on no less than 8 internship workdays: (e.g., community interviews)
3. Literature review
4. Data collection and entry, analysis, statistical analysis, and interpretation
5. Final report
6. PowerPoint presentation preparation and delivery

Final products:

1. For digital information: Data files (raw data and compilations). Include a written list of digital files (with accurate file names included) that were created during the internship. List should include brief information on contents and how it's useful to the MVI when content not obvious. Digital backup of all final files and original datasheets should be given to the academic supervisor at end of project.
2. Interpretive materials on medicinal plants, in Spanish
3. Preparation of medicinal infusions, decoctions, tinctures, salves and syrups
4. Design/participation in informative medicinal plant booth at the local farmer's market
5. Educational presentation and/or brochures for a local community group or school
6. Ethnobotanical survey about current medicinal plant use in the Monteverde region Report of the specific topic (e.g., ethnobotanical trails):

Abstract: brief summary of topic and results
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Introduction: medicinal plant use history in Monteverde

Literature review

Study area and methods: site information, selected species, methods of data collection
Results: data summary as related to topic
Discussion: your interpretation and implications of the results
Acknowledgements
Appendices
References

7. PowerPoint presentation of results

Section C – Community Outreach

- Foreign Language Instruction page 60
- Community Health Program page 62
- Climate Change, Food Insecurity, and Circular Economy page 66
- Assessing Water Conditions on a Community Scale page 68
- Greywater treatment systems, water conservation, and community outreach page 70



FOREIGN LANGUAGE INSTRUCTION WITH THE MONTEVERDE INSTITUTE (MVI)

Intern Positions: Teaching Assistant

Supervisor: MVI staff

Time Frame: Ongoing

Length of Internship: 4-10 weeks

Internship Description: This internship requires students with advanced Spanish skills to help identify new materials to be used in conjunction with Spanish classes. These materials should focus on intercultural relationships, and emphasize current social, political, and cultural events of Costa Rica. Interns will incorporate methods using scenario planning and role-play situations in order to that promote intercultural understanding and cultural sensitivity within student groups. Interns will be expected to collaborate as an assistant to Spanish teachers, and should also have a strong interest in second language acquisition, ESL, and other teaching modalities.

Topics may include:

1. Development of second language grammar (Spanish)
2. Second language production and comprehension
3. Input processing
4. Acquisition of pragmatic and sociolinguistic competence
5. Methods of teaching college Spanish
6. Communicative language teaching
7. Research on second language development

Requirements: Strong Spanish language skills, interest in both curriculum development and second language acquisition, willing to do background research, able to implement materials with students in a classroom setting.

Key areas of interest: Spanish, Latin American Studies, History, Comparative Literature, Bilingual Education, Teaching Methods, Acquisition, Development

Background information: Studying abroad in a Spanish speaking country offers many opportunities to advance teaching second language skills. By creating teaching materials and implementing creative teaching techniques, foreign language teaching assistants will be able to practice teaching skills while also providing resources for other teachers, such as those in TESL programs.

Organization/project information: The Monteverde Institute (www.monteverde-institute.org) combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the Bellbird Biological Corridor.

Intern Responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings
2. Field data collection on no less than 8 internship workdays: (e.g., Journalistic covering/reporting)
3. Literature review
4. Final report
5. PowerPoint presentation preparation and delivery

Final products:

1. For digital information: Data files (raw data and compilations). Include a written list of digital files (with accurate file names included) that were created during the internship. List should include brief information on contents and how it's useful to the MVI when content not obvious. Digital backup of all final files and original datasheets should be given to the academic supervisor at end of project.
2. Lesson plans/teaching materials (posters, signs, digital information, etc.)
3. Class assessment and evaluation
4. Report of the specific topic (e.g., methods of teaching college-level Spanish):

Abstract: brief summary of topic and results
 Introduction: language learning theory
 Literature review
 Study area and methods: information and methods used to develop curriculum, etc.
 Results: data summary as related to topic
 Discussion: your interpretation and implications of the results
 Acknowledgements
 References

5. PowerPoint presentation of results



COMMUNITY HEALTH PROGRAM
WITH THE MONTEVERDE INSTITUTE (MVI)

Intern Position: Program Assistant

Supervisor: Jenny Peña

Time Frame: Ongoing

Internship Length: 4-12 weeks

Internship description: The overall objective of this internship is to provide support to the various activities that the Monteverde Institute health program provides to the local community as well as to international courses focused on themes related to health and medicine. The health program is coordinated by Jenny Peña and consists of several different facets, including academic field courses (in nursing, anthropology, environmental engineering, and public health, among others) and Monteverde in Motion, which is a community fitness program. More specifically, this internship is focused on supporting an increase in physical activity among marginalized populations of the Monteverde community, with other internship goals including the following:

- Promoting general nutrition and awareness about preventative health issues.
- Increasing local organizing capacity for sport and recreational opportunities.
- Facilitating participation in creative physical activities.
- Enabling program participants to monitor changes in biophysical parameters, self-esteem, and personal empowerment.

Depending on the supervisor's needs at the time the intern arrives, topics may include:

1. *Nutrition.*

How can we enhance awareness of general nutrition and preventative health issues among target populations? What workshops can we implement to inform the public about nutrition and health? How does one monitor changes in biophysical parameters of program participants and their nutritional status?

2. *Arts and leadership.*

What activities and workshops decrease stress and increase leadership skills within target groups?

3. *Sports and physical activity.*

How can we facilitate the participation of the community in creative physical activities? What classes and public events are most attractive?

4. *Education.*

In what ways can we promote healthy living? What health and prevention materials can be provided to target audiences? How can we enhance awareness of general nutrition and preventative health issues?

5. *Program coordination and project management.*

What does program coordination involve? What is the Logical Framework Approach and how can it be used to develop, implement, and evaluate projects and programs? How can one use strategic planning to successfully carry out program and project logistics?

Requirements: Resume or curriculum vitae must demonstrate that the prospective intern studies or has experience in two or more of the following fields: public health, medicine, physical therapy or education and/or activity (including Zumba, aerobics, dance, and sports instruction), nutrition, recreation, art, psychology, nursing, anthropology, environmental engineering, leadership development, grant writing, or program coordination. An advanced level of Spanish is required, bilingual preferred (please write your letter of interest in Spanish; a Skype interview may also be required). Must have completed at least two years of university at time of application. Self-directed personality preferred.

Key areas of internship: Public Health, Nutrition, Education, Sports, Physical Activity

Background information: According to national studies, there exists a high incidence of obesity among Costa Ricans, which contributes to the development of hypertension, heart disease, dyslipidemia, diabetes and other chronic diseases. Specifically, young people have been reported to show changes in their dietary and food habits. At the local level, instilling healthy eating habits in Monteverde's youth remains a challenge; families report difficulty in controlling their children's food preferences, when today's youth spends more time outside of the household than inside. The following excerpt explains nutrition and food security issues associated with the Monteverde population:

In 2011, the Monteverde Institute's Community Health Program and the University of South Florida (USA) completed a 3-year study funded by the National Science Foundation titled, "The Impact of Economic Change on Food Habits and Nutritional Health in Monteverde, Costa Rica: Mixing Food Production and Tourism." In addition to finding significant levels of food insecurity (50.76% of 200 households surveyed), the study also identified an alarming rate of health issues related to dietary practices, stress, lifestyle behaviors and a lack of physical activity. Among these issues are increased prevalence of overweightness and obesity, and their associated health risks

such as hypertension, cardiovascular disease, and diabetes (results pending publication). While these issues are correlated to food insecurity, they are further exacerbated by factors such as cultural and gender norms (e.g., % of women who don't work outside of the home), socio-economic realities (e.g., labor conditions and limited recreational/physical activity alternatives), a lack of public infrastructure and organization (i.e., few sidewalks, gravel roads, formal opportunities for participation, etc.) and local geography (i.e., few flat areas, heavy rains during much of the year, etc.). These factors particularly isolate women, youth and the elderly from participation in physical activity.

One of the ways that the Monteverde Institute has confronted this public health issue is with the creation and implementation of the program Monteverde in Motion, which provides Zumba and aerobics classes to the Santa Elena and San Luis communities at a low cost. The program also provides leadership development opportunities to local women who desire to continue these programs if the Monteverde Institute were unable to fund the program in the future. Past internships have studied the benefits that the program offers to participants and the impact that consistent physical activity has had on those who attend classes provided by the Monteverde Institute through Monteverde in Motion.

Organization/project information: The Monteverde Institute (www.monteverde-institute.org) combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the Bellbird Biological Corridor.

Intern responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings.
2. Field data collection on no less than 8 internship workdays (e.g., anthropometric measurements).
3. Final report (including literature review).
4. PowerPoint presentation preparation and delivery.

Final products:

1. For digital information: Data files (raw data and compilations). Include a written list of digital files (with accurate file names) created during the internship, with brief information on contents and how it's useful to the MVI when content not obvious. Digital backup of all final files and original datasheets should be given to the internship coordinator at end of project.

2. Depending on the tasks negotiated with the intern, one or more of the following will be produced: Developed and executed program activities, educational and preventative material for participants, data analysis of anthropometric measurements from Monteverde in Motion.
3. Report of the specific internship topic (e.g., physical activity to prevent obesity)

Literature review Abstract: brief summary of topic and results
Introduction: MVI's health program, antecedents for Monteverde in Motion
Literature review
Study area and methods: site information, selected species, methods
Results: data summary as related to topic
Discussion: your interpretation and implications of the results, recommendations
Acknowledgements
Appendices
References

4. PowerPoint presentation of results



Climate Change, Food Insecurity, and Circular Economy in the Bellbird Biological Corridor

WITH THE MONTEVERDE INSTITUTE (MVI)

Intern Position: Research Assistant

Coordinator(s): Allison R. Cantor

Research Supervisor: Allison R. Cantor

Time Frame: Ongoing

Length of Internship: 4-6 weeks

Internship Description:

This is a research internship. This research explores the relationship between climate change, food insecurity, and circular economy in the Bellbird Biological Corridor in Costa Rica. Interns will participate in various components of research, which may include conducting interviews, gathering data on food insecurity, creating and administering a climate change checklist for farmers, and/or participatory mapping of food production resources. Interns will also gain skills in data management, data collection, data analysis, and community-based participatory research.

Requirements: Individuals who wish to participate in this internship must have a background in the social sciences or public health. This can include taking a university-level class in either public health or the social sciences, or having work or volunteer experience in either of these fields. Research experience not necessary

Key areas of interest: Food insecurity, climate change, circular economy, participatory approaches

About the Organization:

The Monteverde Institute (www.monteverde-institute.org) combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the Bellbird Biological Corridor.

Intern Responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings
2. Field data collection on no less than 8 internship workdays: (e.g., community interviews)
3. Literature review
4. Data collection and entry, analysis, statistical analysis, and interpretation
5. Final report
6. PowerPoint presentation preparation and delivery

Final products:

6. Digital map of food resources
7. Bibliography/database on climate change, food insecurity, and circular economy resources
8. Infographic on food insecurity and climate change in the bellbird biological corridor
9. Analysis of climate change data
10. Final presentation



ASSESSING WATER CONDITIONS ON A COMMUNITY SCALE

WITH MONTEVERDE INSTITUTE (MVI) AND THE BELLBIRD BIOLOGICAL
CORRIDOR (BBC)

Intern Positions: Project Assistant

Supervisor: Anibal Torres L

Time Frame: Ongoing

Length of Internship: 8-10 weeks

Internship Description:

To assess the current conditions of water resources along the Bellbird Biological Corridor, it is essential to know the main problems that affect it, specifically in terms of water supply, protection, use and disposal. This type of research and analysis would make it possible to develop a comprehensive approach based on the anthropological characteristics of each community throughout the entire basin. And it would facilitate a second stage to propose concrete solutions that allow the sustainable management and use of water resources.

Specifically, the intern will:

1. Methodology develop, evaluate water resources threats in the natural and domestic environment (In conjunction with the Supervisor)
2. Visit a selected community to assess environmental and social conditions
3. Conduct interviews to water authorities and apply survey to local residents
4. Enter generated data and analyzed results from survey and interviews
5. Review relevant literature

Requirements: The intern must be interested in working with local communities, managing qualitative and quantitative data. The project will require office time and field work to collect data from environmental conditions and community's cultural practices. A strong knowledge of Spanish could be relevant.

Key areas of interest: Sustainability, Water quality, Ecology, Planning, Outreach and Awareness, Bellbird biological corridor

Intern Responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings
2. Field data collection (Natural water conditions of the micro-watershed)
3. Interview participation

4. Carrying out population surveys and data/critical analysis, if applicable
5. Literature review
6. Final report
7. PowerPoint presentation preparation and delivery

Final products:

1. General Diagnosis of the micro-watershed (Forest buffer near water bodies)
2. List of the main water management issues detected in the community
3. List of community leader, local authorities that work on water management and protection
4. Raw quantitative/qualitative data and data/critical analysis, if applicable.
5. Well-documented personal and critical reflections of field experiences as well as workshop experiences: agendas/itineraries, dates, locations, references, photo documentation, people, etc.

6. Final Report (Title page: Title of report, author full name, date, internship title and dates)

<p>Abstract: brief summary of topic and results, in English and in Spanish</p> <p>Introduction: situation of water globally, nationally and locally; greywater treatment</p> <p>Literature review: same or similar as the one written at the beginning of the internship</p> <p>Methods: how information was chosen, steps, how curriculum was developed, etc.</p> <p>Results: written parts of any materials developed, evaluation of workshops, etc.</p> <p>Discussion: your interpretation and implications of the results, next steps, etc.</p> <p>Acknowledgements</p> <p>Appendices</p> <p>References</p>

7. PowerPoint presentation of results



GREYWATER TREATMENT SYSTEMS, WATER CONSERVATION, AND COMMUNITY OUTREACH

WITH THE MONTEVERDE INSTITUTE (MVI)

Intern Positions: Curriculum Developer

Supervisor: Anibal Torres

Time Frame: Ongoing

Length of Internship: 8-10 weeks

Internship Description: This internship will utilize the knowledge that the intern gains about the situation of water in Costa Rica and Monteverde, as well as how greywater treatment systems function, in order to develop interpretive and teaching materials. The intern will use these materials for the development and implementation of workshops in order to inform the community about the importance of water treatment and conservation. The intern may be involved in researching other opportunities to improve greywater treatment in red-zoned areas through observation and surveys for the Monteverde Network of Environmental Management of Residual Waters.

Specifically, the intern will:

1. Visit examples of different greywater treatment systems in the Monteverde area as well as different neighborhoods where there may be greywater runoff issues.
2. Learn about how the MVI biogarden works, including how to monitor water quality in the system, and provide periodic maintenance to the system.
3. Contribute to the outreach mission of the Monteverde Network of Environmental Management of Residual Waters by preparing and giving tours/talks *in situ* to youth and adults at the MVI biogarden and community workshops and/or population surveys.
4. Participate once or twice a month in the MVI Adopt-a-Stream citizen science program with local schools and provide program feedback.

Topics that may be covered during this internship include:

1. The importance of water:

What are the characteristics of water and what do its abiotic and biotic relationships look like? What are its economic, environmental, and social importance for humans? How has climate change affected water scarcity?

2. Greywater treatment systems:

What is the contamination situation in Monteverde? What possible solutions exist and what treatment systems are available and sensible for local use?

3. Water quality:

Which physical-chemical and biological parameters are used to measure water quality and why? What does basic maintenance of a biogarden look like? For waters discharged into streams, what are the maximum allowed levels set by the Costa Rican Water Law?

4. Biodegradable materials:

How do chemical products affect the ecosystem as a whole as well as the effectiveness of biogardens? What does an organic/biodegradable product consist of? What products are available for local use?

Requirements: The intern must have a strong interest in improving the quality of water discharged to streams and rivers. Basic knowledge and understanding of ecology, freshwater biology, water quality and treatment wetlands is helpful. The intern must have a strong background in teaching and curriculum development. A strong knowledge of Spanish is crucial.

Key areas of interest: Sustainability, Water quality, Ecology, Outreach and Awareness, Interpretive and Curriculum Development

Background information: Water pollution is one of Costa Rica's most critical problems, with only 5% of total domestic wastewater treated before being discharged to surface waters. Streams in the Monteverde region are no exception, and pollution through direct discharge of greywater is a major problem. In 2005, the MVI installed a reed bed treatment system to reduce its impact on local streams. By 2009, the treatment system was no longer working and was completely reconstructed. It is unclear for how long it was effective, but by 2014 it was no longer functioning. Reconstruction of a biogarden occurred in July 2014 by a student group from the University of South Florida, and these students left behind many useful reports. To effectively manage this new system and to provide a model for the community, the MVI will be monitoring the system's efficiency and improvement of water quality.

The recently-formed Monteverde Network of Environmental Management of Residual Waters (Red de Gestión Ambiental de Aguas Residuales de Monteverde) has been working not only to directly research and improve the water situation here in Monteverde, but also to reach out to the local community in order to educate about greywater and actions that people can take to diminish their environmental impact.

Organization/project information: The Monteverde Institute (www.monteverde-institute.org) combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the Bellbird Biological Corridor.

Intern Responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings
2. Field data collection on no less than 8 internship workdays: e.g., field visits to greywater treatment systems around Monteverde and surrounding communities that lead to written observations and reflections
3. MVI biogarden measurements and periodic maintenance
4. Development of interpretive and curricular material for MVI and for workshops
5. Carrying out population surveys and data/critical analysis, if applicable
6. Literature review
7. Final report
8. PowerPoint presentation preparation and delivery

Final products:

1. For digital information: Data files (raw data and compilations). Include a written list of digital files (with accurate file names included) that were created during the internship. List should include brief information on contents and how it's useful to the MVI when content not obvious. Digital backup of all final files and original datasheets should be given to the academic supervisor at end of project.
2. Raw quantitative/qualitative data and data/critical analysis, if applicable.
3. Well-documented personal and critical reflections of field experiences as well as workshop experiences: agendas/itineraries, dates, locations, references, photo documentation, people, etc.
4. Interpretive material (sign(s) and/or poster(s) and curriculum)
5. Workshop(s) and/or tour of the MVI biogarden for students
6. Community workshop(s) and/or completed population surveys
7. Report of the specific topic (e.g., development of material for community outreach):

Title page: Title of report, author full name, date, internship title and dates
 Abstract: brief summary of topic and results, in English and in Spanish
 Introduction: situation of water globally, nationally and locally; greywater treatment
 Literature review: same or similar as the one written at the beginning of the internship
 Methods: how information was chosen, steps, how curriculum was developed, etc.
 Results: written parts of any materials developed, evaluation of workshops, etc.
 Discussion: your interpretation and implications of the results, next steps, etc.
 Acknowledgements
 Appendices
 References

8. PowerPoint presentation of results

Literature:

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Section D – Arts

- Artistic Collaboration

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ARTISTIC COLLABORATION WITH THE MONTEVERDE INSTITUTE (MVI)

Intern Positions: Artist-Scientist

Supervisor: Carla Willoughby

Time Frame: April, May, August

Length of Internship: 4-8 weeks

Internship Description: Interns will conduct pedagogical research on arts and sciences integration, including required and suggested readings and documentaries. After reflecting on scientific learning based on current coursework or experience in the Monteverde region, interns will identify one or more scientific and/or sustainability concepts to explore through an artistic medium. This internship will require that interns choose one or more artistic mediums for developing a community educational tool/presentation about the identified scientific or sustainability concepts, keep a daily creative journal based on prompts from the internship supervisor, and identify an audience and a setting for the proposed unveiling of the artistic education. Note: It is advised that participating interns bring any art materials and/or equipment especially cameras, video cameras, and instruments that they may need. The internship includes funding for art materials, however it is limited.

Requirements: Interest in using artistic skills for community education about scientific and/or sustainability concepts.

Key areas of interest: Tropical Ecology, Sustainability, Education, Visual Arts, Documentary, Creative Writing, Dance, Theater, Music, Arts and Sciences Integration.

Background information: Increasingly, attention is being given to the arts as a vehicle for understanding and appreciating Science. Instead of placing the two disciplines at separate ends of a knowledge spectrum, current pedagogical methods are recognizing how both disciplines draw on creativity, insight and logic. As such, arts and sciences integration is an example of a holistic approach to education. As Mae Jemison said, *“Science provides an understanding of a universal experience. Art provides a universal understanding of a personal experience.”*

Organization/project information: The Monteverde Institute (www.monteverde-institute.org) combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education,

Culture, and Community Health. The MVI spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the Bellbird Biological Corridor.

Intern Responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings
2. Creation of artistic educational materials
3. Literature review
4. Final report
5. PowerPoint presentation preparation and delivery

Final products:

1. For digital information: Data files (raw data and compilations). Include a written list of digital files (with accurate file names included) that were created during the internship. List should include brief information on contents and how it's useful to the MVI when content not obvious. Digital backup of all final files and original datasheets should be given to the academic supervisor at end of project.
2. One or more of the following: Create a visual arts exhibit, choreograph and perform a dance, write and perform a puppet show, write and illustrate a children's story to be read aloud, create a radio/photography/video documentary.
3. Report of the specific topic (e.g., project assessment and evaluation):

Abstract: brief summary of topic and results
 Introduction: use of the arts to teach biological sciences
 Literature review
 Study area and methods: art form chosen, materials used, chosen site of project execution
 Results: direct outcome of the project and feedback received
 Discussion: your interpretation and implications of the results
 Acknowledgements
 Appendices
 References

4. PowerPoint presentation of results.

Section E – Communications/Information Science

- Communications and Journalism page 78
- Photographic Documentation page 81
- Library Science and Database Project page 84



COMMUNICATIONS AND JOURNALISM

WITH THE MONTEVERDE INSTITUTE (MVI)

Intern Positions: Assistant Journalist

Supervisor: Marco Crawford

Time Frame: Ongoing

Length of Internship: 8-10 weeks

Internship Description: Research has been conducted throughout the Monteverde area in various subjects. Currently, information surrounding these studies is written for the scientific community, thus providing little to no benefit to the community. The potential of converting these studies into public resources is vast. Interns will be in charge of researching past investigations and studies conducted in the Monteverde area and creating interpretive and informative materials (e.g., brochures, booklets, videos, etc.). Research topics will focus on health, agriculture in tropical areas, or biological data. Interns will be expected to have a good rapport with community members and the MVI librarian.

Topics that may be covered in this internship include:

1. Research methods in a small community

Researching in a community where most information is transferred by word of mouth, and little documented information is available.

2. Research interests

Creating lists of research focus interests of affiliates and community members.

3. Communication methods

Different communication options and appropriate use

4. Information research

Compilation and documentation with the different tools presented within the domain of communications.

Requirements: Intermediate to advanced level of Spanish, basic research skills, knowledge about basic communication methods, and knowledge of Photoshop, Illustrator, and (if interested in making a video) a video-editing program (PremierPro is available through the Institute).

Key areas of interest: Communications, Research, Journalism, Blogging, Health, Tropical Biology, Library Science

Background information: One of the MVI's pillars is research, and due to this philosophy many important studies have been conducted. Various visiting students have collaborated with researchers throughout the Monteverde area. One of the Communication Department's goals is to provide this information in a way that it can be used as a resource for the Monteverde community. With Community being another MVI pillar, individual research and improvement efforts within the community are also important. Together, we can collaborate to promote awareness of these activities within the Monteverde community.

Organization/project information: The Monteverde Institute (www.monteverde-institute.org) combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the Bellbird Biological Corridor.

Intern Responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings
2. Field data collection on no less than 8 internship workdays: (e.g., Journalistic covering/reporting)
3. Literature review
4. Final report
5. PowerPoint presentation preparation and delivery

Final products:

1. For digital information: Data files (raw data and compilations). Include a written list of digital files (with accurate file names included) that were created during the internship. List should include brief information on contents and how it's useful to the MVI when content not obvious. Digital backup of all final files and original datasheets should be given to the academic supervisor at end of project.
2. Interpretative materials (booklet, videos, digital information, etc.)
3. Data analysis for reporting results of research topic (how interpretive materials were made, problems, suggestions to future interns, etc.)

4. Report of the specific topic (e.g., communication methods and assessment):

Abstract: brief summary of topic and results
Introduction: methods creating resources
Literature review
Study area and methods: site information, methods
Results: data summary as related to topic
Discussion: your interpretation and implications of the results
Acknowledgements
Appendices
References

5. PowerPoint presentation of results



PHOTOGRAPHIC DOCUMENTATION WITH THE MONTEVERDE INSTITUTE (MVI)

Intern Position: Documentarian

Supervisor: Selena Avendaño

Time Frame: Ongoing

Length of Internship: 4-10 weeks

Internship Description: In an age of information and digital media it is easy to be bombarded with images. However, it is refreshing to see a photo essay taken with the sole purpose of documentation. This is an opportunity to see how an outside eye can transform the way we see ourselves and the world around us. The idea of this project is to create photographic essays of different activities in the Monteverde area with a photojournalistic approach (e.g., agricultural practices, research, homestay families, cultural representations). This photo essay will serve as a project to create awareness in each of the chosen fields. The focus will be creating a professional digital portfolio for the MVI and conceptually well-executed photographs in a collaborative effort between the supervisor and the intern.

Interns will participate in a skills module that will cover the following topics:

1. Subject specific practical skills

Camera technique and setup, including the use of hardware accessories.

2. Photojournalism

Introduction to the history of photojournalism, tactics, approaches and suggestions; the role of the photojournalist in the modern world, including the laws and codes of ethics relating to photojournalists; discussion of the work of critically acclaimed photojournalists; photojournalism health and safety in a foreign setting.

3. Community

Tour through the community to take in a first-person perspective and consider different themes; interpersonal skills in a second language and in diverse locations.

4. Communication

Oral presentation and explanation of internship work and experience to the Monteverde community; discussion of intern's work and that of well-known photojournalists.

1. Photo documentation and information technology:

Techniques in applying ethics, ideas and representations; photo editing using the proper criteria and basic photo correction (e.g., Adobe Photoshop image editing).

2. Research Skills

Planning and executing workflow with an understanding of industry standards (i.e., digital workflow).

Requirements: DSLR camera, basic use of Photoshop, willing to socialize and be an active participant in community activities. Intermediate to advanced level of Spanish, or participation in Spanish module, is recommended in order to communicate effectively in the community.

Key areas of interest: Photography, Documentaries, Communications, Information Technology, Research

Background information: Monteverde is known to be a place full of cultural and natural diversity. This unique blend of so many different world representations has created a unique town with plenty of stories. Monteverde is surrounded by contrasts: On one hand there is constant change, and on the other there are old traditions. There are the forest wonders, agricultural practices, attempts to allow both to strive side by side, and the stories go on. The idea of this internship is to document stories, and in some cases compare them with older ones. The goal is to create a journal of Monteverde in order to visually understand how things change with time. This is an opportunity to be able to join and understand how different activities merge and affect each other (e.g., farming along forest edges or cultural perceptions of tourism, etc.).

Organization/project information: The Monteverde Institute (www.monteverde-institute.org) combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the Bellbird Biological Corridor.

Intern Responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings
2. Field data collection on no less than 8 internship workdays (e.g., photographs)
3. Literature review
4. Final report
5. PowerPoint presentation preparation and delivery

Final products:

1. For digital information: Data files (raw data and compilations). Include a written list of digital files (with accurate file names included) that were created during the internship. List should include brief information on contents and how it's useful to the MVI when content not obvious. Digital backup of all final files and original datasheets should be given to the academic supervisor at end of project.
2. Photojournalistic coverage of an event in the Monteverde community.
3. Development of a portfolio.
4. Coverage analysis for reporting results
5. Report of the specific topic (e.g., cultural perception of tourism):

Abstract: brief summary of topic and results
 Introduction: Perceptions of ecotourism in Monteverde
 Literature review
 Study area and methods: site information, selected stories/interviews, methods (techniques and information analysis)
 Results: data summary as related to topic
 Discussion: your interpretation and implications of the results
 Acknowledgements
 Appendices
 References

6. PowerPoint presentation of results.



LIBRARY SCIENCE AND DATABASE PROJECT

WITH THE MONTEVERDE INSTITUTE (MVI)

Intern Positions: Assistant Library Coordinator

Supervisor: Marlene Leitón Campbell

Time Frame: Ongoing

Length of Internship: 4-6 weeks

Internship Description: Interns will develop further the existing library database, as well as research web resources that are relevant for the MVI, student coursework, and community members. Students will gain a wide knowledge of available resources, particularly in the areas of Sustainable Development, Biological Sciences, Tropical Ecology and Health.

Requirements: Basic background or desire to learn more about library science, intermediate level of Spanish, ability to work independently once basic training in the MVI library system has been received.

Key areas of interest: Library Science, Sustainable Development, Biological Sciences, Tropical Ecology, Health

Background information: These databases generated from MVI internships and community projects provide continuity and information resources. By making this information more accessible and available, research will be made easier for students and community members.

Organization/project information: The Monteverde Institute (www.monteverde-institute.org) combines academic experiences and community partnerships in order to advance the knowledge of sustainability. The MVI teaches and hosts courses from over 25 universities in the fields of Tropical Ecology, Conservation Biology, Sustainability, Landscape Architecture, Environmental Education, Culture, and Community Health. The MVI spearheads various community projects such as Traveler's Philanthropy, sidewalk development, recycling, and the Bellbird Biological Corridor.

Intern Responsibilities:

1. Coordinate with internship supervisors during first days of internship to identify priority tasks/locations and to schedule weekly update meetings
2. Database development

3. Literature review
4. Final report
5. PowerPoint presentation preparation and delivery

Final products:

1. For digital information: Data files (raw data and compilations). Include a written list of digital files (with accurate file names included) that were created during the internship. List should include brief information on contents and how it's useful to the MVI when content not obvious. Digital backup of all final files and original datasheets should be given to the academic supervisor at end of project.
2. Data analysis for reporting results of research topic.
3. Report of the specific topic (e.g., importance of library science to the scientific community):

Abstract: brief summary of topic and results

Introduction: explanation of library science and its function

Literature review

Study area and methods: database(s) used, methods of transfer and integration into MVI database, subject areas researched

Results: summary as related to research topic, overall outcome

Discussion: your interpretation and implications of the results

Acknowledgements

Appendices

References

4. PowerPoint presentation of results.