Channel Islands
CALIFORNIA STATE UNIVERSITY

# Materials, Services, Facilities and Technology Fee
# Fiscal Year 2015-2016 Budget Request Form*

DUE: Friday, January 9, 2015 @ 5:00 P.M.
Please return completed requests via email to gina.matibag@csuci.edu

If you have questions about this form, please contact Gina Matibag at (805) 437-3320
For additional information please consult the MSFT web page.

Project or Activity Title: Equipment for Fine-Scale Geospatial Mapping and Surveying in Undergraduate ESRM Courses

Name of organization requesting funds: ESRM Program Date: 1/8/15

Requestor: Sean Anderson Contact Phone Number: (805) 732-2732 E-mail: sean.anderson@csuci.edu

Amount of MSFT Funding Requested: $18,030

Date Funding Needed by: July 2015

Will you receive funds from any other source(s)? YES X NO
*If yes, please detail amount requesting from other source(s) as well as your total request for fiscal year 2014-2015 (including request from MSFT).*

Has this project or activity previously received MSFT funding? No
If yes, please attach copy of report

Please describe how the use of MSFT funds for this project or activity will benefit the CI student body.

Please provide the following in your application. You may attach additional pages and materials (applicants may be requested to meet with the committee to discuss proposals):

## 1. Brief Project Description

ESRM teaches mapping and surveying in a number of our undergraduate classes (ESRM 328: Intro to GIS, ESRM 428: Intermediate GIS, ESRM 492: Service Learning in New Orleans, ESRM 463: Water Resource Management, ESRM 464: Land Use Planning, *etc.*) with these techniques being now commonly employed in at least one-third of our year-long senior capstone research projects (ESRM 491 & ESRM 499). To date we have relied on standard accuracy units or utilized research grade equipment supplied by faculty research grants. The increasing demand for these systems in our more routine teaching has pushed us to the point where we need

systems dedicated to our classrooms and undergraduates (*i.e.* not borrowed from research projects). This request will allow us to better train students with the technologies they will be expected to utilize in the firms and agencies where they will work upon graduation. In addition, this equipment will bolster our growing survey capacity with aerial Unmanned Aerial Systems by allowing us to verify and check the accuracy of precision mapping collected via very different mapping platforms.

The Nikon Nivo 5.c Total Station is a valuable instrument for any aspiring land surveyor. The precision, speed, and accuracy of data collection are unmatched by traditional methodology. The Total Station determines the coordinates of a reflector prism by bouncing a laser from a stationary point, then calculating vertical and horizontal angles, slope, and distance. The onboard WindowsCE computer's microprocessor computes, records, and displays these calculations instantly. By learning the intricate Spectra SurveyPro software, students become considerably more competent with evolving technology. In a rapidly advancing field, this is a necessary skill set to make the transition to real world application or continued educational development. Learning and applying the basic functionality of the Total Station allows students to have a "hands on" educational experience with relevant, up to date equipment. To conduct or repeat a study with a level of accuracy acceptable by modern standards, use of a Total Station is imperative. Additionally, the Nikon Nivo 5.c is fully expandable for use with more advanced techniques and instrumentation, allowing it to grow with the program. These prevailing methods are becoming increasingly more popular, saving valuable time and money for staff and team.

By layering on accurate latitude and longitude data from our submeter iSXBlue2 receivers (optimized to work with iPads rather than laptops), our students will be able to both master key skills and do essentially the equivalent surveying on the fly in the field that typically requires equipment costing three times the price and that is less mobile.

In summary we are requesting two categories of equipment:

1) Wireless, submeter accuracy iSX Blue2 GPS receivers which port to mapping software on iPads via Bluetooth (for X & Y mapping) and
2) A Nikon Nivo 5.c Total Station total station for accurately determining elevation (sub centimeter accuracy; for elevation)

Combined, these tool sets will allow students to engage in a wide variety of mapping and interrogation of the natural world: high-resolution erosion studies, dynamic creek geomorphology, beach dynamics, vegetation dynamics, restoration planning, hydrological forecasting, etc.

## 2. Project/Activity Budget

Please note that were complete funding not available, we would prefer equipment in the following priority:

| | |
|---|---|
| 1st Priority: Total Station | $6,310 |
| 2nd Priority: Set #1 submeter GPS array (1 receiver & 2 iPads) | $5,860 |
| 3rd Priority: Set #2 submeter GPS array (1 receiver & 2 iPads) | $5,860 |

I am attaching a detailed quote from the Total Station Vendor to explain the pricing discount at the end of this application. What follows is our budget summary:

Total Station

| | |
|---|---|
| Nikon Nivo 5.C (5sec.) Reflectorless Total Station | $7,982 |
| Education discount & rental fees applied from O'Hirok NPS Grant | -$1,672 |
| Net cost: | $6,310 |

| | | |
|---|---|---|
| Wireless Submeter Mappping Array (Set #1) | | |
| iSXBlue2-GNSS | | $4,508 |
| iPad Air2 (data logging & display) | 2 @ $537 each | $1,074 |
| LifeProof Weatherized iPad Case | 2 @ $139 each | $278 |
| | Net cost for 1 array: | $5,860 |
| Wireless Submeter Mappping Array (Set #2) | | |
| iSXBlue2-GNSS | | $4,508 |
| iPad Air2 (data logging & display) | 2 @ $537 each | $1,074 |
| LifeProof Weatherized iPad Case | 2 @ $139 each | $278 |
| | Net cost for 1 array: | $5,860 |
| | Total Request: | $18.030 |

***Please note, all prices include taxes, S & H

## 3. Project Assessment

We will log the usage of this instrument array for the first year of its inclusion in our ESRM courses. Focual measures will include the number of capstone research projects it supports, the number of student hours logged in various ESRM courses, and the number of maps and data sets produced over the course o the first year.

## 4. Sources of Project Support.

Dr. Linda O'Hirok and six ESRM Capstone students are currently renting a Total Station for our collaborative research with the National Park Service on Santa Rosa Island. We have arranged both a non-routine educational discount and the application of the rental fees towards the purchase of a total station if we purchase it before the end of the year. This amounts to a negotiated cost savings of $1,672.

Our program has currently been using one submeter SX Blue unit purchased via one of Dr. Anderson's research grants. This unit has supported more than 105 senior capstone projects and numerous (dozens???) course activities over the past six years, but this unit is almost completely worn out and will be retired at the end of this academic year.

**Fiscal Management:** Project sponsor's unit or department may be responsible for incurred over and above what is funded through the MSFT. If support is requested for costs beyond initial award, or for use on activities or materials not included in approved proposals, the project sponsor must seek approval from the MSFT committee. The project sponsor will be responsible for managing purchases and transfers of funds related to approved projects.

Please review MSFT web page for information about the fund and its objectives before submitting your application

# LEWIS & LEWIS ENTERPRISES

1600 CALLENS ROAD
P. O. BOX 1328 - VENTURA, CA 93002-1328
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**Account # 2626** **December 11, 2014**

California State University Channel Islands
Attn. Linda O'Hirok linda.ohirok@csuci.edu
Camarillo, CA 93012

## *Purchase Quotation*

| Qty. | Part Number | Model & Description | L&L Price | Total |
|---|---|---|---|---|
| 1 | RENTAL/S | #HNA30500 Nikon Nivo 5.C (5sec.) Reflectorless Total Station with two battery packs, charger, manual CD, carrying case **And Onboard Survey Data Collection Software Serial #C201138 Age 11-15-13** | ~~$8,250.00~~ USED $6,800.00 | **$6,800.00** |
| 2 | 67201-01-SPN | Battery Pack for Nikon Nivo 5.C | $135.00 | **$270.00** |
| 1 | 01-WDF20-O | SitePro Wood/Fiberglass Tripod **Yellow with Orange hardware** | $125.00 | **$125.00** |
| 1 | 8082-00 | Sokkia 8ft. Adjustable Prism Pole | $105.00 | **$105.00** |
| 1 | 9300-C-C | Omni Tilt Single Prism with Target **Available in Orange or Flo Lime** | $125.00 | **$125.00** |
| | | | **TOTAL** | **$7,425.00** |
| | | | CSUCI Educational Discount | -$525.00 |
| | | | **TOTAL** | **$6,900.00** |
| | | | 100% Rental Credit from Rental Order #124710 (10/16 thru 11/15/14) | -$1,030.00 |
| | | | **TOTAL** | **$5,870.00** |
| | | | Calif. Sales Tax – 7.50% | $440.25 |
| | | | **GRAND TOTAL** | **$6,310.15** |


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