SECOORA Year 1 Descope Budget Justification:

The total request for this award is **$2,583,965**

Salary + Fringe: Total funds requested are **$220,682** for the PI (9.00 months), D. Hernandez, the RCOOS Manager (11.0 months), V. Subramanian, the Business Manager (5.50 months), M. Lee, and a part-time Communication Specialist (6.00) A. Wakely. Fringe is calculated at 29% of salary ($63,998).

Travel: TOTAL of $46,500 is requested to support travel. **$10,500** is requested for approximately 20 trips by SECOORA staff (from Charleston, SC and St. Petersburg, FL) to IOOS meetings (three trips to DC), IOOS Association/other RA meetings (Alaska, two trips to DC, Baltimore, New Orleans), science meetings (MTS, Ocean Science), regional workshops (Melbourne, FL, Jacksonville, FL, and Savannah, GA), visits to PIs, stakeholders and partners (Raleigh, NC, and Myrtle, SC, etc.), and for a staff retreat (travel for 2 staff between St. Petersberg, FL and Charleston, SC). Included in the $10,500 travel amount above is also funds for the SECOORA Board Chair for three trips originating in Jacksonville, FL, one for the IOOS meeting in DC, one to Charleston, SC, and one to an IOOS Association meeting in DC. Approximately **$32,000** in travel is also requested to support Board member travel to two meetings per year (1 fall meeting in Charleston, SC and 1 meeting in May (location TBD)(16 Board members x 2 meetings X approximately $1,000/ person each meeting). IOOS Advisory Committee travel for Conrad Lautenbacher is included in the total travel line (**$4,000**). All travel is domestic.

Supplies: $5,063 is requested for office supplies, printing, postage, computer related expenses, other meeting supplies, and miscellaneous supplies for observing assets.

Other: $7,000 for IOOS Association dues; **$25,000** to support a regional workshop aimed at furthering the Animal Telemetry Network; and **$9,000** for communication support, website hosting, liability insurance, legal expenses, etc.; **$35,428** for supplies related to the Glider effort.

Indirect: SECOORA charges 11.68% on all direct charges and the first $25,000 in contracts/subawards. Total indirect is **$109,460.**

CONTRACTUAL: $10,000 for audit and accounting expenses; **$40,000** for **Python Data Analysis Tools for Oceanographers Services** (Filipe Fernandez); **$195,800 for DMAC Services** (Axiom Data Science, LLC).

Additional SUBAWARDS:

University of North Carolina Wilmington – Dr. Lynn Leonard
Total Costs: $365,000

Salary and Fringe

Principal Investigator – Dorton: 2.75 months salary 12,900. Salary support is requested for Dorton to assure that all moorings are permitted appropriately through federal and state agencies, provide on-going communications with stakeholders regarding observing activities in the Carolinas region, manage budgets and subcontracts, and prepare project and personnel reports. Note that 2.75 months is not sufficient for Dorton; if she is unable to secure other funds to maintain her position at UNCW, she may no longer work for the program.

Research Technician – 12 months salary, $45,255. The mooring technicians will provide O&M support for the 9 moorings operated by UNCW.

UNCW is providing support for the 2nd mooring technicians since the SECOORA budget does not provide enough funds for the required staff.

Fringe Benefits: UNCW assesses benefits at 36.5% of total salaries for the mooring technician and 34.6% of the total salary for Dorton. This equals $20,981 for all personnel involved on the project.

Total Salary: $79,136

Equipment

None requested.

Expendable Supplies

Supply costs for operation of the real-time moorings are estimated at $34,385. This includes costs for dataloggers, buoy modems, cell modems, shop supplies, connectors, wiring, solar panels, fuel for R/V TomTate, waverider batteries, etc.

Travel

RCOOS personnel request funds for travel in support of mooring deployments and maintenance activities. The mooring technicians have to travel around NC, SC and GA for maintenance for the RCOOS moorings. Travel support funds are used to pay for the State of NC lease vehicle and associated mileage (used in support of the RCOOS project). Also funds are used to support PI travel for SECOORA meetings. The total travel request for domestic US travel equals $5,722.

Purchased Services

Purchased services funds are requested at $33,000. Funds will cover the cost of equipment calibrations (e.g. weather sensors, CTDs, ADCPs), Iridium telemetry fees for the offshore moorings (ILM3 and LEJ3), and cell phone charges for moorings communicating through cell modems (ILM2, SUN2, SUN2 Wave, FRP2, and CAP2).

Funds from the purchased services budget line are also used to pay for UNCW research vessel support. The R/V Cape Fear and R/V Sea Hawk will be used to support mooring operations. The day rate for the: R/V Cape Fear equals $2400 + fuel; R/V Sea Hawk $600 + fuel.

Finally, annual insurance premiums for instruments deployed offshore are paid through the purchased services line (~$9,000 annually). UNCW insures ADCPs, CTDs, and WaveRider buoys.

Other Costs:

Contracted Services:

UNCW will issue a contract with the Skidaway Institute of Oceanography to cover 7 days on-board the R/V Savannah for the spring and fall NC/SC mooring turnarounds. The R/V Savannah estimated day rate for FY16 is $10,000 for a total contract value of $70,000.

UNCW will issue a contract to Second Creek Consulting who will provide support to the SECOORA data management team, provide QA/QC expertise for the data provided by UNCW moorings, assist with data recovery for the cell phone modem communications, and manage the QARTOD requirements for real-time

data. Total contract award value equals $44,000.

Indirect Costs

UNCW charges 48.5% IDC on all direct costs except equipment. IDC is only charged on the initial $25,000 for subcontracts. The IDC charged for this award equals $98,306.

University of South Florida – MOOR – Dr. Bob Weisberg
Total Costs: $250,000

Salary and Fringe

Principal Investigator: R.H. Weisberg (2 months of salary). The P.I., a tenured Distinguished University Professor in the CMS-USF, will provide overall project guidance; Co-PI: Y. Liu (2 months of salary); Co-P.I. Y. Liu will assist with all aspects of data analyses and collection; Senior Associate: L. Zheng (2 months of salary); Senior Associate L. Zheng will assist with all aspects of modeling; Data Manager/Data Technician/Analyst: Jeff Donovan (2 months of salary); J. Donovan will support computer operations and data management/dissemination; Engineering Support: USF Ocean Technology Group (1 month of salary). The Ocean Technology Group consists of electrical, mechanical and software engineers employed by the USF College of Marine Science. Salary funds are for as-needed engineering support related to mooring platforms.

Fringe Benefits: $19,550. Fringe benefits are calculated @ 16.94%, plus 1269/mo. (medical and life insurance) on faculty and staff with twelve month appointments.

Total Salary: $85,442 (Total + Fringe = $104,992)

Equipment

Computer server

Expendable Supplies

Mooring Supplies: $25,000
Batteries: $2,400

Mooring supplies includes expendables needed for maintaining surface buoys and bottom mounted stations. These include underwater and surface data and power cables, replacement electronic components for sensors, telemetry and data logging systems, antennas, solar panels, material stock for hardware repairs, various hardware, mooring cable, shackles, tools and diving supplies. This also includes numerous small expense items such as tape, cable ties, bottom paint, zinc anodes, etc. Batteries needed includes solar buoy batteries used to power the telemetry and meteorological sensors, current meter batteries, CTD batteries and diagnostic electronics batteries.

Travel

Travel is for P.I. interactions within SECOORA and for dissemination of scientific information at professional meetings.
Travel for meetings and conferences:
Domestic: $3,010

OTHER COSTS:

Small boats: $2,500
FIO Ship time: $20,000
Calibrations: $12,000
Shop Support: $500
Freight: $100
TOTAL Other: $35,100

Other costs include small boat charters for offshore service trips, two days of ship time on the FIO R/V Weatherbird II, calibration of sensors (CTD's, ADCP's, wave gauges), limited funds for USF Machine Shop work and freight.

Communication/Data Telemetry Charges
Telemetry costs for AIRSIS satellite beacons total approximately $200 per month. Funds for these charges are included in mooring supplies/expense.

Indirect Costs

Indirect costs are charged @ 49.5% on MTDC, where for this budget MTDC are TDC minus the FIO ship time and equipment.

University of South Florida - Dr. Luther
Total Costs: $50,000

Salary and Fringe

Principal Investigator – 1.0 months, Salary: $9,072. Mark Luther will direct the overall operation and maintenance of the observing system.

Data Manager/Data Technician/Analyst – 1.0 months, Salary: $8,900

Jeff Donovan will provide data management support, including receipt of data from remote sites, automated data QA/QC routines, posting to the web, and provision of data to SECOORA and other partners.

Fringe Benefits $4,312

Fringe benefits include FICA, Retirement, Medicare and Worker's Comp. These total benefits are calculated at the standard state university rates of 16.94% of salary plus $1268/month for health and life insurance for the Data Technician.

Total Salary $22,284

Equipment

None requested.

Expendable Supplies

The total cost estimate for expendable supplies is estimated at $10,000, which includes but is not limited to

miscellaneous expenses such as mounting hardware and supplies for mounting instrumentation, power, and telemetry equipment, batteries, solar cells, boat fuel, and lab supplies needed in the preparation/calibration of sensor equipment, as well as data acquisition equipment and oceanographic or meteorological sensors, costing under $5,000, as needed. A portion of software maintenance for the COMPS GOES satellite receiver system is included in this category. Specific sensor equipment to be purchased is unknown until such time as equipment fails in the field.

Travel

Travel for meetings and conferences:

Domestic - Funds are requested in each year for travel for the PI and/or Field Engineer to attend one professional/technical meeting (Airfare/mileage: $300; Per Diem and incidentals: 2 days @ $180/day=$360). Additional local travel to service coastal observing sites in the amount of $500 is requested for USF vehicle mileage. Total travel requested is $1,160

Other Costs:

None requested.

Indirect Costs

Indirect Costs are charged at 49.5% of Modified Total Direct Costs and are estimated at $16,556.

University of Miami – HFR – Dr. Shay
Total Costs: $126,000

Salary and Fringe

Principal Investigator: L. K. Shay (1 month), $21,539.
Research Associate/Radar Technician/Data Manager: Jorge Martinez, (11 months), $44,419.
Fringe Benefits: $24,823. Calculated at PI-27%; Res. Assoc-42.8%
Total Salary: $90,781.

Equipment

Spares: None

Expendable Supplies: $1,319

Expendable supplies: Hard disks/CDs to store raw data on RAID, UPS, software, computing services for IOOS server at RSMAS, air conditioning units.

Travel: $5,500.

Travel for meetings and conferences: Domestic: $2,000. (ROW or ROWG)
Travel to servicing your priority radar sites (List the sites, #of trips, mode of transportation to the site, distance to the site) ($3,500. is budgeted)**:**
Dania Beach (DB): POV, 28 Miles, 24
Crandon (CRN): POV, 3 Miles, 24
Virginia Key (VK): POV, 3 Miles, 24
Turkey Point (TP): POV, 45 Miles, 36 (extra 12 for deployment)

Other Costs: $2,400

Electricity Charges: CRN ($110 per month) ; TP (?)
Communication/Data Telemetry Charges: AT&T ($50 at DB and VK); Sprint ($40 at CRN); TP Point (?)
Indirect Costs: $26,000.
IDC Rate of 26% at RSMAS is the Off Campus Rate: Subject to UM's approval.

University of South Carolina – HFR – Dr. Voulgaris
Total Costs: $90,000

Salary and Fringe

Principal Investigator: 0.75 month of summer salary ($9,392) is requested for the PI (G. Voulgaris) responsible for the management and administration of the 2 site radars.

Radar / Data Technician: 3 months of salary ($15,337) is requested for technical support (Jeff Jefferson – administrative supplement) to assist in the operations and on-site maintenance of the two sites and overseeing data transmission from remote sites to central site.

Graduate Student: 7.5 month support (1 academic semester and 3 mos of summer) for a total of $15,000) is requested for a graduate student to assist in the maintenance and continuous data analysis of the HF Radars as well as in the development of new products and analyses methods.

The total request for salaries and wages is $39,729.

Fringe benefits (see: https://sam.research.sc.edu/fringebenefits.html, accessed on 3/28/2016) at 24.701% for the technical support and the PI and at 0.65% for the student (full time, enrolled) are estimated. The total cost of fringe benefits is $6,206.

Total Salary: $45,935.

Equipment

n/a

Expendable Supplies

n/a (see other costs)

Travel

Travel for Meetings and Conferences

Domestic: $696 is budgeted for participation to SECOORA's annual meeting (2 days x $32 per diem (=$64) + overnight accommodation ($180) + airfare ($452)).

Travel to servicing your priority radar sites (2 sites CSW & GTN)

Domestic: Site maintenance travel: 6 day trips (1 per 2 months) to each site (442 miles return trip for CSW station; 250 miles return trip to GTN station, total 692 miles x 6 x 50.5c per mile = $2,096), daily allowance $32 per day x 6 days x 2 sites = $384. Total domestic travel request for site maintenance is: $2,480.

Total Domestic Travel: $3,176

Other Costs

(1) ***Electricity charges*** (to be paid to the Bell W. Baruch Foundation, property owner of the radar installation site) for the GTN station is estimated on average at $125 per month (total $1,500 per year).

(2) **Communication / Data Telemetry Charges**: Internet connection with static IP for data transmission from the remote sites (provided through Verizon) currently billed at $115 per month (including taxes and fees) for a total cost over 12 months of $1,380.

(3) **System hardware maintenance charges** for the radar equipment pro-rated at $1,000 / month for part replacements to ensure rapid maintenance of sites and replacement of faulted parts and upgrades. Total cost $12,000 per year.

(4) **Tuition Costs** for the graduate student (6 hrs per academic semester, and 1 credit hour for summer, for a total of 7 credit hrs, at a cost of $516 per credit hour, see: http://sc.edu/bursar/fees.shtml, accessed 3/28/2016) have been included in this category for a total tuition cost of $3,612.

Total other is $18,492

Indirect Costs

The USC negotiated rate for service projects of 35% (see: https://sam.research.sc.edu/idc14-17.html and https://sam.research.sc.edu/pdf/IDC%20Rate%20Agreement.pdf) on all expenses excluding equipment ($0) and tuition ($3,612) has been applied making the total IDC $22,397.

University of Georgia/ Skidaway Institute of Oceanography – HFR – Dr. Savidge
Total Costs: $90,000

Salary and Fringe

Principal Investigator – Dana Savidge, 1 month of annual Salary $100,667. Savidge is responsible for oversight, data analysis and interpretation, and generation of separate research funding to support the large fraction of radar operation (over half of manpower alone) not funded through SECOORA.

Research Associate and Radar Technician Trent Moore, 4 months of annual salary $56,600.
Moore is responsible for HFR operation, maintenance, repairs, data processing, and transferal to SECOORA and HFRnet.

Fringe Benefits. Fringe benefit rates are 19.41 for faculty summer salary and 41% for staff.

Total Salary as listed in budget.

Equipment

Costs for equipment to maintain existing radars is requested at $17,968 per year. This is used as needed to replace aging and failing components, or lightning damage to equipment or computer housing.

Expendable Supplies

Materials and supplies are budgeted at $3920 to cover supplies (rent, communications and power for each radar site are listed in 'other'.

Travel

Travel for meetings and conferences:

Domestic - $1,400 is budget for Savidge to attend the annual SECOORA meeting and short trips to collaborate with other SECOORA radar operators.

Foreign - None

Travel to servicing your priority radar sites (List the sites, #of trips, mode of transportation to the site, distance to the site) Travel to two sites is managed by car (1 hr) plus boat (45min) for St Catherines, and by car (1.5hr) for Jekyll. Two trips to Jekell/mo total $80/month, one trip to St. Cath's/mo totals $40, totaling $1440.

Other Costs:

Electricity Charges – (List each site cost per month)
Jekyll Island $102/monthly estimate (Quarterly billing of $305)
St. Catherines $100/monthly (Annual billing of $1200)

Communication/Data Telemetry Charges – (List your provider and costs per month)
Jekyll Island $50.00/monthly estimate (Quarterly billing of $150)
St. Catherines $92.94/monthly

Site Rental Fees
Jekyll Island $500/annually

Hardware maintenance costs (faulty parts replacements)

Tuition Costs none

Indirect Costs SkIO indirect cost rate is 50% of MTDC. Excludes equipment.

University of North Carolina at Chapel Hill – HFR – Dr. Seim
Total Costs: $108,000

Salary and Fringe

Principal Investigator – Seim requests 0.25 months of support to oversee the project.

Research Associate – We request 5 months of support for Muglia to provide overall operational support and coordination and 2.25 months of support for Haines, who manages the data flow and servers and bears primary responsibility for quality control efforts.

Radar Technician – 3 months of support are requested for IMS technicians to support the (very remote)

CORE installation.

Fringe Benefits. Fringe benefits are calculated as 22.741% of total salary plus $455.92 per month for health insurance and total $17,140.

Total Salary: $71,960

Equipment

None requested

Expendable Supplies

A supplies budget of $3,392 is included to cover miscellaneous expenses for repairs and maintenance such as support lines, cable and terminations, solar array materials (at CORE), computers and specialized tools.

Travel

A budget of $4,800 for travel is requested to cover routine and emergency trips to service and repair equipment at all sites which are all remote. A trip for Muglia to the DUCK or HATY radar site is typically $200, using a university vehicle. Three to 6 visits are typically required in a year; assuming the higher value to cover emergency visits the total cost is $2400. The Core Banks installation is particularly remote, requiring a ferry and 4-wheel drive vehicle for access, and requires a separate vessel for access during winter months when the ferry does not operate. Costs are roughly $350 for use of a 4-wheel university vehicle when the ferry is operative and $500 when it is not and a university vessel is used, and expected to total $2400 per year (4*$350+2*$500). Muglia has occasionally been needed at CORE during more challenging repairs or maintenance, and Haines has been needed at times, which requires overnight stays for which travel is roughly $750/trip. As expenses allow these funds may also support APM runs (we borrow a jet ski and deploy at the beach, requiring use of a 4-wheel drive vehicle) or travel to radar operator meetings.

Other Costs:

Electricity Charges – At HATY power is roughly $150/month. We also operate a propane generator at HATY; fuel and generator maintenance are $1602/year.

Communication/Data Telemetry Charges – HATY utilizes Charter Communications cable service and is $80/month. DUCK is at the FRF and does not require separate communications. CORE utilizes cell tower communications and costs $100 per month.

Indirect Costs

An off-campus overhead rate of 26% is requested because the majority of the effort is on the Outer Banks and total $22,286.

University of South Florida - HFR– Dr. Bob Weisberg
Total Costs: $126,000

Salary and Fringe

Principal Investigator: R.H. Weisberg (0.5 months of salary)

The P.I., a tenured Distinguished University Professor in the CMS-USF, will provide overall project

guidance.

Co-Principal Investigator: C. Merz (2.0 months of salary)
The co-P.I., a Research Faculty member will oversee the HF-radar operations and serve as the radar technician.

Research Associate: Y. Liu (2.0 months of salary)
Y. Liu, senior research scientist will assist Merz and provide scientific oversight of the data set.

Data Manager/Data Technician/Analyst: Jeff Donovan (1 months of salary)
J. Donovan will support computer operations and data management/dissemination.

Fringe Benefits: $11,883

Fringe benefits are calculated @ 16.94%, plus 1269/mo. (medical and life insurance) on faculty and staff with twelve month appointments.

Total Salary: $47,675 + $11,883 fringe = $59,558 (salary + fringe)

Equipment

Including, but not limited to CODAR transmitters, receivers, processing servers and an industrial air conditioning unit for the cooling of the Redington Shores HFR site's electronic equipment located within the sites industrial NEMA 4x enclosure.

Expendable Supplies

Field installation repair supplies to include, but are not limited to the following: a remote site HFR computer, cables, hardware, non-OCO replacement parts, and site maintenance parts: $6,000.

Travel

Travel is for required site maintenance as arises from time to time, P.I. interactions within SECOORA and for dissemination of scientific information at professional meetings.

Travel for meetings and conferences:
Domestic - $3,617

Travel to servicing your priority radar sites (List the sites, #of trips, mode of transportation to the site, distance to the site)

OTHER COSTS:

Electricity Charges – (List each site cost per month)
This averages ~42.50/mo.

Communication/Data Telemetry Charges – (List your provider and costs per month)
This averages ~120/mo.

Total Electric and Telephone charges not subject to IDC: **$7,800**

CODAR Support: $2,900

Freight: $300

Indirect Costs

MTDC (TDC – Equipment and Electric/Telephone) @49.5% = **$35,825**

South Carolina Department of Natural Resources
Total Costs: $75,000

Salary and Fringe

Principal Investigator – No salary is requested for Denise Sanger.

Research Associate - 0.5 months at $49,447 of Andrew Tweel, an Assistant Marine Scientist, to work with interested agencies on identifying the site location and oversee the implementation. 1.0 month at $54,573 of Saundra Upchurch, a Wildlife Biologist III, to work on the implementation of the Charleston Harbor site.

Radar Technician - None

Data Manager/Data Technician/Analyst- 1 month of Biologist I and 1 month of a research technician are requested to purchase equipment and provide support to Associate Investigators.

Graduate Student - None

Fringe Benefits. Fringe is 0.38% of the salary total.

Total Salary
$16,381 ($11,871 salary, $4511 fringe)

Equipment

Two EXO Yellow Springs Instrument water quality sonde will be purchased for a total of $35,487. The following prices are estimated for each unit: sonde with wiper - $7770, CT sensor - $911, pH sensor - $594, Optical DO sensor - $2077, turbidity sensor - $1908, antifouling guard $ 1563. The following prices are estimated for the surface unit: chlorophyll sensor $3583, FDOM sensor $2258.

Expendable Supplies

A total of $14,859 is requested in supply money. This will cover the initial costs related to acquiring one telemetry package for the surface sonde at $7020, pilings, lumber, and other necessary supplies for installation.

Travel

Travel for meetings and conferences:

Domestic - Travel funds are requested to cover the costs of one individual to attend a PI meeting or a regional conference. The funds are estimated at two hotel nights at $150/night and three days of per diem ($32/day).

Foreign - None

Other Costs:

Costs associated with diving/piling contractors for installation ($5,000), boat fees (10 days at $90), boat gas ($257) and vehicle miles (600 miles at $0.50; 500 miles to attend PI meeting and 100 to service instruments) are included in the requested funds.

Electricity Charges – None

Communication/Data Telemetry Charges – None

Hardware maintenance costs - None

Tuition Costs - None

Indirect Costs

The current SCDNR indirect rate is 11.69% (see attached negotiated rate document).

Skidaway Institute of Oceanography – Gliders – Dr. Edwards
Total Costs: $22,473

Salary and Fringe

Principal Investigator – We request $8250 for one month of salary for PI Edwards, who will lead the glider observatory effort.

Research Associate – We request $2083 for half of a month for a research technician, who will assist with glider prep and oxygen calibrations.

Radar Technician – N/A

Data Manager/Data Technician/Analyst- N/A

Graduate Student – N/A

Fringe Benefits

UGA budgets fringe benefits at different rates, depending upon position. PI rate here is 19.41%, and the technician rate is 41%, for a total of $2455. Actual charges are posted to grants based on individual employee's benefit selections.

Total Salary: $12,789

Equipment

N/A

Expendable Supplies

We budget $933 to cover supplies, including anti-fouling materials, ballasting supplies, tools for deployment/recovery, and other required expendables.

Travel

Travel for meetings and conferences:

Domestic – We budget $750 to cover travel for deployment, recovery, and instrument delivery between glider observatory PIs.

Travel to servicing your priority radar sites (List the sites, #of trips, mode of transportation to the site, distance to the site): N/A

Other Costs:

Insurance – We budget $510 to cover the cost of insurance of deploying gliders owned by other SECOORA PIs, calculated for one glider at the quoted rate of 1.75% of instrument value ($175,000) per year.

Electricity Charges – (List each site cost per month): N/A

Communication/Data Telemetry Charges – (List your provider and costs per month): N/A

Hardware maintenance costs (faulty parts replacements): N/A

Tuition Costs: N/A

Indirect Costs

The federal negotiated F&A rate for UGA is 50% MTDC.

Georgia Tech – Glider – Dr. Zhang
Total Costs $20,632

Salary and Fringe: $7,464

Dr. Fumin Zhang, Assoc. Professor will commit a 1% Mandatory Salary Fee portion ($120.00) of one month's salary in Year One's budget period to the project per Georgia Institute of Technology effort requirements. There will be one half-time 33% MS Graduate Research Assistant at $660 per month 10.75 months ($7,095.00) in Year One's budget period.

Fringe rate for Dr. Zhang is based on 30%; GRA health insurance is based on 3%.

Travel: Travel funds in the amount of $133.00 are requested for travel to Savannah, GA for the Researcher and the GRA for research purposes and to collaborate with Dr. Edwards' laboratory of SKIO.

Other: Funds for tuition remission for the GRA are requested; tuition is calculated at $1,608.00 per month per GRA with one-half of this amount applied monthly to this project as student is working half-time on this project. Tuition amount for Year One is $8,643.00.

Indirect Costs: There will be an indirect charge of 57.8% for work associated with this research (excluding tuition remission). Amount requested: $4,392.00 for Year One's budget period.

University of North Carolina at Chapel Hill – Glider - Dr. Seim
Total Costs: $25,082

Salary and Fringe

Principal Investigator – Harvey Seim will receive 0.33 months of support, and serve as the project lead for UNC-CH, coordinating with other PIs, planning and carrying out recoveries and overseeing data management.

Research Associate – Sara Haines will receive 1.5 months of support, and serve as the primary technical lead for glider data management. She will also be involved in recoveries and glider preparation when necessary.

Fringe Benefits
A total of $3,855 is requested for fringe benefits. Fringe Benefits are calculated at 22.741% of annual salary. Health insurance for Sara Haines is $5471/year.

Total Salary
A total of $13,944 is requested for salary.

Equipment

No permanent equipment will be purchased.

Expendable Supplies

Supplies in support of glider operations will include specialized weights (for ballasting), anodes, line (for recoveries), reflective tape (for nighttime recoveries), tool replacements (as needed) and other miscellaneous items. We anticipate $500 in supplies.

Travel

Personnel will travel to the cost to board vessels for recovery and may require overnight stays depending on weather conditions. We anticipate 2 trips each budgeted at $878.

Other Costs:

The UNC-CH glider will be insured for the 1.25 months it is expected to be deployed or in transit. The value is approximately $150,000, and the premium is estimated to be $729.

Indirect Costs

This work will occur in the coastal ocean along the eastern seaboard and will require staff to work off-campus in support of the missions. We therefore request an off-campus rate of 26%. Total indirect costs is $5176.

North Carolina State University – Glider – Dr. He
Total Costs: $22,053

Salary and Fringe

Principal Investigator – 0.5 month/year, $6490. PI will oversee the NCSU portion of the glider project, produce project reports and journal publications, and supervise Research Associate.

Research Associate -1.5 months/year, $6250. This post-doc technician will assist with glider preparation, deployment, communication, and retrieval.

Fringe Benefits $3,330
Principal Investigator –33%, $2142

Research Associate – 19%, $1188

Total Salary $12,740
Total Salary + Fringe $16,070

Equipment

No equipment funds requested.

Expendable Supplies

none

Travel

Travel for meetings and conferences:
Domestic - none
Foreign - none

Travel to servicing your priority radar sites (List the sites, #of trips, mode of transportation to the site, distance to the site)
Glider deployment and retrieval: $600.

Other Costs:

Electricity Charges – (List each site cost per month) none

Communication/Data Telemetry Charges – (List your provider and costs per month) none

Hardware maintenance costs (faulty parts replacements): $400

Tuition Costs none
Insurance: $432, to cover glider while it is deployed

Indirect Costs

Indirect rate: 26%; Indirect costs: $4551

University of South Florida – Glider – Dr. Lembke
Total Cost: $24,332

Salaries: Lembke will be the project coordinator

- The technician (TBA) will be announced
  Fringe breakdown: 16.94%, for all employees.

Fringe Benefits:

Retirement 7.69% of salary
FICA 6.2% of salary
Unemployment of 1.6% of salary
Medicare 1.45% of salary
Total Fringe: 16.94%

- Twelve month faculty, cover twelve months of health and life insurance during their twelve month calendar year appointment at a rate of $1269/per month ($1269 x 12) plus fringe rate of 16.94%. Prorated to the time spent on this project.

Equipment - All equipment to be used derives from other support. None is requested.

Travel – A nominal level of travel support is requested in year 1. Travel is requested for the deployment of the glider for the PI and Technician. Deployment site will be Cape Canaveral.

Deployment travel costs: $550.00

Hotel x 1 night ($150) per person/2 people =	$300
Per diem in state rate $36 per day 2 days =	$72
Mileage at .445/per mile x appx 400/miles RT	$178

Material & Supplies – Please see below. Total: $3373

G	OTHER DIRECT COSTS				
1	Batteries				0
2	Hardware				1915
2	Publication Costs				0
5	Subawards				
6	Iridium				0
	Argo				0
	boat				0
	service				0
	insurance			5	1458
	tuition				0

General supplies include, but aren't limited to raw materials, shop tools, machining tools, fasteners, underwater connectors and cables, and deployment and recovery items (lines, marine hardware, radios). All supplies listed will be utilized for maintenance and deployment operations of the USF's Gliders.

Indirect Costs - The indirect cost rate is calculated at 49.5% Modified Total Direct Costs (MTDC). University of South Florida Facilities and Administrative Cost Rate Agreement dated 06/08/2015. Cognizant Agency: Department of Health and Human Services, Darryl W. Mayes, 301-492-4855.

University of South Carolina – Modeling – Dr. Porter
Total Costs: $100,000

Salary and Fringe: $60,689

Salary: $46,862

Personnel funds (0.6 summer months) are requested to support the activities of PI Porter for project administration and overall project management. A portion of Porter's time will also be in support of the project entitled "Marine Weather Portal: Upgrades and Stakeholder –requested Enhancements" on which he is also a co-PI with J Dorton of UNC-W. No funds are requested for co-PI Scott who will assist with project support. Partial support of a GIS analyst (2 months) and a modeling specialist (7 months) are requested in support of Aims #1, 2, 3 and 4.

Fringe Benefits: $13,827. Fringe benefits are charged per State of South Carolina guidelines.

Expendable Supplies: $3,000

Funds are requested for basic IT supplies including a modeling workstation.

Travel: $2,500

Requested travel funds will partially support participation in offsite project meetings, SECOORA meetings, and IOOS meetings. Allowable charges will adhere to state and federal per diem guidelines as appropriate. All travel will be domestic

Other Costs: $13,176

Subcontract to the University of Maryland Center for Environmental Science: $13,176

UMCES will assist USC to evaluate data available for fecal coliform in Bulls Bay, SC. UMCES will work also closely with USC to assist in the development and interpretation of new predictive models for fecal coliform bacteria concentration in Bulls Bay, SC. Revision of the current mobile app will be necessary to include the new location and new application of predictive tools for shellfish harvest area regulation and management and UMCES will assist U SC in redesigning the mobile app to reflect this new element.

Indirect Costs: $20,635

IDC is calculated as 26.0% of allowable direct costs. This rate reflects USC's federally-approved IDC rate for off-campus research activities.

North Carolina State University – Modeling – Dr. He
Total Costs: $130,000

Salary and Fringe

As the PI of the project, Dr. He will commit 1 month/yr to oversee the NCSU portion of the project and produce project reports and journal publications. We request salary support for a NCSU research associate (RA) for 12 months. The RA will assist Dr. He in refining the ocean nowcast/forecast model, implementing the data assimilation component, and performing model-data comparisons, model analysis, and visualizations.

Fringe Benefits. Fringe benefits in University of North Carolina System are 33% and 19% for faculty and research associates (post-doctoral), respectively.

Equipment

No equipment is requested.

Expendable Supplies

Supplies not covered by administrative costs, including backup UPS batteries and computer/data storage, network cables are budgeted ($2545).

Travel

Travel funds ($2500 for domestic and $3000 for international) have been requested: (1) for Dr. He and his RA to attend the SECOORA annual meeting [2 people for 2 days; the cost breakdown includes: $500 for airfare and ground transportation, $300 for lodging, and $200 for per diem; total: $1000]; (2) for Dr. He to attend the AGU meeting to report research findings [1 person for 5 days; the cost breakdown includes: $600 for airfare and ground transportation, $700 for lodging, and $200 for per diem; total: $1500]; and. (3) for Dr. He to attend the EGU Spring meeting in Vienna, Austria to report research findings [1 person for 5 days; the cost breakdown includes: $1700 for airfare and ground transportation, $ 1100 for lodging; and $200 for per diem; total: $3000].

Other Costs:

Publication cost ($1000) is included.

Indirect Costs

Indirect cost at North Carolina State University is 51.5% of Modified Total Direct Costs (MTDC). MTDC is the sum of all direct costs, minus equipment and tuition.

Universifty of North Carolina Wilmington – Jennifer Dorton
Total Costs: $35,280

Work tasks are primarily the responsibility of Second Creek Consulting. UNCW will issue a subcontract for $25,000 to Second Creek Consulting. PI Dorton will not take any salary for this year; however, travel funds ($3,000) are requested so that the PI and Charlton Galvarino can meet with NWS offices in the region to review the current Marine Weather Portal site and make updates based on their feedback.

UNCW is providing the off-campus indirect rate since work is being conducted outside of New Hanover County, NC. The IDC rate is 26% which equals $7,280.

University of Georgia – Ocean Acidification – Dr. Noakes
Total Costs: $58,962

Salary and Fringe

Principal Investigator – Scott Noakes, Ph.D., 4.5 months, $27,294. The PI is responsible for the maintenance and deployment of the buoy sensors.

Fringe Benefits. Fringe benefits are calculated at a rate of 41.72% of salary.

Total Salary for the project is $27,294.

Equipment

No equipment is requested for this project.

Expendable Supplies

A total of $4,000 is requested for project supplies. Project supplies include antifouling material as well as return shipping equipment to PMEL which also includes shipping hazmat (lithium battery powered instruments and calibration gases). Maintenance of scuba gear utilized in the replacement of the buoy sensors is also included in this category.

Travel

Multiple trips to Savannah are required for buoy maintenance and sensor deployment. A trip to PMEL is included to discuss buoy deployments and the future of the NDBC 3 m buoy. Travel to an ocean acidification workshop or conference is included.

Travel for meetings and conferences:
Domestic - $4,116

Savannah, GA/GRNMS: Estimated 4-5 trips from Athens to Savannah and offshore to GRNMS. Each trip requires approximately 550 miles (auto) and 80 by boat.

Seattle/PMEL: Travel from Athens to Seattle (air; 4480 miles) and rental vehicle (200 miles).

Woods Hole/WHOI: Travel from Athens to Woods Hole, MA (2,100 miles; air and 200 miles auto) to the annual OCB Ocean Acidification Summer Workshop

Other Costs:

None

Electricity Charges – (List each site cost per month)
None

Communication/Data Telemetry Charges – (List your provider and costs per month)
None

Hardware maintenance costs (faulty parts replacements)
None

Tuition Costs
None

Indirect Costs

Indirect costs are calculated at the off campus rate of 26%.

University of Delaware – Ocean Acidification – Dr. Cai
Total Costs: $97,221

Salary and Fringe

Principal Investigator – 0.50 months, $9,030

He will supervise the entire project activity as well as reporting to NOAA and writing scientific papers.

Research Associate – post-doc 6.50 months, $29,786

He/she will be responsible for doing the underway pCO_2 analysis and DO Winkler titration together with the student. He will attend the GOMEC cruise to analyze TA.

Radar Technician - # of months, Salary – N/A

Data Manager/Data Technician/Analyst- #of months – N/A

Graduate Student – 6.00 months

Graduate student who will help with and DIC analysis and TA titration. He or she will attend the GOMEC cruise.

Fringe Benefits

Per UDel's negotiated agreement, fringe benefits are calculated at 35.9% for faculty and technical person and 7.5% for the graduate student.

Total Salary and Benefits = $67,209

Equipment

N/A

Expendable Supplies

$1,000 is requested to acquire a case of DIC and alkalinity Certified Reference Materials (CRMs) prepared by Dr. A. Dickson of SIO. One mass flow controller ($1000) and some parts are requested for modifying/repairing our DIC analyzer and alkalinity titrator ($500). The other supplies include chemicals, spare parts for the underway pCO2 analyzer, N2 gases, Orion Ross Combination pH electrodes ($400), a reference electrode, NBS and seawater pH standards ($300), and project related lab supplies ($268). The project related lab supplies include glassware, glass tubing, pipettes, and syringes.

Total supplies - $3,468

Travel

Travel for meetings and conferences:

Domestic - $1,400

Up to four trips to Savannah, GA for two people at $900 each (includes van rental, 2 nights

hotel, 3 days per diem) Total = $3,600.

Other Costs

Publication Costs - $2,100 to support publication costs

Indirect Costs

The Facilities and Administrative (F&A) rate was capped by the sponsor at 25%.

The University of Delaware will consider the costs and requests in the justification approved if an award is made and no contrary guidance from the agency is included in the award notice.