**Budget Justification**

**“Title of Proposal”**

**Texas A&M University-Commerce PI: Dr. John Smith**

1. **SENIOR PERSONNEL**

Salaries are based on actual salaries as of July 15, 2022 or, for unnamed positions, in *accordance with published salary scales of* ***Texas A&M University-Commerce*** and are projected to include a 3% annual merit increase (if applicable) for years 2 - 5.

**Principal Investigator Dr. John Smith:** Professor Smith in the Department of [department] and Director of the [list any other pertinent positions], will serve as the Principal Investigator of this project. He shall assume full administrative responsibility for the project and will direct all activities related to design, implementation, management, and dissemination of project results. For the “[project title]” project, Dr. [PI name] will oversee [one line describing specific, project-related duties]. Dr. Smith will also manage communication with collaborators at field sites, oversee all project staff, and provide mentoring and professional development to students and the postdoctoral associate. Dr. Smith will work with collaborators to prepare and document data files that report results to the broader research community. Dr. Smith will commit [1.0 calendar month] to the project in Year 1, 1.5 calendar months in year 2, 1.5 calendar months in year 3, 1.5 calendar months in year 4, and 2.0 calendar months in year 5. Year 1 activities include supervising undergraduate students performing the initial work on XXXX. Salary for Year 1 will be $X,XXX. Year 2 activities center on mentoring undergraduate students and continued work to XXXX. Salary for Year 2 will be $X,XXX. Year 3 activities focus on completing syntheses of XXXXX and guiding undergraduate students in the preparation of manuscripts to be submitted to peer reviewed journals such as XXXX. Salary for Year 3 will be $X,XXX. Year 4 activities include XXXX. Salary for Year 4 will be $X,XXX. Year 5 activities include XXXX. Salary for Year 5 will be $X,XXX. **Total salary requested for Dr. Smith is $00,000.**

**Co-Principal Investigator Dr. Joan Jones**: Professor [INSERT CO-PI NAME], at Texas A&M University-Commerce in the Department of [department], will be the Co-Principal Investigator (Co-PI) of this project and will provide overall direction and oversight of the research and the outreach projects. They will commit 1 [calendar/academic/summer] month per year. In addition to overall project responsibility, the Co-PI will co-supervise one [department] Graduate Research Assistant (GRA) working on the project. **Total salary requested for Dr. Jones is $00,000.**

1. **OTHER PERSONNEL**

**Postdoctoral Associate,** One Postdoctoral Associate will be assigned to the project to assist with [describe what the postdoc is needed for and what they will do]. The postdoc will also work with the PI and collaborators [describe secondary major duty], as well as provide training and mentorship of the graduate and undergraduate students. The Postdoctoral Associate will commit 12 calendar months of effort to the project for all three years at an annual base rate of $50,000. Year 1 activities include supervising undergraduate students performing the initial work on XXXX. Salary for Year 1 will be $X,XXX. Year 2 activities center on mentoring undergraduate students and continued work to XXXX. Salary for Year 2 will be $X,XXX. Year 3 activities focus on completing syntheses of XXXXX and guiding undergraduate students in the preparation of manuscripts to be submitted to peer reviewed journals such as XXXX. Salary for Year 3 will be $X,XXX. Year 4 activities include XXXX. Salary for Year 4 will be $X,XXX. Year 5 activities include XXXX. Salary for Year 5 will be $X,XXX.

**Total salary requested for the Postdoctoral Associate is $157,635.**

**Doctoral Graduate Student Research Assistant,** (DRA) will work with the PI and Postdoctoral Associate during the development phase of the ICI-4 system and on data-related efforts. The DRA will receive training in project-related lab and field research skills as well as collection and analysis of data for dissemination via scholarly journals and conferences. The DRA will commit 9.0, part-time academic months and 3.0, full-time summer months to the project annually at $26.08 per hour during the project periods Years 1 – 5. **Total salary requested for the Doctoral Research Assistant is $119,970.**

**Masters Graduate Student Research Assistant,** (GRA) will work with the PI and Postdoctoral Associate during the development phase of the ICI-4 system and on data-related efforts. The GRA will receive training in project-related lab and field research skills as well as collection and analysis of data for dissemination via scholarly journals and conferences. The GRA will commit 9.0, part-time academic months and 3.0, full-time summer months to the project annually at $23.18 per hour during the project periods Years 1 – 5. **Total salary requested for the Graduate Research Assistant is $106,640.**

**One to-be-named Undergraduate Student Research Assistant,** (UG) will work with the PI and Postdoctoral Associate during the development phase of the ICI-4 system and on data-related efforts. The UG will receive training in project-related lab and field research skills as well as collection and analysis of data for dissemination via scholarly journals and conferences. The UG will commit 9.0, part-time academic months and 3.0, full-time summer months to the project annually at $10.00 per hour during the project periods Years 1 – 5. **Total salary requested for the Undergraduate Research Assistant is $67,997.**

Salaries are based on July 15, 2022 actual salaries and are projected to include a 3% annual merit increase (if applicable) effective each year.

1. **FRINGE BENEFITS**

**Senior Personnel**

Fringe benefits are charged as direct costs and are calculated at current, standard university approved institutional fringe rate for Fiscal Year 2023 of 18.9% for faculty and professional staff plus $963 per person per month. Benefits include worker’s comp (.56%), leave termination (2.40%), unemployment compensation insurance (.56%), social security (6.20%), Medicare (1.45%) and retirement plan (8.0%). This diversity of benefits has contributed to a high retention rate among faculty and staff at the university.

**Other Personnel**

Graduate student benefits are calculated based on university fringe rates established for students when they are employed in session, and when they are employed in the summer months. For the academic and summer months committed, fringe is calculated at 3.2% of student salary plus $280 per person per month. For the undergraduates, fringe is calculated at 3.2% of student salary.
**The total amount requested for fringe benefits is $XX,XXX.**

1. **EQUIPMENT**

The following equipment (nonexpendable tangible personal property having a useful life of more than one year, and an acquisition cost of **$5,000** or more per unit) is requested in support of this project:

* 1. 40X-1000X Upright Fluorescence Microscope with Rotating Multi-filter Turret + Ultra-sensitive CCD Camera ($10,240)
	2. One (1) Zizz Whammer ($9,760)
	**The total amount requested for equipment is $20,000.**
1. **TRAVEL**

Travel numbers are based on established guidelines for travel expenditures at **Texas A&M University-Commerce** for out-of-state travel and current market rates. The total requested for travel is $X,XXX for year one, $X,XXX for year two, $X,XXX for year three, $X,XXX for year four and $X,XXX for year five.

Domestic Travel - Conferences

Dr. Smith requires funds to attend the XXX conference in San Francisco, CA in each year of the project. We estimate that conferences will be held at similar venues as previously held conferences such as [PROVIDE EXAMPLE CITIES FOR CONFERENCE LOCATION]. Costs for conference travel are calculated at $XXX for airfare, $XXX per night for lodging for XXX nights, $XX for local transportation and shuttles, $XX for parking at local airport, and $46 per day for per diem. Total requested for these conferences is $X,XXX for year one, $X,XXX for year two (two travelers), $X,XXX for year three, $X,XXX for year four, and $X,XXX for year five.

Domestic Travel – Field Travel (Barrow, AK – Domestic Travel includes Canada & Mexico)

The PI and Postdoctoral Associate will travel to the project site in Barrow, Alaska all five years of the project for deployment of the instrument, to conduct the experiments and make any adjustments. Costs for field travel are calculated at $XXX for airfare, $XXX per night for lodging for XXX nights, $XX for local transportation and shuttles, $XX for parking at local airport, and $46 per day for per diem. Total requested for these conferences is $X,XXX for year one, $X,XXX for year two (two travelers), $X,XXX for year three, $X,XXX for year four, and $X,XXX for year five.

* Trip #1 shall occur in the summer of year one with costs assessed at $X,XXX for airfare, and $XX dollars per day for per diem x X days. The total cost for this trip is $X,XXX.
* Trip #2 shall occur in the winter of year two with costs assessed at $X,XXX for airfare, and $XX dollars per day for per diem x X days. The total cost for this trip is $X,XXX.
* Trip #3 shall occur in the summer of year three with costs assessed at $X,XXX for airfare, and $XX dollars per day for per diem x X days. The total cost for this trip is $X,XXX.
* Trip #4 shall occur in the winter of year four with costs assessed at $X,XXX for airfare, and $XX dollars per day for per diem x X days. The total cost for this trip is $X,XXX.
* Trip #5 shall occur in the summer of year $X,XXX for airfare, and $XX dollars per day for per diem x X days. The total cost for this trip is $X,XXX. with costs assessed at $X,XXX (per person x 2) and $XX per day x X days x 2 people. The total cost for this trip is $X,XXX.

Foreign Travel – (Greenland and Yokohama, Japan) International per diem rates can be found here: <https://aoprals.state.gov/web920/per_diem.asp>.

Funding is required for Dr. Smith and the Postdoctoral Associate to travel to Greenland via New York to deploy the instrument and to make any needed adjustments. A $XXX (potential) change fee has been added to the cost of airfare in the likely event of inclement weather. Total requested international travel to Greenland is $X,XXX for year one, $X,XXX for year two, $X,XXX for year three, $X,XXX for year four, and for Greenland and Yokohama, $X,XXX for year five.

* Trip #1 shall occur at the end of year one with costs assessed at $X,XXX for airfare, $XXX per night for lodging, $XXX for local transportation, and $XX per day x XX days x 2 travelers. The total cost for this trip is $X,XXX.
* Trip #2 shall occur in the summer of year two with costs assessed at $X,XXX for airfare, $XXX per night for lodging, $XXX for local transportation, and $XX per day x XX days x 2 travelers. The total cost for this trip is $X,XXX.
* Trip #3 shall occur during the summer of year three with costs assessed at $X,XXX for airfare, $XXX per night for lodging, $XXX for local transportation, and $XX per day x XX days x 2 travelers. The total cost for this trip is $X,XXX.
* Trip #4 the PI will travel to the International Geoscience and Remote Sensing (IGARSS) Conference in Yokohama, Japan in year four with costs assessed at $X,XXX for airfare, $XXX per night for lodging, $XXX for local transportation, and $XX per day x XX days. The total cost for this trip is $X,XXX.
1. **PARTICIPANT SUPPORT –** [List # of participants][costs for items such as stipends or subsistence allowances, travel allowances, and registration fees paid to or on behalf of participants or trainees (**but not employees**) in connection with NSF-sponsored conferences or training projects; costs must be specified, itemized, and justified. See <https://www.nsf.gov/pubs/policydocs/pappg22_1/nsf22_1.pdf> Page 53]
*[This section of the budget also may* ***not*** *be used for incentive payments to research subjects. Human subject payments should be included on line G.6. of the NSF budget under “Other Direct Costs,” and any applicable indirect costs should be calculated on the payments in accordance with the organization’s Federally negotiated indirect cost rate.]*
High School Students Summer Program – The PI plans to recruit up to 30 local high school students to participate in a day-long workshop to demonstrate optical phenomena and train scientific thinking skills.
2. Stipends - N/A
3. Travel -We request $15/person for transportation for 30 local high school students.
4. Subsistence - We request $15/person to provide lunch during the all-day event for the high school students.
5. Other – Funds are requested to provide tuition remission to the X of graduate research assistants. Ph.D. Graduate Research Assistant’s tuition remission.
Year 1 – Year 5: $3,630
Total tuition remission: $18,150 for 5 years.

**G. OTHER DIRECT COSTS**

* 1. **Materials and Supplies**

The PI requests funds to purchase supplies to include computer parts, software, electronics, mounts and housing modifications, shipping boxes (10 Lepton kits in year 2), cold weather gear, medivac insurance (140 per person) and other supplies as needed. The total cost for supplies is estimated at $11,240 for year one, $12,120 for year two, and $10,240 for year three.

* 1. **Publication Costs/Documentation/Dissemination**  [costs of documenting, preparing, publishing or otherwise making available to others the findings and products of the work conducted under the grant]

$2,000 per year for years two and three are required for publication costs.

* 1. **Consultant Services**  [itemize each consultant, organizational affiliation, rate per day, number of days, any additional costs such as travel, lodging, supplies, and total cost for each consultant]
	2. **Computer Services** *[costs for computer services, including computer-based retrieval of scientific, technical and educational information, may be requested only where it is institutional policy to charge such costs as direct charges. A justification based on the established computer service rates at the proposing organization must be included. The proposal budget also may request costs for leasing of computer equipment]*

$1,500 per year for all three years of the project is required for computer services.

* 1. **Subawards** *[Identify and briefly describe other institutions involved in the project and total costs requested for each]. For example:*A subaward to the University of Minnesota (UM) is requested each year over a period of 4 years in order to support TAMUC’s NSF project. UM’s work will include involvement in programmatic decision-making under the guidance of Prof. Fukuoka in the Chemistry department as per the work and tasks as described in the project description. Please see separate subaward budget and budget justification for a detailed breakdown of costs.
	2. **Other** [any other direct costs not specified in categories above must be identified, itemized, and detailed in the budget justification]
	Funds are also requested in the amount of $21,102 to support Marvell Nanofabrication Laboratory (NanoLab) expenses, which includes a monthly access charge of $91.20/month each year for the GRA over the entire project period (totaling $3,282) and NanoLab usage fees at $45/hr with an estimated 11 hours/month over the entire project period (totaling $17,820).

	This section of the budget may be used for incentive payments to research subjects. Human subject payments should be included on line G.6. of the NSF budget under “Other Direct Costs,” and any applicable indirect costs should be calculated on the payments in accordance with the organization’s Federally negotiated indirect cost rate.]

Allowances for tuition remission, fee remission and university health insurance are requested for the GSRA. Fees are calculated for years 1-X (9 credits in the academic year and 6 during the summer).The current university health insurance rate for students is 3.2% plus $280/per month. The total amount requested is $XXX for year one, $XXX for year two, and $XXX for year three.

1. **TOTAL DIRECT COSTS: $XXXX**
2. **INDIRECT COSTS: $XXXXX**

Indirect Costs are calculated at the negotiated rate of 36%, and are based upon modified total direct costs. The A&M-Commerce modified total direct cost rate agreement excludes equipment, capital expenditures, charges for patient care, student tuition remission, rental costs of off-site facilities, scholarships and fellowships as well as the portion of each sub-grant and subcontract in excess of $25,000. The University’s Indirect Cost rate agreement date is 1/22/2020.

1. **TOTAL PROJECT COSTS (Y1-Y5): $XXX,XXX**