**Budget Justification:**

**A. Senior Personnel**

**PD/PI (Example Name 1):** Funding for 1 summer month per year for the duration of the project has been requested for the PI. The PI will coordinate the project, advise graduate students, and delegate tasks related to the project. They will train the student research assistant(s), guide the student(s) in manuscript writing, and will write the annual progress reports.

**Co-PD/PI (Example Name 2):** Funding for 1 summer month per year for the duration of the project has been requested for the PI. The PI will help to coordinate the project, advise graduate students, and delegate tasks related to the project. They will help to train the student research assistant(s), guide the student(s) in manuscript writing, and will contribute to annual progress reports.

**B. Other Personnel**

**Webmaster:**

A starting salary of $40,000 is requested for a webmaster staff position (TBD). The webmaster will help develop and maintain an interactive website for the purpose of the project.

**Graduate Student Assistant Salary:**

A starting salary of $1,667 per month at 50% effort for one graduate student is requested for the duration of the project. The student will work with the PIs on data collection, data analysis, and manuscript preparation.

*A 3% increase for years 2 and 3 has been included for all personnel.*

**C. Fringe Benefits**

Fringe benefits for faculty is calculated at our federally negotiated rate of 33.9% for faculty and 41.4% for staff

**E. Travel Costs:**

Travel to two domestic conferences and an international conference is planned for the project. In year 1, travel is based on a conference in March to San Diego California. In the second year, travel is based on a conference in Paris, France in September. In the third year, travel is based on a conference in Minneapolis, Minnesota in March. Costs are estimated for the PI to attend each conference for 5 days and are broken down in the tables below:

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| --- |
| **Year 1: Conference 1, San Diego, CA, USA** |
| Airfare | Per diem | Ground transportation | Registration | Lodging | Total |
| $475 | $55.50 per day x 2 days = $111 (75% full rate for 1st and last day of travel)$74 x 3 days = $222 | $70 (Taxi/Uber from and to airport) | $300 | $181 per day x 4 nights =$724 | $1902 |

|  |
| --- |
| **Year 2: Conference 2, Paris, France** |
| Airfare | Per diem | Ground transportation | Registration | Lodging | Total |
| $968 | $156 x 5 days = $780 | $100 (Taxi/Uber from and to airport) | $295 | $359 per day x 4 nights =$1436 | $3579 |

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| --- |
| **Year 3: Conference 3, Minneapolis, MN, USA** |
| Airfare | Per diem | Ground transportation | Registration | Lodging | Total |
| $270 | $59.25 per day x 2 days = $118.50 (75% full rate for 1st and last day of travel)$79 per day x 3 days = $237  | $50 (Taxi/Uber from and to airport) | $295 | $148 per day x 4 nights =$592 | $1563 |

**G. Other Direct Costs**

**1. Materials and Supplies:**

Funds totaling $26,100 for the duration of the project are requested ($12,600 in year 1, $8,500 in year 2, and $5,000 in year 3). Funds are based on historical costs for items such as primary and cancer cell lines from ATCC, liquid nitrogen, cell culture media, serum, flasks, reagents, gloves, parafilm, and other laboratory supplies.

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| **Year 1 Supplies** |
| Liquid Nitrogen | Airgas | $900 |
| Consumables (gloves, pipette tips, parafilm, ethanol, centrifuge tubes, etc.) | Fisher Scientific | $4000 |
| Serums, media, supplements | ATCC | $500 |
| Various primary/normal cell lines | ATCC | $3000 |
| Various mammalian cancer cell lines | ATCC | $3000 |
| Various cell culture supplies (tissue-treated flasks, cover slips, petri dishes) | Fisher Scientific and ATCC | $1200 |
| **Year 1 total = 12,600** |
|  |
| **Year 2 Supplies** |
| Liquid Nitrogen | Airgas | $900 |
| Consumables (gloves, pipette tips, parafilm, ethanol, centrifuge tubes, etc.) | Fisher Scientific | $4000 |
| Serums, media, supplements | ATCC | $500 |
| Various cell culture supplies (tissue-treated flasks, cover slips, petri dishes) | Fisher Scientific and ATCC | $1200 |
| Dyes for cell staining and imaging  | Fisher Scientific | $1900 |
| **Year 2 total = $8,600** |
|  |
| **Year 3 Supplies** |
| Liquid Nitrogen | Airgas | $900 |
| Consumables (gloves, pipette tips, parafilm, ethanol, centrifuge tubes, etc.) | Fisher Scientific | $3000 |
| Serums, media, supplements | ATCC | $300 |
| Various cell culture supplies (tissue-treated flasks, cover slips, petri dishes) | Fisher Scientific and ATCC | $800 |
| **Year 3 total = $5,000** |

**2. Publication costs:**

Costs are estimated at $4,500 per publication based on average costs for open-access journals. One publication is planned in year 2 and another in year 3 of the project.

**3. Consultants:**

$15,000 per year is requested for an external advisory board (EAB). The EAB will consist of 5 members which will be paid $1,000 each per year. The project also involves a yearly PI meeting that the EAB will attend and funds from the grant will cover travel expenses for parking, ground transportation, lodging, and meals at an estimated rate of $2,000 per person per meeting. The EAB will provide feedback on the experiments, assist in experimental design, and perform other relevant duties to ensure the success of the project.

**4. Subcontract:**

The PIs will work with collaborators at the University of Colorado Boulder. The Boulder team will assist with sample characterization such as microscopy, imaging, and live cell experiments. This includes salaries for the Boulder PIs and student assistants. The UCB subcontract is proposed at $210,600. Please see the separate and attached budget and justification.

**5. Computer Software:**

Funding for the purchase of Comsol is requested for the project. One license is estimated to initially cost $4,000. To renew the license in years 2 and 3, the cost will be 20% of the purchase price ($800/yr in years 2 and 3). This will total $5,600 for the project period.

 **6. Other:**

Other costs such as funds for printing and user fees are included in the budget. Printing costs include posters for conferences and research symposiums at a rate of $260/yr ($65/poster for 4 posters a year). User fees for microscopy (Raman, Confocal) are included at a rate of $30/hr for 100 hours per year for a total of $3000 per year for the duration of the project.

**I. Indirect costs**

Indirect costs are calculated at the UCCS federally negotiated rate of 46% of modified total direct costs (MTDC) which excludes subawards in excess of $25,000.