

The background features a complex, artistic illustration of biological and molecular structures. At the top, a chain of molecular models is depicted, transitioning from ball-and-stick models to a continuous string of spheres. Below this, a large, glowing blue structure resembling a virus or a complex protein is shown. To the left, a yellow DNA double helix is visible, along with a blue, glowing, shell-like structure. In the center, there are various smaller molecular models and a blue, glowing, shell-like structure. On the right, a large, pink, ribbon-like structure, possibly representing a protein, is shown. The overall color palette is dominated by blues, yellows, and pinks, with a soft, ethereal glow.

Division of Molecular and Cellular Biosciences (MCB)

Virtual Office Hours

Welcome!

We will begin at 2pm ET



Questions and Answers

Submit your questions via the Q&A box on your screen

- You may elect to submit your question anonymously.
- For specific questions about your project, please contact a Program Director.

Next MCB Virtual Office Hours

December 11, 2024: Building Synthetic Microbial Communities ([NSF 25-501](#))
and Other New Funding Opportunities



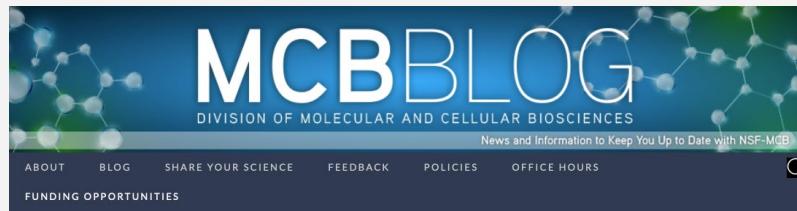
MCB Virtual Office Hour

Today's Topic:

How to Write a Great NSF Budget

Slides and recordings of past presentations at

<https://mcbblog.nsfbio.com/office-hours/2/>



NSF Division of Grants & Agreements (DGA)

Division Director – [Jamie H. French](#)

Deputy Division Director – [Lisa Scott-Morring](#)

Branch Chief (BIO/GEO/OISE/SBE) – [Deidre Coates](#)

Team Lead (BIO/OISE) – [Vanessa Richardson](#)

Grants Administrator – [Shirley Kerchner](#)

BIO Grants Specialists

[Sharon Glivens](#) (DEB/MCB/OISE)

sglivens@nsf.gov; 703-292-7837

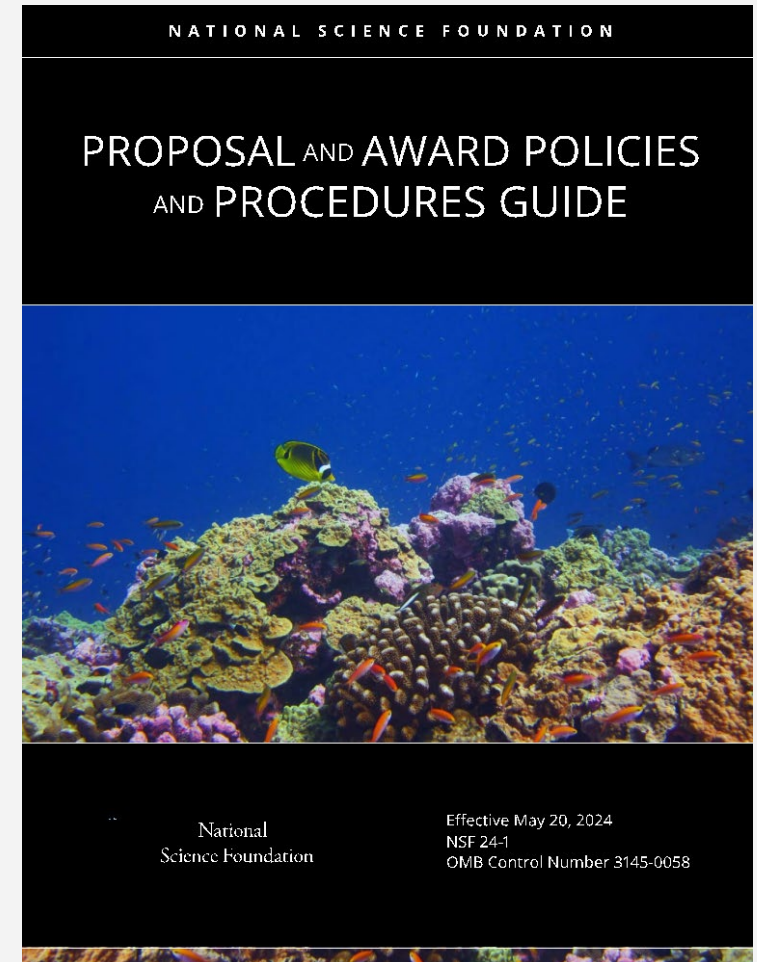
[Termia Talbert](#) (DBI/EF/IOS)

ttalbert@nsf.gov; 703-292-7074



Required Sections of an NSF Proposal

- Cover Sheet
- Project Summary
- Project Description
- References Cited
- Budget
- Budget Justification
- Facilities, Equipment and Other Resources
- Senior Personnel Documents
 - Biographical Sketch(es)
 - Current and Pending (Other) Support
 - Synergistic Activities
- Data Management and Sharing Plan
- Mentoring Plan (if applicable)
- Plan for Safe and Inclusive Working Environment (if applicable)



PAPPG 24-1



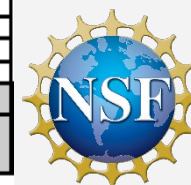
Budget

Budgetary guidelines are found in both the PAPPG and in specific program solicitations

- The proposal must contain a budget for each year of support requested.
- Know what various elements of your project will cost (good estimates).
- Ask for what you need:
 - Realistic and reasonable (Tip: see recent awards)
 - Well justified
 - Consistent with program guidelines
- Eligible costs include:
 - Personnel
 - Equipment
 - Travel
 - Participant Support
 - Other direct costs (materials, publications, services, subawards, “other”).

[Browse projects funded by this program](#)

| SUMMARY PROPOSAL BUDGET | | | | FOR NSF USE ONLY | | | |
|--|--|--|--|-------------------------------|------|---------------------------------|--------------------|
| ORGANIZATION XXXX | | | | PROPOSAL NO. | | DURATION (MONTHS) | |
| | | | | | | Proposed | Granted |
| PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR JOHN DOE | | | | AWARD NO. | | | |
| A. SENIOR PERSONNEL: P/PI, Co-PIs, Faculty and Other Senior Associates List each separately with name and title. (A.7. Show number in brackets) | | | | | | NSF-Funded Person-months | |
| | | | | CAL | ACAD | SUMR | |
| 1. John Doe | | | | 1.0 | | | \$12,020 |
| 2. | | | | | | | |
| 3. | | | | | | | |
| 4. | | | | | | | |
| 5. | | | | | | | |
| 6. () OTHERS (LIST INDIVIDUALLY ON BUDGET EXPLANATION PAGE) | | | | | | | |
| 7. (1) TOTAL SENIOR PERSONNEL (1-6) | | | | | | | 12,020 |
| B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS) | | | | | | | |
| 1. (1) POSTDOCTORAL ASSOCIATES | | | | 2.0 | | | 19,334 |
| 2. () OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.) | | | | | | | |
| 3. () GRADUATE STUDENTS | | | | | | | |
| 4. () UNDERGRADUATE STUDENTS | | | | | | | |
| 5. () SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY) | | | | | | | |
| 6. () OTHER | | | | | | | |
| TOTAL SALARIES AND WAGES (A + B) | | | | | | | |
| C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS) | | | | | | | |
| TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C) | | | | | | | |
| D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.) | | | | | | | |
| TOTAL EQUIPMENT | | | | | | | |
| E. TRAVEL 1. DOMESTIC (INCL. CANADA, MEXICO AND U.S. POSSESSIONS) | | | | | | | |
| 2. FOREIGN | | | | | | | |
| F. PARTICIPANT SUPPORT | | | | | | | |
| 1. STIPENDS \$ 15,000 | | | | | | | |
| 2. TRAVEL 5,000 | | | | | | | |
| 3. SUBSISTENCE 3,000 | | | | | | | |
| 4. OTHER 2,000 | | | | | | | |
| TOTAL NUMBER OF PARTICIPANTS (12) | | | | TOTAL PARTICIPANT COSTS | | | |
| G. OTHER DIRECT COSTS | | | | | | | |
| 1. MATERIALS AND SUPPLIES | | | | | | | |
| 2. PUBLICATION/DOCUMENTATION/DISSEMINATION | | | | | | | |
| 3. CONSULTANT SERVICES | | | | | | | |
| 4. COMPUTER SERVICES | | | | | | | |
| 5. SUBAWARDS | | | | | | 37,082 | |
| 6. OTHER | | | | | | 4,082 | |
| TOTAL OTHER DIRECT COSTS | | | | | | | |
| H. TOTAL DIRECT COSTS (A THROUGH G) | | | | | | | |
| I. INDIRECT COSTS (F&A) (SPECIFY RATE AND BASE) | | | | | | | |
| TOTAL INDIRECT COSTS (F&A) | | | | | | | |
| J. TOTAL DIRECT AND INDIRECT COSTS (H + I) | | | | | | | |
| K. RESIDUAL FUNDS (IF FOR FURTHER SUPPORT OF CURRENT PROJECT SEE GPG I.D.7.) | | | | | | | |
| L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K) | | | | | | \$ | \$ |
| M. COST SHARING: PROPOSED LEVEL \$ | | | | AGREED LEVEL IF DIFFERENT: \$ | | | |
| P/PI TYPED NAME AND SIGNATURE* | | | | DATE | | FOR NSF USE ONLY | |
| ORG. REP. TYPED NAME & SIGNATURE* | | | | DATE | | INDIRECT COST RATE VERIFICATION | |
| | | | | | | Date Checked | Date of Rate Sheet |



Budget Justification

- Must provide detailed breakdown of spending in each category and justification for requested amounts.
- No more than five pages for all years of the project.

| SUMMARY PROPOSAL BUDGET | | FOR NSF USE ONLY | | |
|--|--|--|--|-----------------------------------|
| ORGANIZATION XXXX | | PROPOSAL NO. | | DURATION (MONTHS) |
| PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR JOHN DOE | | AWARD NO. | | Proposed Granted |
| A. SENIOR PERSONNEL (R&D, Co-PIs, Faculty and Other Senior Associates) List each separately with name and title. (A.7. Show number in brackets) | | NSF-Funded Person-months | | Funds Requested by Proposer |
| 1. John Doe | | 1.0 | | \$12,020 |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. () OTHERS (LIST INDIVIDUALLY ON BUDGET EXPLANATION PAGE) | | | | |
| 7. (1) TOTAL SENIOR PERSONNEL (1-6) | | | | 12,020 |
| B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS) | | | | |
| 1. (1) POSTDOCTORAL ASSOCIATES | | 2.0 | | 19,334 |
| 2. () OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.) | | | | |
| 3. () GRADUATE STUDENTS | | | | |
| 4. () UNDERGRADUATE STUDENTS | | | | |
| 5. () SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY) | | | | |
| 6. () OTHER | | | | |
| TOTAL SALARIES AND WAGES (A + B) | | | | |
| C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS) | | | | |
| TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C) | | | | |
| D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000) | | | | |
| TOTAL EQUIPMENT | | | | |
| E. TRAVEL 1. DOMESTIC (INCL. CANADA, MEXICO AND U.S. POSSESSIONS) | | | | |
| 2. FOREIGN | | | | |
| F. PARTICIPANT SUPPORT | | | | |
| 1. STIPENDS \$ 15,000 | | | | |
| 2. TRAVEL 5,000 | | | | |
| 3. SUBSISTENCE 3,000 | | | | |
| 4. OTHER 2,000 | | | | |
| TOTAL NUMBER OF PARTICIPANTS (12) | | | | |
| TOTAL PARTICIPANT COSTS | | | | |
| G. OTHER DIRECT COSTS | | | | |
| 1. MATERIALS AND SUPPLIES | | | | |
| 2. PUBLICATION/DOCUMENTATION/DISSEMINATION | | | | |
| 3. CONSULTANT SERVICES | | | | |
| 4. COMPUTER SERVICES | | | | |
| 5. SUBAWARDS | | | | 37,092 |
| 6. OTHER | | | | 4,062 |
| TOTAL OTHER DIRECT COSTS | | | | |
| H. TOTAL DIRECT COSTS (A THROUGH G) | | | | |
| I. INDIRECT COSTS (F&A) (SPECIFY RATE AND BASE) | | | | |
| TOTAL INDIRECT COSTS (F&A) | | | | |
| J. TOTAL DIRECT AND INDIRECT COSTS (H + I) | | | | |
| K. RESIDUAL FUNDS (IF FOR FURTHER SUPPORT OF CURRENT PROJECT SEE GPG II.D.7.) | | | | |
| L. AMOUNT OF THIS REQUEST (J) OR (J) MINUS K | | | | |
| M. COST SHARING: PROPOSED LEVEL \$ | | AGREED LEVEL IF DIFFERENT: \$ | | |
| PI/POD TYPED NAME AND SIGNATURE | | DATE | | |
| ORG. REP. TYPED NAME AND SIGNATURE | | DATE | | |
| | | FOR NSF USE ONLY | | |
| | | INDIRECT COST RATE VERIFICATION | | |
| | | Date Checked Date of Rate Sheet Initials-ORG | | |

Justification

A. Senior Personnel (Total \$)

PI: Dr. Who (mo/yr)

Co-PI: Dr. Strange (mo/yr)

B. Other Personnel (Total \$)

Postdoctoral scholar (mo/yr)

Graduate student (mo/yr)

C. Fringe Benefits (Total \$)

D. Equipment (Total \$)

E. Travel (Total \$)

F. Participant Support (Total \$)

G. Other Direct Costs (Total \$)

1. Materials and Supplies (\$)

...

6. Other (\$)

H. Total Direct Costs (A through G)

I. Indirect Costs

Recommendation: Make it easy for NSF staff to find related information in the budget and justification; e.g., use line-item titles to label justification sections; include key \$ amounts (total, cost breakdown).



Budget Justification – Senior, Other Personnel

| A. SENIOR PERSONNEL: P/PI, Co-PIs, Faculty and Other Senior Associates List each separately with name and title. (A.7. Show number in brackets) | NSF-Funded Person-months | | | Funds Requested By Proposer | Funds Granted by NSF (If Different) |
|--|-----------------------------|------|-----|-----------------------------------|---|
| | CAL | ACAD | SUM | | |
| 1. John Doe | 1.0 | | | \$12,020 | \$ |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. () OTHERS (LIST INDIVIDUALLY ON BUDGET EXPLANATION PAGE) | | | | | |
| 7. (1) TOTAL SENIOR PERSONNEL (1-6) | | | | 12,020 | |
| B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS) | | | | | |
| 1. (1) POSTDOCTORAL ASSOCIATES | 2.0 | | | 19,334 | |
| 2. () OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.) | | | | | |
| 3. () GRADUATE STUDENTS | | | | | |
| 4. () UNDERGRADUATE STUDENTS | | | | | |
| 5. () SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY) | | | | | |
| 6. () OTHER | | | | | |
| TOTAL SALARIES AND WAGES (A + B) | | | | | |
| C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS) | | | | | |
| TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C) | | | | | |

A. Senior Personnel (Total \$)

PI: Dr. Who (mo/yr)

Co-PI: Dr. Strange (mo/yr)

B. Other Personnel (Total \$)

Postdoctoral scholar (mo/yr)

Graduate student (mo/yr)

C. Fringe Benefits (Total \$)

PAPPG II.D.2.f.i/ii

- As general policy, NSF limits the salary for each senior/key person to two months of their regular salary in any one year (summed over all current NSF awards).
- Compensation >two months must be disclosed in the proposal budget, justified in the budget justification, and must be specifically approved by NSF in the award notice.

Personnel categories are defined in Exhibit II-3 of the PAPPG.



Budget Justification – Equipment, Travel

| | | | |
|---|---|--|--|
| D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.) | | | |
| TOTAL EQUIPMENT | | | |
| E. TRAVEL | 1. DOMESTIC (INCL. CANADA, MEXICO AND U.S. POSSESSIONS) | | |
| | 2. FOREIGN | | |

D. Equipment (Total \$)

E. Travel (Total \$)

PAPPG II.D.2.f.iii

Equipment:

- Generally, tangible property with a useful life >1 year and cost >\$5,000.
- Limited to equipment not already available for conduct of the research.
- Must be disclosed in the proposal budget, justified in the budget justification.

PAPPG II.D.2.f.iv

Travel:

- Generally, funds for field work, attendance at meetings and conferences, and other travel associated with the proposed work, including subsistence.
- When anticipated, travel must be specified, itemized, and justified by destination and cost.



Budget Justification – Participant Support

| | | |
|------------------------|-----------|--|
| F. PARTICIPANT SUPPORT | | |
| 1. STIPENDS | \$ 15,000 | |
| 2. TRAVEL | 5,000 | |
| 3. SUBSISTENCE | 3,000 | |
| 4. OTHER | 2,000 | |

F. Participant Support (Total \$)

1. Stipends (\$)
2. Travel (\$)
3. Subsistence (\$)
4. Other (\$)

PAPPG II.D.2.f.v

- Direct costs for items such as stipends, subsistence, travel, and registration for participants or trainees in training projects or NSF-sponsored conferences.

Note: For conferences, speakers and trainers generally are not considered participants, unless the primary purpose of attendance is learning and receiving training.

- “F.4. Other” costs must be itemized and detailed in the justification.
- Participant support funds may not be used for incentive payments to research subjects.
- Indirect costs (F&A) are not usually allowed on participant support costs (unless the organization’s current, Federally approved indirect cost rate agreement allows).
- Participant support costs must be accounted for separately if an award is made.



Budget Justification – Other Direct Costs

| | | |
|--|--------|--|
| G. OTHER DIRECT COSTS | | |
| 1. MATERIALS AND SUPPLIES | | |
| 2. PUBLICATION/DOCUMENTATION/DISSEMINATION | | |
| 3. CONSULTANT SERVICES | | |
| 4. COMPUTER SERVICES | | |
| 5. SUBAWARDS | 37,082 | |
| 6. OTHER | 4,082 | |

G. Other Direct Costs (Total \$)

1. Materials and Supplies (\$)

2. Publication costs (\$)

3. Consultant Services (\$)

4. Computer Services (\$)

5. Subawards (\$)

6. Other (\$)

PAPPG II.D.2.f.vi

- Allowable, reasonable costs that are directly allocable to the activity associated with the project.
- Any direct costs not specified in lines G.1. through G.5. must be included in G.6.
- All costs under “G.6. Other” must be itemized and detailed in the justification; e.g., graduate tuition.



Budget Justification – Total Direct and Indirect Costs

| | | |
|---|--|--|
| H. TOTAL DIRECT COSTS (A THROUGH G) | | |
| I. INDIRECT COSTS (F&A) (SPECIFY RATE AND BASE) | | |
| TOTAL INDIRECT COSTS (F&A) | | |
| J. TOTAL DIRECT AND INDIRECT COSTS (H + I) | | |

H. Total Direct Costs (A through G)

I. Indirect Costs

PAPPG II.D.2.f.viii

Indirect costs (IDC)

- Applicable U.S. Federally negotiated indirect cost rate(s) must be used in computing indirect costs (F&A).
- Absent a negotiated rate agreement, the organization may choose to apply the *de minimis* rate of 15%.
- As per NSF's indirect cost rate policies, commonly excluded costs from the IDC base are:
 - Equipment and capital expenditures
 - Subaward costs >\$50,000
 - Participant Support costs



In the Event of an Award...

NSF grants come in two flavors:

Standard grants

- All funding is provided at the start of the project
 - All funds will expire at the same time (after 7 years)
- Require annual reporting
- Subject to Terms and Conditions.

Continuing grants

- Funds are awarded on an annual basis in continuing grant increments (CGIs)
 - Funds will expire on a rolling basis (7 years after specific CGI)
- Require annual reporting
 - CGIs cannot be awarded until report is submitted and approved
- Subject to Terms and Conditions.



Post-award Budget Considerations

The grantee has expanded authority to enact some revisions of budget and program plans without prior NSF approval:

- Transfer amounts budgeted for indirect costs to absorb increases in direct costs, or vice versa.
- Incur project costs up to 90 calendar days pre-award.
- Initiate a one-time extension of the period of performance by up to 12 months.
- Carry-forward of unobligated balances to subsequent budget periods.
- Transfer funds among direct cost categories.
- Note: rebudgeting authority is generally limited to 10% of the total approved budget.



Post-award Budget Considerations

However, for other revisions of budget and program plans prior written NSF approval is required:

- Change in the scope or the objective of the project.
- Change in a key person specified in the proposal or NSF award.
- Disengagement from the project for more than three months, or a 25% reduction in time devoted to the project by the PI.
- Subsequent no-cost extension or extension of more than 12 months.
- Transfer of funds budgeted for participant support costs to other categories of expenses.
- Subawarding, transferring or contracting out of any work under an NSF award.

For full list, see: Research Terms and Conditions, Appendix A - [Prior Approval Matrix](#)



New Solicitations and DCLs

- Molecular Foundations for Biotechnology – RNA Tools/Biotechnology; [NSF 24-607](#)
Due: 12/16/2024
- Future Manufacturing; [NSF 24-525](#)
Due 1/13/2025
- Accelerating Computing-Enabled Scientific Discovery (ACED); [NSF 24-541](#)
Due: 1/14/2025
- BioMADE; [NSF 25-012](#)
Due: 1/22/2025 (white paper); 4/18/24 (full proposal)
- Building Synthetic Microbial Communities; [NSF 25-501](#)
Due: 2/3/2025
- Advancing Research at the Intersection of Biology and AI/ML; [NSF 24-131](#)
- Use-Inspired Creativity Extension; [NSF 24-133](#)



Upcoming...

Office hours:

- Wednesday December 11th, 2024, 3-4 pm ET
Building Synthetic Microbial Communities ([NSF 25-501](#))
and Other New Funding Opportunities
- Wednesday January 8th, 2025, 2-3 pm ET
Mid-Career Advancement ([NSF 22-603](#))

Funding opportunities:

See [Funding Opportunities](#) page on MCB blog for relevant funding calls and deadlines.



Questions

