

**CENTER for BIOPHOTONICS
SCIENCE and TECHNOLOGY**

**Strategic Plan
Executive Summary**

From Retreat ... May 7-8, 2002



TABLE OF CONTENTS

MISSION	5
VISION	5
I. Science and Technology	5
➤ Development of New Biophotonics Technologies.....	5
➤ New discoveries in biology and medicine enabled by Biophotonics technologies.	5
➤ Computer simulations of biological processes.....	5
II. Education.....	7
Education Milestones	7
Metrics	8
III. Knowledge Transfer and Public Outreach	9
Milestone	9
Frequency	9
2002	9
2003	9
2004	9
2005	9
2006	9
Five year themes	10
Ten year themes.....	10
IV. Management	11
Appendix 1- Commitment to Diversity	14
Appendix 2- Code of Ethics Policy	15
Overview.....	15
Standard 1 - Fair Treatment of CBST Personnel and Participants.....	15
Standard 3 – CBST Publication Participation	16
Standard 4 – Financial Accounting and Cost Reporting.....	16
Standard 5 - Creation and Retention of Institutional Records	16
Standard 6 - Adherence to Antitrust Regulations	17
Standard 7 - Avoiding Conflicts of Interest	17
Standard 8 – Public and External Relations	17
Code of Ethics Policy Signature Page.....	18
POLICY ON INTEGRITY IN RESEARCH AND PUBLICATION.....	19
SIGNATURE PAGE - POLICY ON INTEGRITY IN RESEARCH AND PUBLICATION...	20

Why Raise Concerns? *A Discussion* 21

 CONTACT INFORMATION SHEET 22

 Chief Compliance Officer for CBST..... 22

Appendix 3- Center for Biophotonics Science and Technology..... 23

Appendix 4 – Center management, key personnel and succession planning 24

Succession planning:..... 25

Directors' Preamble

On May 7-8, 2002, the Center for Biophotonics (CBST) convened a retreat at UC Davis May 7-8, 2002 with our Center Management, representatives from each participating institutions, and several student representatives from undergraduate, graduate and postdoctoral levels of education. The retreat agenda is included as Appendix 1. It contains references to each of the items that will be required by the Cooperative Agreement (CA) between NSF and UC Davis. The purpose for this retreat was primarily to develop a strategic plan and its implementation metrics (CA sections B.2.a -b) as well as to discuss/develop ethics (CA section B.2.f), diversity (CA section B.2.c-d), intellectual property (CA section B.2.e) and management (CA section B.2.g) policies as well as to identify key personnel (CA section B.2.h) for the essential work of the Center including a management structure with succession and backup plans in the event of the absence or loss of key personnel. The draft of these policies as discussed and agreed upon are attached as Appendices 2 - 5.

The implementation of these policies is accomplished as follows:

- commitment to diversity – a written policy shall be read and signed by all participants;
- commitment to ethics - our policy on ethics is to be read and signed by all participants and they will also be given a computerized course annually to verify compliance; and,
- intellectual property policy is to be reviewed by all participating institutions prior to executing the cooperative agreement. In addition, every participant will undergo training in developing and protecting intellectual property from a qualified licensing and patenting expert.
- identifying key personnel (see Appendix 4) has already been accomplished except for the requirement of a 100% education officer. This person will be recruited within the time period established by the CA, i.e., within one year of the award.

MISSION

To improve the quality of life by dramatically expanding the use of photons in and the development of technology for the life sciences, bioengineering and health care. This will be accomplished through research, education, and knowledge transfer that is integrative, interdisciplinary, multi-institutional and highly diverse.

VISION

To be the preeminent enterprise that harvests the tremendous potential of biophotonics to improve the quality of life.

I. Science and Technology

The goal of the Science and Technology program is to establish a premier research and educational center for the development and use of novel biophotonics technologies. Our five-year goals include:

- establishing the physical laboratory facility and infrastructure
- establishing a world class biophotonics research and educational program producing breakthrough science
- establishing a roadmap for the developing field, and
- training diverse students for productive scientific careers.

The scientific objectives in the *first five years* are divided into three specific areas:

- **Development of New Biophotonics Technologies**
 - Advanced instrumentation and modalities capable of unprecedented resolutions, sensitivity, specificity
 - New optical labels and light sources for biomedical and single molecule applications
 - New optical sensors and assays for biological and medical applications
 - Novel photosensitive materials and applications of materials
 - New methods of x-ray imaging
- **New discoveries in biology and medicine enabled by Biophotonics technologies**
 - Exploit the emerging field of single molecule detection and imaging to perform fundamental explorations of basic biological interactions at the molecular level
 - Use Biophotonics techniques to interrogate cellular, subcellular and extracellular mechanisms, structures and regulatory processes
- **Computer simulations of biological processes**
 - Develop and apply computer programs to simulate photon interactions with biological materials, including energy transport, and secondary effects.

- Integrate the results of simulations to explain and guide experiment and to advance clinical treatments.
- Produce new educational tools using computer simulations of basic photon interaction mechanisms

Longer-range goals include:

- Establish a self-sustaining center supported by extensive extramural funding including NIH, DOE, DOD, and private enterprise
- Use a combination of novel biophotonics imaging modalities to monitor individual molecular interactions in vivo
- Develop tech transfer to the point where CBST-based products are reaching the marketplace
- Train a diverse group of students who will have assumed by this time prominent roles in academia and industry
- Establish a series of annual summer courses in biophotonics approaches, techniques and applications reaching even K-12, students and teachers
- Establish the premier biophotonics laboratories as a National user facility
- Completion of long term projects with potential of revolutionizing biosciences, such as demonstrating the first application of a novel x-ray source to obtain the structure of a single biomolecule, elucidating, at a fundamental level, the mechanisms leading to DNA damage by high energy radiation.

Milestones and metrics

Science and Technology	Year 1	Year 2	Year 3	Year 4	Year 5
Publications- Sci, Nat, PRL ,etc Other	2 20	3 25	4 30	4 35	4 40
Attended Conferences Workshops	5 5	8 8	10 10	10 10	10 10
Hosted Conferences Workshops	0 1	1 2	1 2	1 2	1 2
Students Undergrads MS Ph.D Graduated Ph.Ds	4 2 6 -	8 4 8 -	12 6 10 -	16 8 12 -	20 8 12 6
Infrastructure	UCD UCDMC Existing facilities	New facility	-	-	Establish World-class lab
Nuggets	2	3	4	4	4
New Grants	1	3	6	9	12
Licenses (under negotiation or issued)	0	1	2	3	4
Patents submitted	2	4	6	6	8
Invention Disclosures	8	16	24	24	32

II. Education

To increase the quality and quantity of science education experiences available to a diverse population of students, parents, and the public. We propose to accomplish this by developing and implementing an innovative program that establishes pathways to careers in the emerging field of biophotonics by providing a comprehensive educational package that links the ***learning years to the earning years***.

- To develop a set of high quality, developmentally appropriate, hands-on, inquiry based biophotonics curriculum and training materials using proven instructional methods for kindergarten through high school students.
- To attract and engage undergraduates, graduate students, postdoctoral scholars, and faculty in the biophotonics fields.
- To increase educational, research, and training opportunities for underrepresented groups in disciplines related to biophotonics.

Education Milestones

- Recruit and convene Education Advisory Committee in Year 1.
- During the five-year period four different K-12 level curricula will be developed, pilot tested, assessed, revised, and published.
- Educator Training begins in Year 2.

- An Annual Educator Summer Institute high school and community college instructor begins in Year 3.
- Recruitment of community college transfer students will begin immediately.
- Planning a community college biophotonics technician-training program will begin in Year 1 and will be piloted by Year 3.
- Biophotonics area of specialization within the undergraduate Optical Science and Engineering program at UC Davis will be established in Year 1 and a Biophotonics elective course will be piloted in Year 2.
- Establish a Biophotonics Ambassador's Program in Year 3.
- Establish a designated emphasis in Biophotonics at the Graduate level in Year 1 and pilot one new graduate course each of the following three years.
- Beginning in Year 1, recruit and select 5 undergraduate research interns and 5 graduate industry/partner interns each year.
- In Year 1 professors at the partnering Minority Universities begin research connected with CBST.
- Graduate and undergraduate students at minority universities are selected for research assistantships to work on CBST research at home campuses, in Year 1 and subsequent years.
- Graduate and undergraduate students from minority universities are selected for a variety of internships at CBST institutions and industrial partners in Year 1 and subsequent years.
- In Year 1, CBST Scientists will begin making exchange visits among participating institutions for consultations and seminars.
- Starting in Year 1, students at minority universities will be introduced to graduate programs at other CBST institutions.
- Minority university participants present research results in refereed journals and professional conferences.

Metrics

- In Year 2, the Biophotonics K-12 Program will have worked with 100 students and by Year 5 more than 5,000 students will have completed a Biophotonics courses as part of 4-H, MESA, and school/university partnerships.
- During the five year period over 100 undergraduates and 400 classroom teachers and community educators to deliver the Biophotonics curriculum.
- Program evaluation and assessment will be conducted on an annual basis including building on existing metrics using specially developed instruments, e.g. MESA and NSF/LSAMP.
- Establish and assess biophotonics courses for undergraduate and graduate students at participating institutions.
- Demonstrate and assess undergraduate involvement in seminars, retreats, and research experiences.
- Establish and assess Biophotonics Technician Training Program.
- For graduate students, establish and assess Designated Emphasis in Biophotonics, industry internships, TA training program, and 3 new biophotonics courses.
- In Year 1, 5 to 6 undergraduates from minority universities will be involved in CBST research on home campus, and by Year 5 at least 1 PhD received by URG participant with DE in biophotonics.

- In Year 1, Year 5 will select 3 graduate students as Research Assistants on their home campus, and, 10 URG students will be recruited into Biophotonics programs.

III. Knowledge Transfer and Public Outreach

Our mission is the promotion of knowledge transfer in the Center emphasizing the two-way exchange of science and technology information between Center participants and targeted audiences. Knowledge Transfer and Public Outreach also involve the formalization of the intellectual property (IP) agreement, recruitment of industrial partners, and the promotion of new technology developed in the center. It also involves the establishment and management of the Center's TeleScience Network, Center's Web Site/Portal, and segments of the PULSE UC Davis Medical School T.V. series.

There are a number of key goals for the Knowledge Transfer and Public Outreach function. They include:

- hosting an annual conference that targets industry needs including CBST scientist and student presentations and networking.
- writing a quarterly newsletter and develop and teach a quarterly IP Fundamentals Workshop.
- development and implementation of a TeleScience network that will support CBST programs covering education, science and technology, and Center outreach. The primary mechanism is the web portal. On it we will include the quarterly publication and Center-developed IP with hyperlinks to the partner institution managing each property.

Industry participation is an enabling characteristic of the CBST. Programs include an industry partners consortium, student co-ops, company interns, and a community college Biophotonics AA degree. To assess industry needs we will conduct an in-depth industry inquiry including questionnaires, roundtable discussions, and site visits. Once we have compiled the responses, we will detail and launch appropriate programs.

Since the center is expected to generate technology of appreciable commercial interest, the Center has developed an IP Agreement that has been agreed to by all CBST participating institutions based on the tenet that each Center institution will protect and market Center IP developed at that institution.

Milestone	Frequency	2002	2003	2004	2005	2006
CBST IP Agreement in place		4 th qtr				
CBST Website/Portal on-line coupled with press releases; to include IPC website and links to CBST participants		4 th qtr	Updated as appropriate	Same	Same	Same
Begin coordination of CBST publications in		4 th qtr – press	See specific	Same	Same	Same

refereed journals Work with NSF and other Peer Journals to establish opportunities		announce only	areas (S&T, Educ, etc.)			
Hold CBST IP Fundamentals Workshop	Semi- Annually	4 th qtr	2	2	2	2
Solicit and summarize results from questionnaire for industry	Annually	Annually				
CBST TeleScience Network on-line	On-Going	Design	Establish			
CBST Newsletter	Quarterly	4 th qtr	4	4	4	4
Develop and update Industry Membership Plan			1	1	1	1
Feature CBST on PULSE Media	Annual	3 rd qtr	1	2	2	2
CBST Industry Partners Annual Conference Launch regional IPC conferences, as appropriate, associated with CBST Institutions	Annual		1	1	1	1
Promote licensing of CBST technologies	Y2	On-Going				

Five year themes

- Establish strong industry affiliation of CBST outreach
- Enduring public outreach mechanism

Ten year themes

- Industry partnership that sustains perpetual CBST
- High public demand for CBST developments
- Private sector companies established based on CBST-developed technologies and/or founded by CBST members

IV. Management

GOALS:

- Build and maintain a cohesive management team that will enable the Center and all of its organizational elements to achieve their mission
- Create an organizational and operational structure that will enable CBST to be a well-managed, responsive, and accountable Center Provide facilities and resources that will best enable CBST to perform its mission.
- Remain agile in the pursuit of its mission and vision Promote an environment of teamwork, diversity, and synergy, with ethical standards among center participants in all organizational elements and institutions

Milestone Timeline:

Year 1:

- Appoint appropriate staff/management personnel
- Set-up accounts and financial reporting systems
- Set-up/educate all participants on reporting requirements
- Develop/finalize policies
- Establish meeting, symposia, and retreat schedules
- Convene advisory and review boards
- Diversity and ethics education (Yrs 1-4)
- Ensure programmatic review to assess meeting of milestones
- UCD provides 2000 sq ft interim administrative space in FSSB building
- UCD provides appropriate interim lab space
- UCD provides 3000 sq ft of renovated space in Hunt Hall (CBST to occupy by end of year 1)

Year 2:

- Convene annual retreat (Intra)
- Evaluate how well goals/milestones met
- Budget use review – next years allocation planning
- Board Reviews
- Prepare Annual report
- NSF annual site review
- UCD provides space in the new building Research IV (11K ASF¹, 14K GSF², 17K OTSF³)

Year 3:

- Prepare renewal to NSF
- Convene annual retreat (Intra)
- Evaluate how well goals/milestones met
- Budget use review – next years allocation planning

¹ Assignable Square Footage

² Gross Square Footage

³ Overall Total Square Footage

- Board Reviews
- Prepare Annual report
- NSF annual site review

Year 4-5:

- Convene annual retreat (Intra)
- Evaluate how well goals/milestones met
- Budget use review – next years allocation planning
- Board Reviews
- Prepare Annual report
- NSF annual site review

Pre-Award Retreat - Agenda
Center for Biophotonics Science & Technology (CBST)
Tuesday – Wednesday, May 7-8, 2002

Time	Agenda Item	Speaker/Facilitator
Tuesday, May 7, 2002		
7:00-8:00am	BREAKFAST	
8:00-8:15am	Welcome/Opening Remarks	Virginia Hinshaw , UCD Provost & Executive Vice Chancellor
8:15-8:30 am	Retreat Overview	Barry Klein , Vice Chancellor for Research Dennis Matthews, PhD , Director <u>Cooperative Agreement - Strategic & Implementation Plan B2</u>
8:30-9:30am	NSF Retreat Expectations CBST Mission/Vision Essential Issues to achieve Vision CBST Core Values	Denise Caldwell, PhD , NSF Program Manager Dennis Matthews, PhD , Director <u>Cooperative Agreement - Strategic & Implementation Plan B2</u> James Boggan, MD , Co-Director Leslie Sandberg, MBA , Chief Information Officer <u>Cooperative Agreement-Ethics & Diversity Ff</u> Dennis Matthews, PhD , Director
9:30-10:00am	Strategic Goals	
10:00-10:30am	BREAK	
10:30-11:30am	Science/Technology Program	Steve Lane, PhD , Assoc. Dir. Science & Technology Goals, Milestones, Metrics Ken Trauner, MD , Assoc. Dir. Science & Technology Rod Balhorn, PhD , Assoc. Dir. Science & Technology <u>Cooperative Agreement-Research B2a/Fb</u> Jim Shackelford, PhD , Assoc. Dir. Education & Outreach Development Rich Ponzio, PhD , Assoc. Dir. Education & Outreach Kennedy Reed, PhD , Assoc. Dir. Education & Outreach <u>Cooperative Agreement-Education B2b/Fc</u>
11:30-12:30pm	Education & HR	
12:30-1:30pm	LUNCH	
1:30-2:30pm	Industry Partnerships	John Marion, PhD , Assoc. Dir. Knowledge Transfer & Industry Knowledge Transfer Leslie Sandberg, MBA , Chief Information Officer <u>Public Outreach Cooperative Agreement-Knowledge Transfer B2/Fd,e</u>
2:30-3:00pm	BREAK	
3:00-4:00pm	Administration & Management	Susan Autry-Conwell, MBA , Chief Operating Officer <u>Cooperative Agreement-Management B2g/Fg</u>
4:00-5:00pm	Implementing Strategy	Dennis Matthews, PhD , Director <u>Cooperative Agreement-Strategic & Implementation Plan B2</u>
5:00-5:30pm	Summary & Close	Dennis Matthews, PhD , Director (Includes Writing Assignments)
6:30 - ??	Working Dinner @ EUII	
Wednesday, May 8, 2002		
7:00-8:00am	BREAKFAST	
8:00-10:00	Follow-on discussions	All Participants
10:00-10:30am	BREAK	
10:30-12:00	Discuss draft	All Participants
12:30-1:30pm	LUNCH	
1:00-5:00	Complete final draft written Strategic Plan	All Participants

Appendix 1- Commitment to Diversity

The Center for Biophotonics Science & Technology (CBST), is first and foremost a Center dedicated to completing its commitment in the areas of research, education, knowledge transfer and outreach to the public at large. To do so, our Center reflects and is part of a society comprising all races, creeds and social circumstances. The successful conduct of the Center's affairs requires that every partnering institution and individual participant of the Center acknowledge and practice the following basic principles:

- We affirm the inherent dignity in all of us, and we strive to maintain a climate of justice marked by respect for each other. We acknowledge that our society carries within it historical and deep-rooted misunderstandings and biases, and therefore we will endeavor to foster mutual understanding among the many parts of our whole.
- We affirm the right of freedom of expression within our community and also affirm our commitment to the highest standards of civility and decency towards all. We recognize the right of every individual to think and speak as dictated by personal belief, to express any idea, and to disagree with or counter another's point of view, limited only by Center regulations governing time, place and manner. We promote open expression of our individuality and our diversity within the bounds of courtesy, sensitivity and respect.
- We confront and reject all manifestations of discrimination, including those based on race, ethnicity, gender, age, disability, sexual orientation, religious or political beliefs, status within or outside the Center, or any of the other differences among people which have been excuses for misunderstanding, dissension or hatred. We recognize and cherish the richness contributed to our lives by our diversity. We take pride in our various achievements, and we celebrate our differences.
- We recognize that each of us has an obligation to the community of which we have chosen to be a part. We will strive to build a true community of spirit and purpose based on mutual respect and caring.
- We see no division or contradiction between excellence and diversity.

The Center for Biophotonics Science & Technology (CBST) will embrace excellence and diversity and will ask that all partner institutions and individual participants work to contribute to a fully diverse Center in bringing about a culture and environment where we encourage all cultures, especially those that are underrepresented and underserved in the fields of science and technology, and will work with dignity and respect to promote our Center's Principles of Community and celebrate the rich backgrounds and contributions of its many members.

Appendix 2- Code of Ethics Policy

Overview

The Center for Biophotonics Science & Technology (hereby referred to in this document as CBST) will conduct and manage the Center's programs and activities in a manner that is consistent with quality, integrity, effectiveness and efficiency. At all times, the Center's personnel and participants will act professionally, ethically and consistent not only with the Center's overall Code of Ethics Policy but consistent with their "home" institution or organizational policy and practices on ethics. This policy includes all CBST participants⁴ and participating institutions or organizations. All CBST participants will complete an annual Code of Ethics Policy training session.

Standard 1 - Fair Treatment of CBST Personnel and Participants

The CBST prohibits discrimination in any work related decision on the basis of race, color, national origin, religion, sex, physical or mental disability, ancestry, marital status, age, sexual orientation, citizenship, or status as a covered veteran. The CBST is committed to providing equal employment opportunity and a work environment where each employee is treated with fairness, dignity and respect.

- The CBST will also make reasonable accommodations to the known physical and mental limitations of otherwise qualified individuals with disabilities. If an individual requires accommodations or needs assistance, he or she should contact their Associate Director and appropriate action. At the discretion of the Associate Director, further discussions to support a fair and quick resolution will be brought to the Center director or his designate.
- The CBST does not tolerate harassment or discrimination by anyone based on the diverse characteristics or cultural backgrounds of those who work for the CBST pursuant to the CBST of California Non-discrimination and Affirmative Action Policy Regarding Academic and Staff Employment.
- Any form of workplace violence or sexual harassment is strictly prohibited. CBST personnel should refer to campus specific policies dealing with workplace violence or sexual harassment.
- For those CBST participants who observe or experience any form of discrimination, harassment or violence, the CBST provides a number of ways to report the incident.

Standard 2 - Personal and Confidential Information

⁴ Participant refers to an individual or institution who is affiliated with the CBST and may extend beyond those agreements or sub-agreements whereby individuals or CBST participating institutions receive funding and resources from the CBST.

All efforts will be made to protect personal and confidential information such as Intellectual Property development that may come from the CBST.

- CBST personnel shall not disclose such confidential information unless the appropriate agreements have been issued and signed off. Such confidential information should not
- be discussed with or disclosed to non-CBST personnel unless the Center director or his designate approves it.
- Some information may be sought under the California (or other state) Public Records Act or the Information Practices Act, or other statutes requiring the release of information. The CBST personnel should review any such information request with the Center Director or designated representative.
- It is the CBST's policy to correct any report preparation or submission errors and mistakes in a timely manner and, if necessary, clarify procedures and educate Center personnel to prevent or minimize recurrence of those errors.

Standard 3 – CBST Publication Participation

Please refer to the attached **POLICY ON INTEGRITY IN RESEARCH AND PUBLICATION**, of this Code of Ethics Policy.

Standard 4 – Financial Accounting and Cost Reporting

The CBST personnel involved in the financial accounting and cost reporting of Center activities will comply with all appropriate and applicable policies and procedures pertaining to the operational health of the Center. This compliance will include meeting the standards of excellence in reporting as imposed by the National Science Foundation, the NSF appointed Center Program Manager, and the Center Director. Appropriate documentation and tracking will be conducted and provided as requested, and as appropriate, to support and substantiate Center business.

The CBST will only use Center funds and resources to which the Center is entitled in support of the Center's goals and objectives.

The CBST personnel who are responsible for the preparation and submission of cost reports must ensure that all such reports submitted to all appropriate groups (such as the university, CBST partnering universities and other groups and the National Science Foundation) are properly prepared and documented according to agreed upon reporting format and principles.

Standard 5 - Creation and Retention of Institutional Records

The complete and accurate preparation and maintenance of all records (professional, electronic, paper, and institutional) by CBST participants are important for providing

quality information related to the work of the Center and in conducting the business of the CBST's research, education, and knowledge transfer enterprise.

- CBST personnel will not knowingly create records that contain any false, fraudulent, fictitious, deceptive, or misleading information.
- CBST personnel must not sign someone else's signature or initials on a record unless they have been authorized and clearly marked that they are signing on behalf of another (e.g. by initialing the signature).
- CBST records shall be maintained according to accepted standards and principles of the particular profession and applicable CBST policies and procedures.
- CBST participants will report concerns and problems to their Associate Director for discussion and to ensure that appropriate action is taken promptly.
- CBST participants can also report concerns and problems to the Center's Chief Compliance Officer. Contact information is shown on the last page of this document.

Standard 6 - Adherence to Antitrust Regulations

The CBST will comply with all applicable federal and state antitrust laws. CBST personnel should not for example: agree, or attempt to agree, with a CBST participant in artificially setting priorities or funding and resources associated with the CBST

Standard 7 - Avoiding Conflicts of Interest

All CBST personnel shall conduct the business of the Center in a manner that will avoid potential or actual conflicts of interest. CBST personnel shall not use their official positions to influence a CBST decision in which they know, or have reason to know, that they have a financial interest. Examples of such activities may include, but are not limited to, the following: giving to or receiving gifts, gratuities, loans, or other special treatment of value from third parties doing business with or wishing to do business with the CBST. Using the CBST's name to promote or sell non-CBST products or personal services; and contracting for goods or services with family members of CBST personnel directly involved in the purchasing decision.

Standard 8 – Public and External Relations

CBST personnel shall adhere to fair business practices and accurately and honestly represent themselves and the CBST's mission, goals and objectives. CBST personnel will be honest and truthful in discussing the work of the Center and program activities pertaining to the business practices of the CBST. CBST personnel should contact the Center's Chief Information Officer should contact be made by any newspaper, news journal, or related media professional for assistance in representing the work of the Center or discussing it program, activities and progress.

Code of Ethics Policy Signature Page

I have read and understand the **Code of Ethics Policy**, on this date _____, at _____ (physical location), at _____ (time, am/pm).

Signed by: _____

Title: _____

POLICY ON INTEGRITY IN RESEARCH AND PUBLICATION

Dear CBST Participant:

This Policy on Integrity in Scientific Research, which is effective immediately, applies to all participants who engage in research activities with the Center for Biophotonics Science & Technology (CBST).

This Policy affirms the CBST's commitment to integrity in scientific research and related publication efforts and calls for appropriate measures and guidelines for addressing allegations of misconduct in research. When CBST funds may support our scientific research activities, the CBST expects that the primary scientific researcher and colleagues address and manage all issues related to assignment of credit for publications, training of research apprentices, education on research ethics, requirements for record-keeping of experimental procedures, and data retention. This assignment of credit should include and be open to all CBST research students involved in the work of the CBST scientific research or education program. All CBST participants involved in research should be informed of this Policy and must read and sign this policy before engaging in scientific research at the Center.

It is our longstanding policy of Center for Biophotonics Science & Technology (CBST) to encourage and maintain the highest ethical standards in scientific research and related publication. This Policy affirms our commitment to integrity in scientific research.

Scientific integrity in research includes not just the avoidance of wrongdoing, but also the rigor, carefulness, and accountability that are hallmarks of good scholarship. All persons engaged in research at the Center are responsible for adhering to the highest standards of intellectual honesty and integrity in research. Anyone involved in scientific research has a responsibility to create an environment that encourages those high standards and integrity in research. Open publication and discussion, emphasis on quality of research, appropriate supervision, maintenance of accurate and detailed research procedures and results, and suitable assignment of credit and responsibility for research and publications are essential for fostering intellectual honesty and integrity in research.

Our policy sets forth expectations for high standards of ethical behavior for scientists employed by the CBST, all participants, collaborators and students involved in research. As such, misconduct means fabrication, falsification, plagiarism, or other practices that seriously deviate from those that are commonly accepted within the scholarly and scientific community for proposing, conducting, or reporting research. Misconduct does not include honest error or honest differences in interpretations or judgments of data. The CBST will continually take prompt and vigorous action to investigate and address any allegations of misconduct in scientific research, based on the following principles that each individual engaged in scientific research will:

- responsibility for self-regulation;
- protect to the greatest extent possible the due process rights of the accused, the interests of those making allegations, and the public interest;
- protect to the highest degree of confidentiality regarding the scientific research; and,
- will take appropriate precautions against real or apparent conflict of interest.

SIGNATURE PAGE - POLICY ON INTEGRITY IN RESEARCH AND PUBLICATION

I have read and understand the **POLICY ON INTEGRITY IN RESEARCH AND PUBLICATION**,

on this date _____, at _____(physical location), at

_____ (time, am/pm).

Signed by: _____

Title: _____

Why Raise Concerns? A Discussion ...

The opportunity for you to ask questions and raise concerns is a cornerstone of a successful corporate compliance program. We support open discussion of ethical and legal questions and concerns regarding compliance issues and will not tolerate retaliation against any individual who, in good faith, raises questions or reports suspected violations.

The rules governing the health-care industry can be complicated. For this reason, it is not always easy to make the right choices when it comes to compliance. If you have questions or concerns with any area of compliance - **please ask for help** (see below for the suggested approach). It is always better to ask before taking an action that might be improper. The Center supports such open discussion of ethical and legal questions. The Center has access to well-developed programs in these areas based on our lead institution's programs in this area and will not tolerate retaliation against any employee who, in good faith, raises questions or reports suspected violations.

In addition, as a university employee or student, you have a personal responsibility to report any activity that appears to violate the Code of Conduct or any applicable laws or regulations. In general, if you are aware of a compliance violation and fail to report it, you may be subject to corrective or disciplinary action.

If you have a question or concern regarding the appropriateness of a decision or action, you should take the following steps:

Communicate with an immediate supervisor or manager

You should immediately discuss the issue with your supervisor, manager, or team leader because these individuals should be the most familiar with the particular job requirements and business practices. The supervisor should provide a timely response or work to seek alternative solutions.

Talk with higher-level management

If you are not comfortable speaking with a direct supervisor or manager, you should contact a higher-level manager in the department or within the health system.

Contact the chief compliance officer

The chief compliance officer has been designated as the individual with lead responsibility for compliance issues. He reports directly to executive leadership within the health system. At any point in the process, you can bring a question or concern to the chief compliance officer or staff within the Compliance Office. This would include situations where you believe that you have not received an appropriate, timely or ethical response from a supervisor.

Obtain help from other university resources

You can contact university management within other departments or the Office of the President. There are a number of resources within the university that are available to help, including the corporate compliance office, human resources, internal audit, and campus counsel.

Call the Compliance Hotline

At any point, you can contact the Compliance Hotline to raise questions and clarify issues or to report suspected violations. Reports will be investigated or referred to appropriate personnel for resolution. If you contact the Compliance Hotline, you may choose to remain anonymous. The Compliance Hotline can be reached at the following telephone number: **1-877-Ethics-2 or 1-877-384-4272**

If you are not comfortable taking any of the above steps, contact the UC Davis Health System Compliance Office at (916) 734-8808 or check the compliance Web site at: <http://web.ucdmc.ucdavis.edu/compliance/>

The people working in these areas are available to respond to any kind of question you might have. If they don't know the answer, they will try to find someone who does. Don't be shy about asking - we are all here to help each other.

CONTACT INFORMATION SHEET

You should first feel comfortable in contacting your Associate Director within the Center. You are also welcome to contact the Chief Operating Officer, Susan Autry-Conwell or the Director, Dennis Matthews.

Susan Autry-Conwell, MBA
Chief Operating Officer
CBST
916-734-8120
saautry@ucdavis.edu

Dennis Matthews, PhD
Director
CBST
925-422-5360
dennis.matthews@udmc.ucdavis.edu

We also have a Chief Compliance Officer for the Center who also serves in this capacity for the University of California Davis Health System should wish to speak with someone who is "outside" the Center as a formal participant.

Roy Jaffe, MD, MBA
Chief Compliance Officer for CBST
& UC Davis Health System
rsjaffe@ucdavis.edu
916-734-8804
1-877-ETHICS-2

Appendix 3- Center for Biophotonics Science and Technology

INTELLECTUAL PROPERTY POLICY

The Center for BioPhotonics Science and Technology (CBST) is a National Science Foundation Center for Science and Technology that is centered at the University of California, Davis. Center Institutes are universities and government laboratories that participate in CBST.

CBST fosters a close partnership between the center institutions as well as other academic, government and industry researchers. Intellectual property is a likely product from many of the research areas within CBST, and the intensive interactions between Center Institutes enabled by CBST is likely to result in the generation of intellectual property solely and jointly owned by Center Institutes.

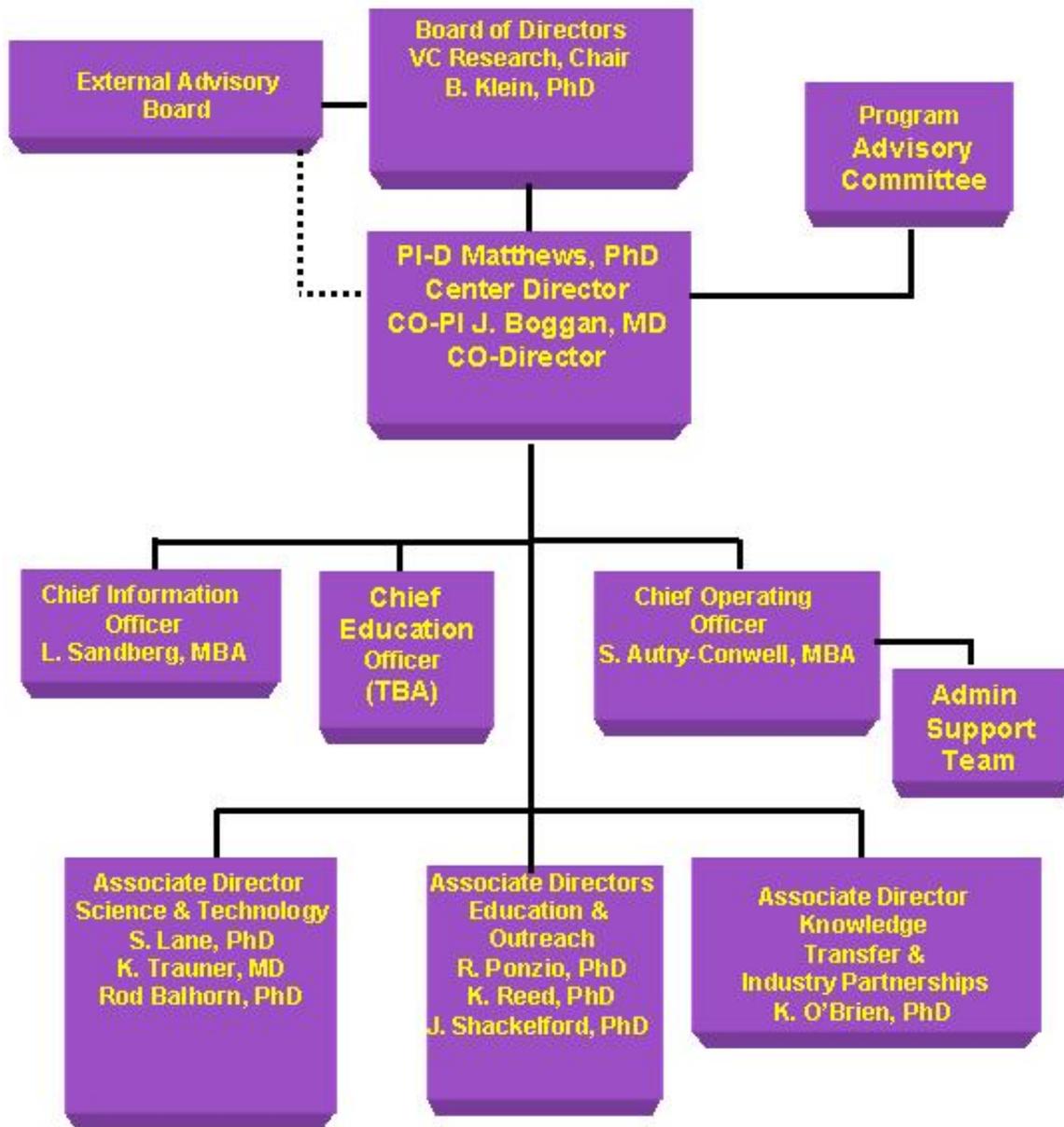
Funding for CBST activities comes from several sources, including the NSF, internal sources from within the universities, and contributions from other academic, industrial, and national laboratory sources. In addition, the various institutes may bring to the CBST significant expertise and facilities that existed prior to the formation of CBST.

This document outlines the policy for handling intellectual property generated by CBST activities. The basic tenet is that intellectual property policy; procedures and rights will reside with the CBST institute(s) responsible for developing them and not with the CBST itself. It is not the policy or responsibility of the CBST to resolve disputes between institutions participating in CBST.

Center Institutes may develop technologies that have commercial value. Situations may arise in which an industrial partner must protect its commercial interests through a nondisclosure agreement with one or more Center Institute(s). When intellectual property is developed that is potentially jointly owned by Center Institutes, the appropriate Center Institutes should negotiate typical inter-institutional agreements. Such agreements will be negotiated independently of CBST in the usual manner, and then honored by CBST. The role of CBST shall be to facilitate communications between Center Institutes and industry, as well as to share technical developments as fully as possible within the usual constraints that govern interaction between industry and academia.

Appendix 4 – Center management, key personnel and succession planning

Organization Chart



Succession planning:

- If Director leaves post, the Co-Director becomes interim Director until new person is recruited.
- If both Director and Co-Director leave posts, the Assoc Director of Science & Technology becomes acting Director until new person is recruited.
- If Chief Operating Officer leaves, the Budget Analyst becomes interim until new person is recruited.
- If Chief Information Officer leaves, the Assistant Director of PR at UC Davis will assume duties until new person is recruited.
- If Chief Education Officer leaves, the Associate Director for Education will assume duties until new person is recruited.