

(NEW GRADUATE INITIATIVES)**PROPOSAL PROCEDURES CHECKLIST**

Academic units should adhere to the following procedures when requesting new curricular initiatives (degrees, concentrations or certificates).

Obtain the required approval from the Office of the Provost to move the initiative forward for internal ASU governance reviews/approvals.

- Establishment of new curricular initiative requests; degrees, concentrations, or certificates
- Rename requests; existing degrees, concentrations or certificates
- Disestablishment requests; existing degrees, concentrations or certificates

Submit any new courses that will be required for the new curricular program to the Curriculum ChangeMaker online course approval system for review and approval.

- Additional information can be found at the Provost's Office Curriculum Development website: [Courses link](#)
- For questions regarding proposing new courses, send an email to: courses@asu.edu

Prepare the applicable proposal template and operational appendix for the proposed initiative.

- New degree, concentration and certificate templates (contain proposal template and operational appendix) can be found at the Provost's Office Curriculum Development website: [Academic Programs link](#)

Obtain letters or memos of support or collaboration. (if applicable)

- When resources (faculty or courses) from another academic unit will be utilized
- When other academic units may be impacted by the proposed program request

Obtain the internal reviews/approvals of the academic unit.

- Internal faculty governance review committee(s)
- Academic unit head (e.g. Department Chair or School Director)
- Academic unit Dean (will submit approved proposal to the curriculumplanning@asu.edu email account for further ASU internal governance reviews (as applicable, University Graduate Council, CAPC and Senate)

Additional Recommendations - All new graduate programs require specific processes and procedures to maintain a successful degree program. Below are items that Graduate Education strongly recommends that academic units establish after the program is approved for implementation.

Set-up a Graduate Faculty Roster for new PhD Programs – This roster will include the faculty eligible to mentor, co-chair or chair dissertations. For more information, please go to http://graduate.asu.edu/graduate_faculty_initiative.

Establish Satisfactory Academic Progress Policies, Processes and Guidelines – Check within the proposing academic unit and/or college to see if there are existing academic progress policies and processes in place. If none have been established, please go to http://graduate.asu.edu/faculty_staff/policies and scroll down to the **academic progress review and remediation processes** (for faculty and staff) section to locate the reference tool and samples for establishing these procedures.

Establish a Graduate Student Handbook for the New Degree Program – Students need to know the specific requirements and milestones they must meet throughout their degree program. A Graduate Student Handbook provided to students when they are admitted to the degree program and published on the website for the new degree gives students this information. Include in the handbook the unit/college satisfactory academic progress policies, current degree program requirements (outlined in the approved proposal) and provide a link to the Graduate Policies and Procedures website. Please go to http://graduate.asu.edu/faculty_staff/policies to access Graduate Policies and Procedures.

Check Box Directions – To place an "X" in the check box, place the cursor on the left-side of the box, right click to open the drop down menu, select **Properties**, under **Default value**, select **Checked** and then select **Ok**.



ARIZONA STATE UNIVERSITY
PROPOSAL TO ESTABLISH A NEW GRADUATE DEGREE

This template is to be used only by programs that have received specific written approval from the University Provost's Office to proceed with internal proposal development and review. A separate proposal must be submitted for each individual new degree program.

DEGREE PROGRAM

College/School(s) offering this degree: College of Health Solutions

Unit(s) within college/school responsible for program: Department of Biomedical Informatics

If this is for an official joint degree program, list all units and colleges/schools that will be involved in offering the degree program and providing the necessary resources: School of Life Sciences

Proposed Degree Name: Master of Science (MS) in Biomedical Diagnostics

Master's Degree Type: Master of Science

Proposed title of major: Biomedical Diagnostics

Is a program fee required? Yes No

Is the unit willing and able to implement the program if the fee is denied? Yes No

Requested effective term: Fall **and year:** 2014

(The first semester and year for which students may begin applying to the program)

PROPOSAL CONTACT INFORMATION

(Person to contact regarding this proposal)

Name: Keith Lindor

Title: Exec Vice Provost& Dean

Phone: 602-496-0789

email: Keith.Lindor@asu.edu

DEAN APPROVAL

This proposal has been approved by all necessary unit and College/School levels of review, and the College/School(s) has the resources to offer this degree program. I recommend implementation of the proposed degree program. (Note: An electronic signature, an email from the dean or dean's designee, or a PDF of the signed signature page is acceptable.)

College Dean name: Keith Lindor

College Dean Signature _____ **(see attached)** **Date:** _____

College Dean name: Keith Lindor
(if more than one college involved)

College Dean Signature _____ **Date:** _____

**ARIZONA STATE UNIVERSITY
PROPOSAL TO ESTABLISH A NEW GRADUATE DEGREE**

This proposal template should be completed in full and submitted to the University Provost's Office [mail to: curriculumplanning@asu.edu]. It must undergo all internal university review and approval steps including those at the unit, college, and university levels. A program **may not** be implemented until the Provost's Office notifies the academic unit that the program may be offered.

DEGREE PROGRAM INFORMATION

Master's Type: MS
(E.g. MS, MA, MAS, PSM, or other)

Proposed title of major: Biomedical Diagnostics

1. PURPOSE AND NATURE OF PROGRAM:

A. Brief program description –

The MS in Biomedical Diagnostics will be a 30 credit degree program taught by faculty at ASU and in collaboration with the Dublin City University and Ventana Medical Systems. The program will employ a blended learning approach adopting online and face-to-face elements. The culminating experience for this program is an Applied Project that will include industry partnerships, as well as experiences at both ASU and DCU.

Four core curricular areas will provide the foundation for this proposed biomedical diagnostics degree program: 1) Technology of Diagnostics, 2) Science of Diagnostics, 3) Business of Diagnostics, and 4) the Application of Diagnostics. The Technology of Diagnostics will explore instrument and assay development, biomedical engineering and diagnostic product development. The Science of Diagnostics will focus on underlying bioinformatics and biostatistical analysis, clinical trial design, regulatory systems and the technology behind imaging, pathology, molecular and sequencing technology. The Business of Diagnostics will encompass public and private health care finance and reimbursement, along with personalized health care, and include the companion diagnostics. The Application of Diagnostics will be taught through case studies on critical diagnostics-related issues including bioethics, clinical utility, intellectual property, smart systems, as well as modality integration and systems analysis.

B. Will concentrations be established under this degree program? Yes No
(Please provide additional concentration information in the operational appendix – number 5A.)

2. PROGRAM NEED - Explain why the university should offer this program (include data and discussion of the target audience and market).

The field of diagnostics is becoming an increasingly relevant force in all aspects of health care. As ASU has continued to encourage a global approach to education, this opportunity, to join with the Dublin City University and Ventana Medical Systems is aligned with the overall University's goals and objectives. In addition, this degree program will serve as the beginning of this formal educational partnership and will serve as a springboard for other programs moving forward.

The target audience will be recent graduates from related bachelors program as well as those already in the industry but who are looking to expand their knowledge base and credentials.

Diagnostics impact every facet of health care from pharmaceutical development, patient treatment, and medical technological development to health care finance and health care policy. There exists great need for formal educational opportunities within the field. This will enable the work force to keep up with and propel the field even further into the success of transforming health care into better health for our population and the globe.

3. **IMPACT ON OTHER PROGRAMS** - Attach any letters of collaboration/support from impacted programs. (see Checklist coversheet). Letters of support are attached from the Sandra Day O'Connor College of Law, the School of Biological and Health Systems Engineering, and the Biodesign Institute.
4. **PROJECTED ENROLLMENT** - How many new students do you anticipate enrolling in this program each year for the next five years? Please note, The Arizona Board of Regents (ABOR) requires nine masters and six doctoral degrees be awarded every three years. Thus, the projected enrollment numbers must account for this ABOR requirement.

5-YEAR PROJECTED ANNUAL ENROLLMENT					
Please utilize the following tabular format.	1st Year	2nd Year (Yr 1 continuing + new entering)	3rd Year (Yr 1 & 2 continuing + new entering)	4th Year (Yrs. 1, 2, 3 continuing + new entering)	5th Year (Yrs. 1, 2, 3, 4 continuing + new entering)
Number of Students Majoring (Headcount)	20	30	40	50	60
<i>Please note: annual projected enrollments reflect students utilizing an accelerated 12 month degree program format.</i>					

5. STUDENT LEARNING OUTCOMES AND ASSESMENT:

- A. List the knowledge, competencies, and skills** students should have attained by graduation from the proposed degree program. (You can find examples of program Learning Outcomes at <http://www.asu.edu/oue/assessment.html>).

On completion of the program the student will be able to:

1. Conduct systematic assessments of instrument and assay development and diagnostic product development, including biomedical engineering and quality principles.
2. Analyze and apply underlying bioinformatics and biostatistical principles, clinical trial design, regulatory systems and technology behind imaging, pathology, molecular and sequencing technology.
3. Comprehend and synthesize public and private health care finance and reimbursement and the impacts to the diagnostics industry, and understand the needs of personalized health care and the role of companion diagnostics.
4. Apply knowledge gained through case studies to the critique of diagnostics-related issues including bioethics, clinical utility, intellectual property, smart systems, modality integration and systems analysis.

- B. Describe the plans and methods to assess** whether students have achieved the knowledge, competencies and skills identified in the Learning Outcomes. (You can find examples of assessment methods at <http://www.asu.edu/oue/assessment.html>).

A comprehensive Academic Program Assessment will be developed once the program and its curriculum has been approved. The assessment plan will be based upon the mission and objectives of the program and will include a grid linking course contents and student experiences with learning outcomes. Student learning will be assessed through direct measures [scores on exams, projects, presentations, case studies; evaluation of student applied projects; student

achievements such as participation in research presentations/articles; student success as measured by the receipt of awards, grants, and scholarships; graduation rates] and indirect measures [student program evaluation survey data; job placement; post-graduate mentor/employer surveys]. The goal will be at least 90% of enrolled MS students will be assessed via direct measures and no fewer than 50% of MS program graduates assessed via indirect measures of student learning. Data will be reviewed annually to determine the degree to which students have met program expectations. Using these data, program faculty and leadership will evaluate the curriculum annually to make adjustments as needed.

Outcome 1: Conduct systematic assessments of instrument and assay development and diagnostic product development, including biomedical engineering and quality principles.

Measure 1: Students complete core course in "Introduction to Biomedical Informatics"

Performance Criteria 1: 80% of students complete course with a grade of 3.0 or better.

Outcome 2: Analyze and apply underlying bioinformatics and biostatistical principles, clinical trial design, regulatory systems and technology behind imaging, pathology, molecular and sequencing technology.

Measure 2: Students complete core course "Principles of Diagnostics Technology"

Performance Criteria 2: 80% of students complete course with a grade of 3.0 or better

Outcome 3: Comprehend and synthesize public and private health care finance and reimbursement and the impacts to the diagnostics industry

Measure 3: Students complete the core course in "Health Economics, Policy and Payment Methods"

Performance Criteria 3: 80% of students complete core course "Health Economics, Policy and Payment Methods" with a 3.0 or better.

Outcome 4: Apply knowledge gained through case studies to the critique of diagnostics-related issues including bioethics, clinical utility, and intellectual property.

Measure 4: Students complete the core course "Genetics and the Law"

Performance 4: 80% of students complete the course with a 3.0 or better.

- 6. ACCREDITATION OR LICENSING REQUIREMENTS (if applicable):** Provide the names of the external agencies for accreditation, professional licensing, etc. that guide your curriculum for this program, if any. Describe any requirements for accreditation or licensing.

N/A

7. FACULTY, STAFF, AND RESOURCE REQUIREMENTS:

A. Faculty

- i. **Current Faculty** - List the name, rank, highest degree, area of specialization/expertise and estimate of the level of involvement of all current faculty members who will teach in the program.

Faculty from both universities will deliver courses for this program.
ASU faculty:

Keith Lindor, Professor and Dean, College of Health Solutions
Brian Smith, Professor and Director, School of Life Sciences
George Runger, Professor and Chair, Department of Biomedical Informatics
David Kaufman, Associate Professor, Department of Biomedical Informatics
Mathew Scotch, Assistant Professor, Department of Biomedical Informatics
Valentin Dinu, Assistant Professor, Department of Biomedical Informatics
Eugene Schneller Professor, Department of Supply Chain Management
Jonathan Ketcham, Associate Professor, Department of Supply Chain Management
Gary Marchant, Regents Professor, College of Law
John Schneider, Faculty Associate, College of Law
David Feigal, Faculty Associate, College of Law

Sandra Shire, Clinical Associate Professor, College of Nursing and Health Care Innovation
Mara Aspinall, Adjunct Faculty, School of Life Sciences

- ii. **New Faculty** - Describe the new faculty hiring needed during the next three years to sustain the program. List the anticipated hiring schedule and financial sources for supporting the addition of these faculty members.

Initially, faculty will be drawn from existing ASU and DCU faculty. However, over the next three years, it is anticipated that three new faculty will need to be hired to ensure enrollment growth is sustainable.

- iii. **Administration of the program** - Explain how the program will be administered for the purposes of admissions, advising, course offerings, etc. Discuss the available staff support.

The Program will be administered by Dr. George Runger and a committee of faculty members including Dr. Keith Lindor, Dr. Julie Liss, and two additional faculty to be appointed.

Melanie Burm, Chief of Operations, College of Health Solutions will coordinate administrative support for the program.

- B. Resource requirements needed to launch and sustain the program:** Describe any new resources required for this program's success such as new staff, new facilities, new library resources, new technology resources, etc

Additional staff support will be required over the next year as this program develops fully, most likely in the form of a program manager, capstone coordinator and instructional designer. Online course development will be funded by a grant from Ventana Medical Systems. Additional resources will be needed from ASU as the program grows.

Due to the joint nature of the program with an international institution, a global classroom approach will likely be taken. This will also require classrooms that have necessary technology dedicated to the program.

8. COURSES:

- A. Course Prefix(es):** Provide the following information for the proposed graduate program.

- i. Will a new course prefix(es) be required for this degree program?
Yes X No Prefix **BMD** has been requested and approved.
- ii. If yes, complete the [Course Prefixes / Subjects Form](#) for each new prefix and submit it as part of this proposal submission.

- B. New Courses Required for Proposed Degree Program:** Provide course prefix, number, title, and credit hours and description for any new courses required for this degree program.

Only one new course will be developed, BMD Current Perspectives in Biomedical Diagnostics. Two courses from DCU and two courses from ASU are being converted to an on-line format so that they can be offered to both DCU and/or ASU students.

BMD 510 Current Perspectives in Biomedical Diagnostics (3 credit hours). This course provides an overview of the Biomedical Diagnostics Industry covering research, policy and legal aspects of the field. Visiting speakers from ASU, Biomedical Diagnostics companies, and regulatory agencies will provide an overview of their specialty based on personal experience and case studies. Students will work in teams to research and develop a case study report related to a Biomedical Diagnostics.

Omnibus course designations needed:

BMD 598

BMD 592 Research

BMD 593 Applied Project

APPENDIX OPERATIONAL INFORMATION FOR GRADUATE PROGRAMS

(This information is used to populate the [Graduate Programs Search](#)/catalog website.)

1. Provide a brief (catalog type - no more than 150 words) **program description.**

The MS in Biomedical Diagnostics will be a 30 credit degree program taught by faculty at ASU and in collaboration with the Dublin City University and Ventana Medical Systems. The program will employ a blended learning approach adopting online and face-to-face elements. The culminating experience for this program is an Applied Project that will include industry partnerships, as well as experiences at both ASU and DCU. The degree will cover four central areas related to the diagnostics field within the program: the technology of diagnostics, the science of diagnostics, the business of diagnostics and the application of diagnostics.

2. Campus(es) where program will be offered:

(Please note that Office of the Provost approval is needed for ASU Online campus options.)

ASU Online only (all courses online)

All other campus options (please select all that apply):

X Downtown Polytechnic
X Tempe West

(Please note: i-courses will also be offered for this degree program.)

Both on-campus **and** ASU Online (*) - (Check applicable campus from options listed.)

(*) Please note: Once students elect a campus option, students will not be able to move back and forth between the on-campus (in-person) or hybrid options and the ASU Online campus option.

3. Admission Requirements:

Degree: Minimum of a bachelor's or master's degree in what fields, or a closely related field from a regionally accredited College or University:

Biomedical Informatics, Biology, Life Sciences, Chemistry, Biochemistry, Engineering, Biomedical Engineering, Business, Computer Science, Supply Chain Management, Health Sciences, Medical Studies

Students will be required to pass an entry level exam proving they are proficient in basic sciences. They will also need to demonstrate prior interaction with mentors/professors.

GPA: Minimum of a 3.00 cumulative GPA (scale is 4.0=A) in the last 60 hours of a student's first bachelor's degree program. Minimum of 3.00 cumulative GPA (scale is 4.0 = A) in the applicable Master's degree. Modify or expand if applicable.

English Proficiency Requirement for International Applicants: The English proficiency requirements are the same as the Graduate Education requirement. (see Graduate Education requirement http://graduate.asu.edu/admissions/international/english_proficiency): X **Yes** **No**

If applicable, list any English proficiency requirements that are supplementary to the Graduate Education requirement.

Foreign Language Exam:

Foreign Language Examination(s) required? Yes X No

If yes, list all foreign languages required:

Required Admission Examinations: GRE GMAT Millers Analogies X None required
(Select all that apply.)

Letters of Recommendation: X Yes No

4. Application Review Terms (if applicable Session): Indicate all terms for which applications for Admissions are accepted and the corresponding application deadline dates, if any:

- X Fall (regular) Deadline (month/year): 6/2014
- Session B Deadline (month/year):

- Spring (regular) Deadline (month/year):
- Session B Deadline (month/year):

- Summer I Deadline (month/year):
- Summer II Deadline (month/year):

5. Curricular Requirements:

(Please expand tables as needed. Right click in white space of last cell. Select "Insert Rows Below")

5A. Will concentrations be established under this degree program? Yes X No

5B. Curricular Structure:

<u>Required Core Courses for the Degree</u>			<u>Credit Hours</u>
(Prefix & Number)	(Course Title)	(New Course?) Yes or No?	(Insert Section Sub-total) 15
BMI 501 or BMD 501 (*)	Introduction to Biomedical Informatics I	N	3
HCD 511 or BMD 511 (*)	Health Economics, Policy and Payment Methods	N	3
LAW 617 or BMD 617 (*)	Genetics and the Law	N	3
BMD 510 (**)	Current Perspectives in Biomedical Diagnostics	Y	3
BDI 502 (***)	Principles of Diagnostic Technology 1	N	3
Please note: (*) Courses will be cross-listed. (**) BMD course as indicated is slated for development (***) This course will be offered through our Transatlantic Higher Education Partner (Dublin City University – DCU) – As applicable, students will request to transfer in BDI 502 and BE 513 courses from DCU (please also see section 8.B. Courses)			
<u>Elective or Research Courses</u> (as deemed necessary by supervisory committee)			<u>Credit Hours</u>

(Prefix & Number)	(Course Title)	(New Course?) Yes or No?	(Insert Section Sub-total) 9
BMI 502 or BMD 502 (*)	Foundations of Biomedical Informatics Methods I	N	3
BMI 550 or BMD 550 (*)	Translational Bioinformatics	N	3
BME 598 or BMD 598 (*)	Biomedical Microdevices	N	3
BMI 507 or BMD 507 (*)	Introduction to Digital Image Processing and Analysis	N	3
BMI 515	Applied Biostatistics in Medicine and Informatics	N	3
BE 513 (***)	Principles of Diagnostic Technology 2	N	3
LAW 667 or BMD 667 (*)	FDA Regulation	N	3
LAW 791 or BMD 791 (*) <i>(Please note: this is a selected professional graduate degree program)</i>	Health Technologies, Innovations and the Law	N	3
<p>Please note: (*) Courses will be cross-listed. (***) This course will be offered through our Transatlantic Higher Education Partner (Dublin City University – DCU) – As applicable, students will request to transfer in BDI 502 and BE 513 courses from DCU (please also see section 8.B. Courses)</p>			
<p align="center"><u>Culminating Experience</u> <i>E.g. - Capstone course, applied project, <u>thesis (masters only – 6 credit hours)</u> or <u>dissertation (doctoral only – 12 credit hours)</u> as applicable</i></p>			<p align="center"><u>Credit Hours</u> (Insert Section Sub-total) 3</p>
<p align="center">BMD 593 Applied Project – course description</p> <p>Students will complete an experiential learning experience as part of their applied project on a topic of relevance to the diagnostics field and their career interests. A one faculty member committee will work with the student to select an appropriate topic, supervise progress, and evaluate the project. Applied projects will demonstrate students' ability to apply skills and knowledge learned in coursework, use research methods appropriate to the field, and report and present results.</p>			3
<p align="center"><u>Other Requirements</u> <i>E.g. - Internships, clinical requirements, field studies as applicable</i></p>			<p align="center"><u>Credit Hours</u> (Insert Section Sub-total) 3</p>
<p align="center">BMD 592 – Research (Please note: students must take three credit hours of research)</p>			3
<p><u>For doctoral programs</u> – when approved by the student's supervisory committee, will this program allow 30 credit hours from a previously awarded master's degree to be used for this program? If applicable, please indicate the 30 credit hour allowance that will be used for this degree program.</p>			
<p align="center">Total required credit hours</p>			30

- List all required core courses and total credit hours for the core (required courses other than internships, thesis, dissertation, capstone course, etc.).
- Omnibus numbered courses cannot be used as core courses.

- Permanent numbers must be requested by submitting a course proposal to Curriculum ChangeMaker for approval. Courses that are new, but do not yet have a new number can be designated with the prefix, level of the course and X's (e.g. ENG 5XX or ENG 6XX).

6. Comprehensive Exams:

Master's Comprehensive Exam (when applicable), please select the appropriate box.

(Written comprehensive exam is required)

- Oral comprehensive exam is required – in addition to written exam
- No oral comprehensive exam required - only written exam is required

7. Allow 400-level courses: Yes No (No more that 6-credit hours of 400-level coursework can be included on a graduate student plan of study.)

8. Committee: Required Number of Thesis or Dissertation Committee Members (must be at least 3 including chair or co-chairs): 1

9. Keywords (List all keywords that could be used to search for this program. Keywords should be specific to the proposed program.) Biomedical diagnostics, health statistics, statistics, informatics, sequencing technology, regulatory systems, analytics

10. Area(s) of Interest

A. Select one (1) primary Area of Interest from the list below that applies to this program.

- | | |
|---|---|
| <input type="checkbox"/> Architecture & Construction | <input type="checkbox"/> Interdisciplinary Studies |
| <input type="checkbox"/> Arts | <input type="checkbox"/> Law & Justice |
| <input type="checkbox"/> Business | <input type="checkbox"/> Mathematics |
| <input type="checkbox"/> Communication & Media | <input type="checkbox"/> Psychology |
| <input type="checkbox"/> Education & Teaching | <input type="checkbox"/> STEM |
| <input type="checkbox"/> Engineering & Technology | <input type="checkbox"/> Science |
| <input type="checkbox"/> Entrepreneurship | <input type="checkbox"/> Social and Behavioral Sciences |
| <input checked="" type="checkbox"/> Health and Wellness | <input type="checkbox"/> Sustainability |
| <input type="checkbox"/> Humanities | |

B. Select one additional Area of Interest that applies to this program from the list below.

- | | |
|--|---|
| <input type="checkbox"/> Architecture & Construction | <input type="checkbox"/> Interdisciplinary Studies |
| <input type="checkbox"/> Arts | <input type="checkbox"/> Law & Justice |
| <input type="checkbox"/> Business | <input type="checkbox"/> Mathematics |
| <input type="checkbox"/> Communication & Media | <input type="checkbox"/> Psychology |
| <input type="checkbox"/> Education & Teaching | <input type="checkbox"/> STEM |
| <input checked="" type="checkbox"/> Engineering & Technology | <input type="checkbox"/> Science |
| <input type="checkbox"/> Entrepreneurship | <input type="checkbox"/> Social and Behavioral Sciences |
| <input type="checkbox"/> Health and Wellness | <input type="checkbox"/> Sustainability |
| <input type="checkbox"/> Humanities | |

College of Health Solutions

Official Submission

From: Melanie Burm

Sent: Tuesday, October 29, 2013 2:25 PM

To: curriculumplanning@asu.edu

Cc: Alison Essary; Melissa Harris Thirsk; Andrew Webber; Amanda Morales-Calderon

Subject: MS in Biomedical Diagnostics

Importance: High

Good afternoon,

On behalf of Executive Vice Provost and Dean Keith Lindor, please find the proposal for the MS in Biomedical Diagnostics attached. Also attached is a special request for consideration of this proposal outside of the normal consideration deadlines. This proposal did go onto the CHS Academic Plan.

Please let us know if you have any questions, comments or concerns.

Thank you very much.

Melanie

Master of Science (MS) in Biomedical Diagnostics

Sandra Day O'Connor College of Law Support Statement

From: Douglas Sylvester (Dean)
Sent: Wednesday, January 22, 2014 11:08 PM
To: Keith Lindor
Cc: Amanda Morales-Calderon; Keith Lindor; Melanie Burm; George Runger; Denise Campbell; Eric Wertheimer
Subject: Re: MS in Biomedical Diagnostics - letter of support

The College of Law fully endorses this proposal and looks forward to collaboration.

Sent from my mobile

School of Biological and Health Systems Engineering Support Statement

From: Marco Santello
Sent: Wednesday, January 29, 2014 2:04 PM
To: George Runger
Cc: Denise Campbell; Melanie Burm; Keith Lindor; Julie Liss
Subject: RE: MS in Biomedical Diagnostics

Hi George,

I approve your proposal of the MS in Biomedical Diagnostics, as well as the proposal to cross-list our BME 598 as an elective course for the students.

Best,
Marco

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Marco Santello, PhD  
Director, School of Biological and Health Systems Engineering  
Harrington Endowed Chair and Professor  
501 East Tyler Mall, ECG Building, Suite 334C  
Ira A. Fulton Schools of Engineering, Arizona State University  
Tempe, AZ 85287-9709  
ph.: (480) 965-8279; fax: (480) 727-7624  
email: [marco.santello@asu.edu](mailto:marco.santello@asu.edu)  
webpage: <http://faculty.engineering.asu.edu/santello>

## The Biodesign Institute Support Statement

Dear George,

This is to express my support for your new M.S. degree program in Biomedical Diagnostics, administered and granted by BMI in the College of Health Solutions. The program enjoys support not only from me, but from several of our Center directors in the Biodesign Institute. As you know, Biodesign is advancing significant research programs in the diagnostics realm, addressing the complex diseases (cancer, diabetes) and a number of infectious diseases as well. We also have joint interests and anticipate projects with Ventana Medical Systems, whose scientists participate in the program. We have discussed the mutual benefits of such a program to Ventana and to Biodesign.

Our faculty will be happy to provide mentoring for appropriate research and applied projects performed as part of students' degree requirements. We anticipate (would insist) that any applied projects carried out within our Institute's Centers be rigorously-designed projects, or portions of research projects, that serve to advance both the student's learning experience, but also the goals of the mentor and the center in which the work is done. In most cases, this will mean that students will need to allot sufficient time to spend in the laboratory working at the bench or computer, and additional time in consultation with their mentor. The required commitment will be determined and agreed to on a case-by-case basis.

We look forward to working with you to make this forward-looking program a success for ASU, our collaboration with DCU, the Valley and the diagnostics industry.

Ray DuBois  
Executive Director of the Biodesign Institute  
Arizona State University