

**(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](mailto: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](mailto: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](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](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](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: School for the Science of Health Care Delivery

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: N/A

Proposed Degree Name: Translational Biomedical Sciences

Master's Degree Type: Master of Science (MS)

Proposed title of major: Translational Biomedical Sciences

Is a program fee required? Yes [X] No [ ]

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

Requested effective term: Fall and year: 2016
(The first semester and year for which students may begin applying to the program)

PROPOSAL CONTACT INFORMATION
(Person to contact regarding this proposal)

Name: Dawn K Coletta

Title: Assistant Professor

Phone: 480-301-6016

email: dawn.coletta@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: Julie Liss
College Dean Signature [Signature] Date: 7/20/15
College Dean name:
(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](mailto: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.

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**DEGREE PROGRAM INFORMATION**

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

**Proposed title of major:** Translational Biomedical Sciences

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**1. PURPOSE AND NATURE OF PROGRAM:**

**A. Brief program description –**

The Master of Science in Translational Biomedical Sciences can be completed in one year. It is a 30 credit full-time degree program. The program is administered through the College of Health Solutions/School for the Science of Health Care Delivery and the core coursework will be delivered at the Mayo Clinic in Arizona. The program will focus on metabolic disease and its translation from bench science to bedside clinical care and community interventions. The main outcome of the program is that students will be able to translate knowledge, mechanisms and techniques discovered by bench science into new approaches for diagnosis and treatment of metabolic disease within the clinic and community.

**B. Will concentrations be established under this degree program?**  Yes  No

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

Translational biomedical science is a rapidly growing field. Over the past decade, there has been an increase in research and research funding in the biomedical field that focuses on translating bench science to the bedside at the level of clinical care and community. This program will discuss basic science principles and how to incorporate these findings into treating the individual and implementing programs within the community. This program will focus on translational biomedical sciences in the context of metabolic disease. Metabolic diseases are rapidly and relentlessly increasing across the United States and worldwide demonstrating a continued need to train students on this topic. Because of the rise in prevalence of metabolic disease, it is important to teach students how to improve the health of individuals and across the community by turning discoveries made at the bench into bedside clinical care and community interventions.

The master's program will provide an excellent foundation for students who are interested in translational biomedical research and/or interested in metabolic disease. Specifically, our target audience will focus on individuals who would like to utilize their knowledge gained from this program to pursue a medical professional degree (Doctor of Medicine (MD), Doctor of Osteopathic Medicine (DO), Physician Assistant (PA), Registered Professional Nurse (RN), an advanced biomedical degree (Doctor of Philosophy (PhD)), or to gain employment related to this field. Data in the link (<http://medical-schools.startclass.com/>) demonstrates that the acceptance rates for Medical School for Universities in the State of Arizona is less than 3%. This suggests that there is a high number of pre-med students who will not be accepted into medical school with their first application. Our MS program in Translational Biomedical Sciences will capture these pre-med students amongst others as described above and provide further education related to the translational biomedical field.

This master's degree is highly attractive to both in-state and out-of-state students.

**3. IMPACT ON OTHER PROGRAMS -** Attach any letters of collaboration/support from impacted programs. (see Checklist coversheet)

Letters of support are provided from the Department of Biomedical Informatics (College of Health Solutions), School of Life Sciences (College of Liberal Arts and Sciences), School of Nutrition and Health Promotion and School of Social and Behavioral Sciences (New College of Interdisciplinary Arts and Sciences), Department of Psychology (College of Liberal Arts and Sciences) and the School of Biological and Health Systems Engineering (Ira A. Fulton Schools of Engineering).

There are other MS programs that may appear to be similar to our MS in Translational Biomedical Sciences as shown below:

- The MS in Biomedical Informatics teaches technological expertise in informatics, computer science, bioscience and mathematical statistics.
- The MS in Biomedical Diagnostics focuses on pharmaceutical and technology development, patient management, health care finance, and health care policy, with an understanding of the regulatory, business, legal, and technological facets of biomedical diagnostics.
- The MAS in Health Informatics offers professionals working in the field of health care an opportunity to earn a master level degree on the effective use of information technology, data science, and knowledge representation to impact health and health care.
- The MA in Applied Ethics, Biomedical and Health Ethics concentration integrates academic and clinical dimensions of moral issues in medical practice and biomedical research.
- The MS in Biomedical Engineering degree includes the following areas of study: biomaterials, biosensors, biomarkers and biomimetic materials; biomedical imaging; molecular, cellular and tissue engineering; neural and rehabilitation engineering and synthetic and systems biology.

*However, it is clear that our program is unique. The core classes for our MS program in Translational Biomedical Sciences focus on basic science knowledge on metabolic physiology, cellular, energetics and metabolism and metabolic disease pathophysiology. Moreover, our MS program places a strong emphasis on the ethical issues surrounding human metabolic disease research, and how to incorporate findings at the bench to the clinic and within the community.*

- 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.

<b>5-YEAR PROJECTED ANNUAL ENROLLMENT</b>					
<b>Please utilize the following tabular format.</b>	<b>1<sup>st</sup> Year</b>	<b>2<sup>nd</sup> Year</b> (Yr 1 continuing + new entering)	<b>3<sup>rd</sup> Year</b> (Yr 1 & 2 continuing + new entering)	<b>4<sup>th</sup> Year</b> (Yrs 1, 2, 3 continuing + new entering)	<b>5<sup>th</sup> Year</b> (Yrs 1, 2, 3, 4 continuing + new entering)
Number of Students Majoring (Headcount)	10	12	14	16	18

**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>).

A student graduating from the MS in Translational Biomedical Sciences will:

1. Demonstrate strong research knowledge in systems metabolic physiology.
2. Demonstrate strong research knowledge in cellular energetics and metabolism.

3. Demonstrate a strong understanding of metabolic disease pathophysiology in the areas of epidemiology, environmental and genetics. Students will demonstrate strong critical thinking skills related to laboratory methods and human subject clinical measurements in the context of metabolic disease with an emphasis on translating bench work to the bedside and the community.
4. Demonstrate a strong understanding of the ethics and policy issues related to translational biomedical sciences research. Students will demonstrate strong critical thinking skills related to institutional review board applications.
5. Demonstrate strong independent research performance and strong oral communication skills.

**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>)).

**Outcome 1:** Demonstrate strong research knowledge in systems metabolic physiology.

**Measure 1:** Quantitative problem solving related to issues in the current and classic literature; group workshops on problem solving and examinations will be used for the assessment of systems metabolic physiology.

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

**Outcome 2:** Demonstrate strong research knowledge in cellular energetics and metabolism.

**Measure 2:** Quantitative problem solving related to issues in the current and classic literature; group workshops on problem solving and examinations will be used for the assessment of cellular energetics and metabolism.

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

**Outcome 3:** Demonstrate a strong understanding of metabolic disease pathophysiology in the areas of epidemiology, environmental and genetics. Students will demonstrate strong critical thinking skills related to laboratory methods and human subject clinical measurements in the context of metabolic disease with an emphasis on translating bench work to the bedside and the community.

**Measure 3:** News assignments, case studies assignment, student oral presentations, research articles and examinations will be used for the assessment of metabolic disease pathophysiology in the areas of epidemiology, environmental and genetics.

**Performance Criteria 3:** 80% of students complete course with a grade of 3.0 or better.

**Outcome 4:** Demonstrate a strong understanding of the ethics and policy issues related to translational biomedical sciences research. Students will demonstrate strong critical thinking skills related to institutional review board applications.

**Measure 4:** Assessment on the ethics and policy issues related to translational biomedical sciences research will be obtained by the student's participation and discussions in the classroom on assigned readings from the current literature or textbooks. Moreover, students will be required to engage in discussion of these readings once per week, in an interactive manner, led by the student selected for that week. Students will be assigned a semester project that will include writing a protocol for a hypothetical clinical research study that would be submitted to the IRB. This will include a consent form and a request for access to biobank samples/patients.

**Performance Criteria 4:** 80% of students complete course with a grade of 3.0 or better.

**Outcome 5:** Demonstrate strong independent research performance and strong oral communication skills.

**Measure 5:** Independent research performance and understanding the importance of translational biomedical science will be assessed by the 20-page applied research project. Oral communication skills will be assessed as part of the end of year poster presentation on their chosen applied project.

**Performance Criteria 5:** 80% of students complete course with a grade of 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.
- Dawn K. Coletta, Assistant Professor, PhD: Director; 2 core courses (6 credit hours)  
Expertise: Epigenetics and genetics of insulin resistance
  - Wayne Willis, Associate Professor, PhD: Co-director; 2 core courses (6 credit hours)  
Expertise: Exercise physiologist who studies metabolism and fuel selection
  - Lawrence J. Mandarino, Professor, PhD: Faculty; 1 core course (3 credit hours).  
Expertise: Molecular pathogenesis of insulin resistance and type 2 diabetes mellitus

[The faculty listed above will be teaching the core courses. This may seem low for a new master's program, however we will expose the students to other faculty that will be teaching elective courses. The proposed HCD 564 Translational Biomedical Sciences Seminar and Data Club will include guest speakers from Arizona State University Center for Metabolic and Vascular Biology (CMVB) and guest speakers from the Mayo Clinic Arizona].

- Gabriel Shaibi, Associate Professor, PhD teaches one of the elective courses (3 credit hours), KIN 598: Special Topics: Pediatric Obesity. He will provide his expertise on metabolic disease risk in overweight and obese youth related to translational biomedical science.

- 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.

- No new hires are needed during the next three years to sustain the program. It is expected that existing faculty from the Center for Metabolic and Vascular Biology within the College of Health Solution or other colleges may participate.

- 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.

Dawn K Coletta is the director of the program and will administer the program along with Joy Muir (Administrative Assistant) and Wayne Willis (co-director). Joy Muir will be the primary point of contact for administering the core courses for the program at the Mayo Clinic Arizona campus. The admissions and advising will be done by the College of Health Solutions.

- 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

The advising and admissions for our Master's program will be done by the College of Health Solutions in Downtown Phoenix and the program/core classes will be delivered at the Mayo Clinic Arizona. For this program, we do not require any new resources.

## 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  No
- 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.

1. HCD 560 Systems Metabolic Physiology – 3 credit hours: Over the past several decades, peer-reviewed publications on obesity and insulin resistance have risen exponentially, to present rates of about 20 and 10 papers per day, respectively. Unfortunately, an essentially identical trajectory also describes the U.S. prevalence of obesity and type 2 diabetes. This course will explore this public health emergency in the context of whole body systems physiology. Using a quantitative approach, we will study the physiology of O<sub>2</sub> transport and utilization, locomotion economy, fuel selection, and potential mechanisms underlying the development of obesity and insulin resistance in the 21st century. Pulmonary and cardiovascular limitations to whole body aerobic scope will be evaluated with particular emphasis on how they influence, sometimes subtly, behaviors related to energy balance. In addition, focus will be directed on the role of tissues in determining the uptake and utilization of macronutrients during rest, exercise, and pathological states.
2. HCD 561 Cellular Energetics and Metabolism – 3 credit hours: This course will discuss the thermodynamics and kinetics of energetic processes at the cellular level. Using striated muscle (cardiac and skeletal myocytes), adipose, and liver as model tissues, we will study the ways cell structure (relative protein abundances and kinetics of membrane transporters, receptors, signaling pathways, and organelles) strongly influences the directions, rates, and efficiencies of metabolite flux. Quantitative development of bioenergetic and enzyme kinetic concepts will precede discussions of thermodynamic efficiency, non-oxidative and oxidative adenosine triphosphate (ATP)-producing pathways, and principles of metabolic control. Mitochondrial metabolism will be emphasized, including the chemiosmotic theory, proton leak, superoxide (free radical) production, interactions between the glycolytic and oxidative pathways, and the central role mitochondria play in health, disease, and mortality. The theoretical bases of methodology used to study cellular energy metabolism will be presented: Isolation of organelles, polarography, biophysical methods related to the study of mitochondrial bioenergetics, end-point and kinetic spectro/fluorometric assays of metabolite levels and evaluation of enzyme kinetic parameters, luciferase-based assays for ATP, cell isolation and incubation procedures, "Seahorse" methodology, Western blotting, and mass-spectrometry-based proteomics.
3. HCD 562 Emerging Bioethical Issues in Translational Biomedical Research – 3 credit hours: This course will discuss ethics and policy issues related to translational biomedical sciences research. The emphasis will be on research involving human subjects. Topics will include (1) genomics and biospecimen research, especially related to biobanks, including confidentiality issues, genetic testing, ownership of genetic information, community advisory boards, and return of results questions; (2) regulation of research and proposals including human research oversight by the Institutional Review Board (IRB); (3) relationship between medical research and medical treatment; and (4) communication with patients, within and between institutions, and with the general public.

4. HCD 563 The Metabolic Syndrome – 3 credit hours: This course will provide a comprehensive understanding of the metabolic syndrome from an environmental, genetic and molecular perspective. We will also discuss the treatment of this complex disease including lifestyle changes, pharmacological interventions and surgical procedures. This will be an evidenced-based course where research will guide class lectures and discussions.
5. HCD 564 Translational Biomedical Sciences Seminar and Data Club – 3 credit hours: This course will be a combined seminar and data club related to translational biomedical sciences. The seminar part of the course will feature ASU and external guest speakers who will present on key developments in basic, clinical, translational and biomedical research related to metabolic disease. The data club part of the course will allow for individual student presentations. Students will select and critique an original research article related to the translational biomedical science field, and will provide a review/synopsis/critique of the objectives, strengths and limitations of the work described in the original article they select.



**APPENDIX I  
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 Master of Science in Translational Biomedical Sciences can be completed in one year. The program is administered through the College of Health Solutions and the coursework is delivered at the Mayo Clinic in Arizona. The program will focus on metabolic disease and its translation from bench science to bedside clinical care and community interventions. Students will be able to translate knowledge, mechanisms and techniques discovered by bench science into new approaches for diagnosis and treatment of metabolic disease within the clinic and community. The master's program will provide an excellent foundation for students who would like to pursue a future medical professional degree (MD, DO, PA, RN), an advanced translational biomedical degree (PhD), or to gain employment related to this field.

Breakdown of requirements for the academic catalog:

Core (15)

- HCD 560 Systems Metabolic Physiology (3)
- HCD 561 Cellular Energetics and Metabolism (3)
- HCD 562 Emerging Bioethical Issues in Translational Biomedical Research (3)
- HCD 563 The Metabolic Syndrome (3)
- HCD 564 Translational Biomedical Sciences Seminar and Data Club (3)

Elective or Research (9)\*

- Statistics (3 or 4)
- Restricted Electives (6)\*\*

Culminating Experience (6)

- HCD 593 Applied Project (6)

\* Please note that only 9 hours of elective and research coursework is required to reach the total credit hours required for the program. If some students take one of the 4 credit hour statistics courses instead of a 3 credit hour course, they will have one credit hour in excess of the program.)

\*\*Students select an additional elective course from a restricted list.

**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):**

Downtown                       Polytechnic  
 Tempe                               West

**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:** Bachelor's degree (examples include: Biology; Biological Sciences; Biomedical Informatics; Exercise and Wellness; Health Education & Health Promotion; Health Sciences, Kinesiology, Medical Studies, Microbiology; Molecular Biosciences and Biotechnology, Nutrition, Public Health, Science of Health Care Delivery) from a regionally accredited College or University

**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.

**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](http://graduate.asu.edu/admissions/international/english_proficiency)):  Yes  No

**Foreign Language Exam:**

Foreign Language Examination(s) required?  Yes  No

If yes, list all foreign languages required: N/A

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

**Letters of Recommendation:**  Yes  No

**4. Application Review Terms (if applicable Session):** Indicate all terms for which applications for Admissions are accepted:

Fall (regular) (year): 2016  
 Session B (year):

Spring (regular) (year):  
 Session B (year):

Summer I (year):

Summer II (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  No

**5B. Curricular Structure:**

The core courses will be delivered at the Mayo Clinic Mayo Clinic – Samuel C. Johnson Research Center (13400 Shea Blvd, Scottsdale, Arizona, 85259). The elective courses will be delivered at the other Arizona State University campuses.

Required Core Courses for the Degree			Credit Hours
(Prefix & Number)	(Course Title)	(New Course?) Yes or No?	(Insert Section Sub-total)
			15
HCD 560	Systems Metabolic Physiology	Yes	3
HCD 561	Cellular Energetics and Metabolism	Yes	3

HCD 562	Emerging Bioethical Issues in Translational Biomedical Research	Yes	3
HCD 563	The Metabolic Syndrome	Yes	3
HCD 564	Translational Biomedical Sciences Seminar and Data Club	Yes	3
<b><u>Elective or Research Courses</u></b> <i>(as deemed necessary by supervisory committee)</i>			<b><u>Credit Hours</u></b>
<b>(Prefix &amp; Number)</b>	<b>(Course Title)</b>	<b>(New Course?) Yes or No?</b>	<b>(Insert Section Sub-total)  9</b>
<p>Students will select <b>ONE</b> statistics course from the list below for 3 or 4 hours:            (Please note that only 9 hours are required to reach the 30 credit hours required. If some students take one of the 4 credit hour courses instead of a 3 credit hour course, they will have one credit hour in excess of the program.)</p>			
EXW 501	Research Statistics	No	3
PSY 515	Quantitative Research Methodology and Statistics I	No	3
PSY 532	Analysis of Multivariate Data	No	3
PSY 536	Statistical Methods in Prevention Research	No	3
HCD 501	Health Behavior and Statistical Tools in Health Environments	No	4
BIO 614	Biometry	No	4
<p>Students will select <b>6 credit hours</b> additional elective course(s) from the following list</p>			
KIN 598	Special Topics: Pediatric Obesity	No	3
BIO 506	Clinical Gross Anatomy	No	6
BIO 543	Molecular Genetics	No	3
BIO 598	Special Topics: The RNA World: A Genomics Approach	No	3
BIO 598	Obesity: Physiology to pathophysiology to treatment	No	3
EXW 598	Special Topics: Obesity Perspectives and Prescription	No	3
EXW 536	Physiological Aspects of Physical Activity and Chronic Disease	No	3
EXW 542	Health Promotion	No	3
EXW 635	Physical Activity and Aging	No	3
EXW 535	Advanced Exercise Assessment and Prescription	No	3
EXW 538	Obesity, Exercise and Health	No	3

<b><u>Culminating Experience</u></b> <i>E.g. - Capstone course, applied project, <b>thesis (masters only – 6 credit hours)</b> or <b>dissertation (doctoral only – 12 credit hours)</b> as applicable</i>	<b><u>Credit Hours</u></b> (Insert Section Sub-total) <b>6</b>
HCD 593: Applied Project	6
<b><u>Other Requirements</u></b> <i>E.g. - Internships, clinical requirements, field studies as applicable</i>	<b><u>Credit Hours</u></b> (Insert Section Sub-total)
N/A	
<b>Total required credit hours</b>	<b>30</b>

- 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

- At the end of the second semester, students will produce a 20-page paper on their research/applied project in conjunction with a poster/discussion session, which will serve as their written comprehensive exam.

**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): 3

**9. Keywords** (List all keywords that could be used to search for this program. Keywords should be specific to the proposed program.)

Translational, biomedical, clinical, metabolic disease, bench science, clinical care, community

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

**B. Select one (1) secondary area of interest from the list below that applies to this program.**

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

**11. Contact and Support Information:**

Office Location (Building & Room):	Mayo Clinic Collaborative Research Building, Room Room 2-221
Campus Telephone Number:	480-301-6016
Program email address:	<a href="mailto:chs@asu.edu">chs@asu.edu</a>
Program website address:	<a href="https://chs.asu.edu/programs/graduate">https://chs.asu.edu/programs/graduate</a>
Program Director (Name and ASU ID):	Dawn K. Coletta - dcoletta
Program Support Staff (Name and ASU ID):	Wayne Willis - wwillis (Co-director); Joy Muir - jemuir (Administrative staff)
Admissions Contact (Name and ASU ID):	Dawn K Coletta - dcoletta (Director); Joy Muir - jemuir (Administrative staff)

**12. Application and iPOS Recommendations:** List the Faculty and Staff who will input admission/POS recommendations to Gportal **and** indicate their approval for Admissions and/or POS:

Name	ADMSN	POS
Joy Muir	X	X
Lawrence J. Mandarino	X	X
Wayne Willis	X	X
Dawn K. Coletta	X	X

## APPENDIX II

### Support Statements

#### College of Health Solutions – Official Submission

**From:** Kate Lehman  
**Sent:** Friday, August 28, 2015 2:16 PM  
**To:** Curriculum Planning  
**Subject:** FW: Attached Image

Attached is a proposal to establish a graduate certificate in the Science of Health Care Delivery (SHCD) concurrent with the submission of the request in the Academic Plan.

Thank you,

**Kate Lehman**  
Senior Director, Academic Initiatives



**ARIZONA STATE UNIVERSITY**

550 North 3rd Street, Ste. 511 | Phoenix, AZ 85004-3020  
Work: 602.496.0241 | Fax: 602.496.0544 | [Kate.Lehman@asu.edu](mailto:Kate.Lehman@asu.edu)  
<https://chs.asu.edu>

Department of Biomedical Informatics – Support Letter



To: Larry Mandarino, Director  
Center for Vascular and Molecular Biology

From: George Runger, Chair  
Department of Biomedical Informatics

A handwritten signature in black ink, appearing to read "G. Runger", written over the "From:" line.

Date: April 2, 2015

RE: Support for MS in Translational Biomedical Sciences

The Department of Biomedical Informatics strongly supports the proposed MS in Translational Biomedical Sciences. The focus of the proposed program differs from those offered by BMI and we see no negative impact from this new program offering.

## School of Life Sciences – Impact Statement

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### **RE: Impact statement request for MS program**

Juergen Gadau

Sent: Wednesday, April 01, 2015 9:51 AM

To: Dawn Coletta

Dear Dawn

This looks like a great program. I don't see any negative impact on existing programs in SOLS.

Ciao, Juergen

Jürgen Gadau

Professor

Associate Director of Graduate Studies SOLS

Barrett Honors Faculty

Arizona State University

[Jgadau@asu.edu](mailto:jgadau@asu.edu)

480-985-2349

Web-page: <http://gadau.lab.asu.edu/>

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**From:** Dawn Coletta

**Sent:** Wednesday, April 01, 2015 9:14 AM

**To:** Juergen Gadau

**Subject:** Impact statement request for MS program

Dear Juergen,

We are proposing a new MS program in the College of Health Solutions and require impact statements. An outline of our Masters program is attached with a description of the core courses. Would you be willing to take a look at the enclosed course outline and providing an impact statement. I hope that you agree that there would be no adverse impact on the School of Life Sciences by offering this MS program. I can send you the individual syllabi for the core courses for review, if you like.

We need to submit the impact statements prior to 10th April, so I hope you can review it before then. Let me know if you have any questions. I apologize for the short notice.

Best,

Dawn.



## School of Nutrition and Health Promotion – Impact Statement

April 7, 2015

To: Dawn Coletta and Larry Mandarino  
From: Barbara Ainsworth, Exercise Science and Health Promotion  
Re: MS in Translational Biomedical Sciences Impact Statement

The proposed MS degree program is a 1-year, 30-credit full-time degree program. The degree will focus on metabolic disease and its translation from bench science to bedside clinical care and community interventions. Comments below are provided for each area of core and elective courses that would impact our programs.

### Core Courses:

We have no opposition to the proposed courses. However, some faculty noted HCD 560 (Systems Metabolic Physiology), HCD 561 (Cellular Energetics and Metabolism), and HCD 563 (The Metabolic Syndrome) are similar to existing 500 level courses in Kinesiology (e.g., KIN 442/522 – Fuel Metabolism is similar to HSC 561). While the KIN courses have not been taught in a graduate program since the KIN MS program was disestablished; however are cross-listed for graduate students who wish to take the class, such as the KIN 442 & KIN 598 is a cross-listed undergraduate/graduate course in Pediatric Obesity.

### Elective Courses:

**EXW 643:** The PANW doctoral program has a two-class statistics sequence (EXW 640- ANOVA and EXW 643 – Correlation/Regression/Multivariate Statistics). EXW 643 is a doctoral level course and requires EXW 640 as a pre-requisite course. Thus, EXW 643 is not appropriate or feasible for MS students in the proposed program.

**EXW 501:** This is an appropriate course for the MS degree students. We regularly have 20 students/semester enrolled from the EXW and Nutrition MS programs. If there are many students in the proposed MS degree, an additional section of EXW 501 will need to be added.

## Department of Psychology - Impact Statement

### Letter of support/Impact statement from Department of Psychology

Dawn Coletta

Sent: Tuesday, January 12, 2016 7:55 AM

To: Dawn Coletta

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**From:** Leona Aiken [atlsa@asu.edu]

**Sent:** Tuesday, January 12, 2016 7:43 AM

**To:** Dawn Coletta; Laurie Chassin

**Subject:** Re: Impact statement

Dear Dawn,

Laurie Chassin forwarded to me this proposal for your new program, Master of Science in Translational Biomedical Sciences.

I am happy to respond to you about the two Psychology graduate classes you propose as electives for your new program.

(1) PSY532 Multivariate Analysis. This course assumes previous graduate statistics training, most importantly multiple regression analysis. It is taught in the fall semester of each year by me. I would be delighted to have students from your program in the class.

(2) PSY536 Prevention Science. This course also assumes background in multiple regression analysis. It is taught by Professor David MacKinnon. We would welcome students from your newly proposed program. It is taught most years, once a year.

In sum, this program will not have negative impact on the department of psychology. We would be happy to work with your students.

Cordially,

Leona Aiken

## School of Biological and Health Systems Engineering - Impact Statement

**From:** Marco Santello  
**Sent:** Thursday, January 21, 2016 3:32 PM  
**To:** Dawn Coletta  
**Cc:** Christopher Buneo  
**Subject:** RE: Impact statement

Dear Dawn,

My graduate program chair, Dr. Chris Buneo, and I concur with your assessment of your new MS program that it won't have an adverse impact on the School of Biological and Health Systems Engineering.

Thank you.

Best,  
Marco

**From:** Dawn Coletta  
**Sent:** Wednesday, January 20, 2016 8:38 AM  
**To:** Marco Santello  
**Subject:** RE: Impact statement

Marco,

Please find attached the core courses for our MS program. Let me know if you need additional information.

Best,

Dawn.

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**From:** Marco Santello  
**Sent:** Tuesday, January 19, 2016 7:27 PM  
**To:** Dawn Coletta  
**Subject:** RE: Impact statement

Dear Dawn,

I don't foresee adverse impact on SBHSE, however I would appreciate it if you could share the syllabi for the core courses for us (myself and the chair of our graduate program) to review.

Thank you,  
Marco

**From:** Dawn Coletta  
**Sent:** Tuesday, January 19, 2016 10:01 AM  
**To:** Marco Santello  
**Subject:** Impact statement

Dear Marco,

I am following up on Jeremy Helm's email that was forwarded to you last week (see below). I am a faculty member in the College of Health Solutions and my colleagues and I are proposing a new MS program (Master of Science in Translational Biomedical Sciences). An outline of our MS program is attached with a description of the core courses along with elective courses. Would you be willing to take a look at the enclosed course outline and providing an impact statement? I hope that you agree that there would be no adverse impact on the School of Biological and Health Systems Engineering, Ira A. Fulton Schools of Engineering by offering this MS program. I can send you the individual syllabi for the core courses for review, if you like.

If you agree to provide an impact statement, then I would need the letter before the University Graduate Council meeting on February 2nd. I apologize for the short notice and hope you can help with my request. Let me know if you have any questions.

Best,

Dawn Coletta, Ph.D.

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**From:** Jeremy Helm  
**Sent:** Thursday, January 14, 2016 3:09 PM  
**To:** Dawn Coletta; Marco Santello  
**Cc:** James Collofello  
**Subject:** FW: Impact statement

Hi Dawn,

I am copying Dr. Santello on this note to request an impact statement from the School of Biological and Health Systems Engineering.

**Jeremy Helm**  
Director, Academic Administration & Student Success  
Ira A. Fulton Schools of Engineering  
Arizona State University  
Tempe, AZ 85287-8109  
(480) 965-8931 voice  
(480) 965-8095 fax

**From:** Dawn Coletta  
**Sent:** Thursday, January 14, 2016 3:04 PM  
**To:** Jeremy Helm <[JEREMY.HELM@asu.edu](mailto:JEREMY.HELM@asu.edu)>  
**Subject:** Impact statement

Dear Jeremy,

We are proposing a new MS program (Masters of Science in Translational Biomedical Sciences) in the College of Health Solutions and require impact statements. An outline of our Masters program is attached with a description of the core courses along with elective courses. Would you be willing to take a look at the enclosed course outline and providing an impact statement? I hope that you agree that there would be no adverse impact on the School of Biological and Health Systems Engineering, Ira A. Fulton Schools of Engineering by offering this MS program. I can send you the individual syllabi for the core courses for review, if you like.

Hope you can help. Let me know if you have any questions.

Best,

Dawn Coletta, Ph.D.

## School of Social and Behavioral Sciences - Impact Statement

njs@asu.edu

Sent: Monday, January 11, 2016 11:42 AM

To: Dawn Coletta

Cc: Jeffrey Kassing; Kristin Mickelson

Hi Dawn,

I have conferred with Jeff Kassing (our school director) and Kristin Mickelson (director of the MS Program in Psychology) about the inclusion of PSY 515 into the curriculum for your Translational Biomedical Sciences degree program.

On behalf of the School of Social and Behavioral Sciences, I can say that we are happy to have our course included, and we fully support your exciting new program.

Please let me know if I can be of further assistance.

Nick Schweitzer

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**Nick Schweitzer**

Associate Professor & Associate Director

School of Social and Behavioral Sciences

Arizona State University