UNIVERSITY OF SASKATCHEWAN
College of Graduate
and Postdoctoral Studies
GRAD.USASK.CA

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M E M O R A N D U M

To: Academic Programs Committee of University Council

Copy: Walter Siqueira, Associate Dean of Graduate Studies and Internationalization, College of Dentistry

From: Office of the Associate Dean, CGPS

Date: January 22, 2020

Re: New Doctor of Philosophy (PhD) in Precision Oral and Systemic Health

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The College of Graduate and Postdoctoral Studies is recommending approval of a new PhD program in Precision Oral and Systemic Health delivered through the College of Dentistry. The proposed PhD program would be the first graduate program offering in the College of Dentistry, and it aligns with goals articulated in their strategic plan as well as the strategic plan of CGPS.

The proposed program includes standard CGPS admission requirements along with an option for direct-entry admission following completion of an undergraduate degree. Applicants with an earned master's degree will require a minimum 70% admission average, while applicants without a master's degree will require a minimum 80% admission average. The program will seek to admit seven students annually with equal gender representation. One of the seven admissions will be reserved for a qualified indigenous applicant, where self-identification is included in the application. The program will require a minimum of 10 credit units of coursework for students with an earned master's degree, or a minimum of 19 credit units of coursework for students entering the program without a master's degree. These requirements align with CGPS policy. The program will also include requirements for qualifying exams, comprehensive exams, and completion of a thesis with an oral defence.

It is anticipated that the new doctoral students will produce publications during their studies, which will increase research productivity and reputation for the College of Dentistry.

After months of review and consultation, the proposal received final approval from the Graduate Programs Committee on January 17, 2020, and the Executive Committee of CGPS on January 20, 2020. The CGPS is seeking approval to have the program implemented for May 1, 2020.

Attached please find the proposal with supporting documents.

If you have any questions, please contact Kelly Clement at kelly.clement@usask.ca or 306-966-2229

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M E M O R A N D U M

To: Academic Programs Committee (APC)

Copy: Dr. Walter Siqueira, College of Dentistry

From: **Trever Crowe, Chair of CGPS Executive Committee**

Date: January 20, 2020

Re: New Doctor of Philosophy in Precision Oral and Systemic Health

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Discussions between proponents in Dentistry and staff in CGPS began in April 2019. The Graduate Programs Committee discussed the proposal on May 14, 2019; September 16, 2019; October 28, 2019; December 2, 2019; and December 11, 2019.

The CGPS Executive Committee discussed the proposal on December 16, 2019 requiring revisions to the proposal as presented, and discussed revisions on January 20, 2020.

The Executive recommends approval of the PhD program in Precision Oral and Systemic Health *(Heavin/Kalra – all in favour CARRIED)*

To provide context of the discussion the following points were discussed, and decision was made as noted above:

A member asked re: the rational from going 3 hrs to 2 hrs. It was understood that the GPC was not given a rational other than for maybe scheduling. Experts in the area recommended this change and that similar courses have always been taught that way. The syllabi indicates a module approach, which does make sense than previous proposals.

Members suggested that we allow our colleagues and our program proponents to proceed. Future Graduate Program Reviews (GPR) will be looking and evaluated for rigor. A GPR would likely happen in about 5 years after having a full cohort of graduates.

Members noted that this is a brand new program, and has been under development for some time. There has been a lot of coaching to get this proposal submitted and it has improved a great deal from the first iteration.

Members suggested that it is part of the learning process to have this type of program to make adjustments as offerings are experienced. This is a progressive program for USask and the first of its kind so we would expect that the adjustments would be made.

Members suggested that it is time to move this forward knowing GPC has helped them significantly to develop the proposal before us today, we have done our due diligence.

If you have any questions, please contact Dr. Trever Crowe, chair of the CGPS Executive Committee at trever.crowe@usask.ca or 306-966-5759.

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M E M O R A N D U M

To: Executive Committee of CGPS

Copy: Dr. Walter Siqueira, College of Dentistry

From: Graduate Programs Committee

Date: December 12, 2019

Re: new Doctor of Philosophy in Precision Oral and Systemic Health

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The Graduate Programs Committee is recommending approval of a new Doctor of Philosophy in Precision Oral and Systemic Health. The new program proposed is to be the first graduate program offering in the College of Dentistry.

The program is proposed to have options for standard admission requiring an earned master's degree as well as direct-entry admission following an undergraduate degree. Students would be required to complete a minimum of 10 credit units of coursework if they enter the program with an earned master's degree, or a minimum of 19 credit units of coursework if they enter the program following an undergraduate degree.

Six new course proposals are included in the proposal, and the proponents have consulted with other units to ensure that students would have access to existing applicable courses to complement their research programs.

Discussions between proponents in Dentistry and staff in CGPS began in April 2019. The Graduate Programs Committee discussed the proposal on May 14, 2019; September 16, 2019; October 28, 2019; December 2, 2019; and December 11, 2019. At the December 11, 2019, meeting the committee passed the following motion:

To recommend approval of the PhD program in Precision Oral and Systemic Health subject to the conditions noted. Morrison/Labrecque 1 abstention CARRIED

The conditions were to remove 3 credit units from the proposed DENT 804 course, and remove reference to paid teaching assistant work in the syllabus. Those changes were made.

Attached please find the full program proposal and supporting documentation.

If you have any questions, please contact Kelly Clement at kelly.clement@usask.ca or 306-966-2229

UNIVERSITY OF SASKATCHEWAN	**Proposal for Academic or Curricular Change**

PROPOSAL IDENTIFICATION

Title of proposal: **PhD in Precision Oral and Systemic Health**

Degree(s): **PhD**

Field(s) of Specialization: **Precision Oral and Systemic Health**

Level(s) of Concentration: n/a

Option(s): **N/A**

Degree College: **CGPS**

Contact person(s) (name, telephone, fax, e-mail):
Martha Smith, Acting Associate Dean, CGPS;
306-966-2229; Kelly.clement@usask.ca

Proposed date of implementation: **May 2020**

Proposal Document

Please provide information which covers the following sub topics. The length and detail should reflect the scale or importance of the program or revision. Documents prepared for your college may be used. Please expand this document as needed to embrace all your information.

1. Academic justification:

a. *Describe why the program would be a useful addition to the university, from an academic programming perspective.*

University Plan 2025 sets out the direction for the university until the year 2025 with bold aspirations and ambition to be 'the university the world needs'. USask is also a member of the prestigious *U15 Group of Canadian Research Universities*, which includes some of Canada's most research-intensive institutions. In order to achieve our university's goals and ensure

continued success and pre-eminence on the national and international stage, it is vital that each college/school/unit contributes in meaningful and novel ways to the success of the University. Historically, the College of Dentistry has focused on training dentists through the DMD program, with only very limited emphasis on research performance or productivity and no offerings for graduate-level programs. In the current academic environment, this historical state is no longer acceptable and will over time have an increasingly negative impact on the reputation of the College of Dentistry and the University. The college recognizes the deficiencies in the historical status quo, and is moving forward on a new course with a sense of urgency. **The college is in the midst of a multi-year transformation that places emphasis on research performance and productivity and on expanding student training at all levels,** among other priorities. A new PhD program is one of these priorities.

This PhD program follows the lead of other top-ranked dental schools in North America that have robust PhD programs, in areas ranging from Craniofacial Sciences to Oral Biology to Dental Specialities. Our program will train highly-qualified students whose presence and activities will enrich the research and training environment in the college. Immediate effects include **increasing the research productivity of faculty members** providing PhD supervision, through increased number of publications and ability to now apply for external student stipend awards and travel funding. Longer-term effects include an **increased number of grant applications, manuscript publications, increased success in grant competitions** due to **stronger track records (CV)** from supervising PhD-level students, and other spin-offs such as **increasing patents and research contracts**.

In terms of research culture and environment, Dentistry faculty members currently face challenges in supervising their PhD students because there is no program available in their home college; they work around this by affiliating themselves with other colleges/schools. Having a PhD program in Dentistry will immediately create a more research-intensive environment in the College. This enriched environment, which develops from **mentorship and collaboration amongst students within and beyond their research teams,** will go a long way toward changing the research culture in the college. Transitioning to a more research-intensive culture will also be a significant **asset for the college and university in the recruitment and retention of talented emerging or well-established faculty members to the college**, since most research-intensive faculty hires will want to supervise PhD level students. Graduate programs bolster a university's reputation in a wealth of areas, which consequently strengthens the reputation of the college and the university.

b. Giving consideration to strategic objectives, specify how the new program fits the university signature areas and/or integrated plan areas, and/or the college/school, and/or department plans.

The PhD in Precision Oral and Systems Health aligns with **2018-2025 strategic plans for the University, the University's research enterprise, and the college**. At the highest planning level, the PhD program supports the commitments in ***University Plan 2025*** by encouraging research, discovery and funding success; by strengthening the college's reputation as experts who are eager to collaborate; by providing a structure within which the college can train graduate students; and by strengthening communities through opportunities for research with vulnerable and priority populations. In specific terms of contributions to Indigenization, we will reserve spots to increase participation in the program from Indigenous students, and we have aspirations to pursue community-based research with Indigenous communities that is driven by the dental

public health needs in their communities. In reference to supporting the U**niversity's research strategy *(Research Plan 2018-2025)*,** the new PhD program will specifically increase capacity for research and cultivate emerging strengths in a college that was not previously known for research, and it will invigorate our health cluster by expanding graduate level training to include the important component of oral health. The specializations of the PhD program - **Precision Oral and Systemic Health** – also align well with U**niversity's signature areas** of *One Health: Solutions at the Animal-Human-Environment Interface* and *Indigenous Peoples: Engagement and Scholarship.* The specializations complement the current research strengths in the college, and they support future planned growth in faculty recruitments for the College; the specializations will allow for an extensive scope of research topics within the PhD program.

College-wise, in creating ***College of Dentistry Plan 2025***, our strategic planning process included a SWOT analysis (Strengths, Weaknesses, Opportunities, Threats), which identified "low research output" as a significant weakness. The proposed PhD program will be a key component for addressing this deficiency by organically increasing the number and quality of publications and grant applications, with subsequent growth in reputation and success. The college's plan includes five strategic priorities and this new PhD program will make strides in achieving four of these priorities: becoming a leader in **inclusive community care,** focused on priority populations; **expanding educational programming** to include graduate-level training; **expanding research capacity and output**; and **uplifting Indigenous populations** through graduate training and research focus.

c. *Is there a particular student demographic this program is targeted towards and, if so, what is that target? (e.g., Aboriginal, mature, international, returning)*

The program will be targeted to several groups – **Indigenous, visible minorities** and **female** students, and also to **international students**. A variety of promotional materials/campaigns for the POSH program will be created to garner interest from students in these groups. The opportunity to pursue either lab and non-lab streams in the program will also be important to ensuring that potential students can see a fit with the program for their potential research interests. Given that the program is **not** restricted to DMD/DDS graduates, and there is presently a strong focus on the more broad concept of 'body to mouth' connection, there is opportunity to attract students from a wide variety of disciplines to the program.

A diversified student cohort that encourages inclusivity is critical to a strong PhD program, where a variety of viewpoints, past experiences, and previous training shape the interactions and outputs of the group. Visible minorities do tend to be adequately represented in undergraduate cohorts in Dentistry, but we will continually monitor uptake from visible minorities in this graduate level program and adjust strategies as necessary. Indigenous students continue to be underrepresented in Dentistry (and in related disciplines) both at USask and across Canada while female students are significant underrepresented at graduate level across Canada thus it is important to strategically focus on these groups. Increasing representation of **Indigenous students** in our college is embodied in the college's strategic priority #5 as we look to have a student base that better represents our province's population base, and to better address oral health care needs and preferences of Indigenous people. For encouraging Indigenous enrollment, our strategy includes reserving one (of the total 7) PhD position per year for an Indigenous student. If no Indigenous students apply or meet the entrance requirements, the reserved position will be redirected to another applicant. For **female students**, we are targeting a ratio of 50/50 male and female students, and will be conscious of this ratio in advertising and in final selection

of candidates for the program. As mentioned above, we will tailor marketing advertisement for the program to these groups. In terms of **international students**, it is important to target this demographic because this program will be a vehicle for internationally trained Dentists to pursue an academic or research career. This aspect of internationalization brings further diversity to the program and increases opportunities to see new perspectives for all involved. A new senior leadership position created by the university and the college will lead the development of strategic international partnership agreements – Associate Dean, Graduate and Internationalization, College of Dentistry.

d. What are the most similar competing programs in Saskatchewan, and in Canada? How is this program different?

In Canada, there are 5 PhD programs hosted in Canadians Dental Schools, and no competing programs in the province. The other Canadian programs are limited to more traditional dental or oral biology disciplines (e.g. oral physiology, oral microbiology and oral biochemistry), or dental specialty-related programs (e.g. periodontology and prosthodontic). Our proposed program will focus on a more integrative ***"body to mouth"*** concept with opportunities for students to focus on precision technologies and approaches, or translational oral and public health approaches. With this unique focus, we anticipate that the number of applicants will be higher than in for the more traditional and increasingly outdated "dental/oral biology" graduate PhD programs hosted in other Canadian Dental Schools, and will also attract a different cohort than dental specialty training programs. In addition, we anticipate attracting a significant number of internationally trained dentists who are not eligible for licensure in Canada as dentists, and who aspire to a career in oral health-related academic or research positions. For example, the Canadian Dental Association estimate that there are around 3000 international trained dentists in Canada. All these international dentists are potential PhD students to our program.

Table 1. Example of PhD Programs offered by Canadian Dental Schools ***including minimal cu required for graduation, prior degree requirements and tuition for domestic and international students***.

Institution and PhD Name	**Areas of Specialization**	**Minimal cu required**	**Prior Degree Requirements**	**English Language Requirements**	**Tuition (domestic/ International)**
University of British Columbia – PhD in Craniofacial Science	▪ Population Health ▪ Oral Health Clinical Research ▪ Basic Science	*12 credits* during the first year of study.	▪ DDS, DMD, MD or DVM, or equivalent, OR ▪ MSc in Dental Science, or related discipline	TOEFL (IBT) overall: 93, with specific component requirements IELTS overall: 7.0 with min 6.5 per component	$4,995.78 / $8,776.74

University of Manitoba – PhD in Oral Biology	▪ Oral Biology	Minimum course requirements are 12 credits and Communication Skills in Dental Research (unless they have previous credit for an equivalent course).	Master's degree, or equivalent, cumulative GPA of 3.0 (B) OR Professional Degree or BSc (Hons)	TOEFL (IBT) overall: 86 (with min 20/section) IELTS overall (academic module): 6.5	$4,961.64 / $10,915.76
University of Alberta – PhD in Medical Sciences	▪ Oral Biology	Course requirements are recommended by the Supervisor and Supervisory Committee based on the background of the student	DDS, University degree, preferably an MSc, or equivalent with previous research experience	TOEFL (IBT) overall: 95 (with min 20/section) IELTS overall; 7.5 with specific component requirements	$5,645.00 / $9,465.00

2. Admissions

a. What are the admissions requirements of this program?

Admission requirements for the PhD program include:

i. Degree Qualifications:

1) ***Regular admission:*** Relevant Master's degree, or equivalent, with a minimum overall average of 70%.
OR
2) ***Direct-entry admission:*** Professional degree in a relevant health sciences field (DMD, DDS, MD, RN, PT or equivalent) and a minimum overall average of 80%, with continuation in PhD program beyond year one dependent passing qualifying exam administered during year one (details 3c). Direct-entrants also have additional prescribed 19 credit units (cu). The combination of stringent requirements during professional degree coursework, the qualifying exam, and required 19 additional cu will ensure direct-entry students are equally as successful as regular entry students in the program.

ii. English language proficiency: Applicants whose first language (i.e. native language) is not English must provide evidence of English language proficiency by achieving at least the minimum scores on one of the following measures, with test taken within the last 24 months.

1) ***Test of English as a Foreign Language (TOEFL):*** The minimum acceptable score for the internet-based test is 86, with no individual section score below 20; or

2) ***The International English Language Testing Service (IELTS) of the British Council:*** The minimum acceptable score is 6.5, with no individual section score below 6.0

iii. **Statement of academic intent**

iv. **Three reference letters**

3. Description of the program

a. What are the curricular objectives, and how are these accomplished?

The curricular objectives will ensure graduates have the skills to become highly qualified researchers and policy makers who are capable of designing and conducting research that has impacts in the areas of oral health, precision health, public and population health (including Indigenous health). A diverse group of students are expected in the program under the **common thread of translational 'body to mouth' research, with opportunities for including precision technologies to investigate oral and systemic health.** For example, PhD research projects are expected in a wide range of topics from data-rich 'omics platforms or bioinformatics, to oral health or disease prevention in priority populations, to biomaterials and molecular biology. With the now-common inclusion of stakeholders in the research process, there will also be a focus on extending research beyond academia to implications for general society. **These curricular objectives will not only foster scientific knowledge, but also develop the 'soft skills' that are essential for obtaining positions in the competitive job market in Canada.**

Graduates of the PhD program will:

- be able to critically evaluate current literature and research techniques/ methodologies in the context of their own research and in related disciplines;
- demonstrate expertise in their core subject area and broad-based knowledge in complementary subject areas;
- become self-directed and creative problem solvers capable of respectfully questioning their own research approaches and those of others;
- be able to design and execute a novel research plan and make significant contributions to scientific knowledge base in their area of research, in an autonomous manner
- be able to understand and interpret the requirements of stakeholders to ensure alignment of research process and goal-setting with intended stakeholder outcomes
- demonstrate originality in applying knowledge, with a practical understanding of how research and enquiry can be used to interpret knowledge and provide insights for stakeholders
- be able to effectively communicate research results through oral presentations and written publications, both for academic and stakeholder audiences
- possess the 'soft skills' required for future career pursuits in academia, private or government, including skills in leadership, critical thinking, problem solving, conference presentations, manuscript preparation, grant applications, and teaching.
- be adept at accepting constructive critique from mentors throughout the PhD process and, in turn, provide a level of mentorship to more junior students

b. *Describe the modes of delivery, experiential learning opportunities, and general teaching philosophy relevant to the programming. Where appropriate, include information about whether this program is being delivered in a distributed format.*

The objectives will be accomplished through a step-wise series of didactic teaching and laboratory experiences (where applicable), collaborative academic initiatives, and appropriate mentorship. Throughout their experience in the POSH program, students will be provided with regular opportunities to engage with one another at these formal/informal events, such as presentations/discussion at seminar series, lab meetings, journal club, workshops etc. These interactions will expand their interest in and knowledge of related research areas. The required coursework will include theoretical knowledge as well as development of leadership, critical thinking and professional skills that are highly sought in for both scientific and societal applications.

For those selecting a more academic career path in their program planning, there will be opportunities for honing their communication and technical teaching skills as they assist with courses with practical components, such as Teaching Assistant (TA) in our DAP and DMD programs, and as co- supervisor for the BSc DENT students during the College of Dentistry Summer Research Program. Compensation will be provided for TA responsibilities, as prescribed by USask PSAC – Graduate Student agreement (see section 5i).

There are no plans for delivery in a distributed format.

c. *Provide an overview of the curriculum mapping*

For completion of the PhD program, students must fulfil the requirements in the Table below (comparing regular and direct-entry admission requirements). ***The number of credits is in accordance to the similar programs in the country (see Table 1)***. The anticipated time frame for PhD completion is four years. The maximum time limit for PhD completion is six years.

PhD Completion Requirements	**Regular Admission**	**Direct-Entry Admission**
i. Credit units of coursework (minimal requirement)	10 cu or 11 cu	19 cu
ii. Pass qualifying exam within one year of start date	Required	Required
iii. Pass comprehensive exam	Required	Required
iv. Thesis proposal defense	Required	Required
v. Oral examination of the thesis	Required	Required

Credit units of coursework: An individualized coursework plan will be developed in conjunction with each student's faculty supervisor, and be approved by the advisory committee and graduate chair.

Regular admission students are required 10 or 11 cu and direct-entry admission students is required 19 cu

All students must enroll for courses 803.3, 805.2, 990.0, and 996.0.

Students must select either 801.3 or 802.3 and either 804.3 or 806.2 courses

While there is not requirement from the program for direct-entry admission students to enroll at research methodology and biostatistics courses. These two types courses will be suggested and offered thought the list of USASk graduate courses. Coursework requirements will be determined in consultation with the student and advisory committee based on research topic and background preparation.

Table 1. Core graduate courses offered by the POSH PhD Program

Course Code	Course Name	Credit Units	Course Director
DEN 801.3	Organogenesis of Complex Systems - From Development to Diseases	3	Papagerakis
DEN 802.3	Proteomics – Oral Clinical Applications	3	Siqueira
DEN 803.3	Advanced Oral Biology	3	Leask
DEN 804.3	Teaching and leadership abilities for academic environment	3	Siqueira
DEN 805.2	Critical thinking in translational Research for Oral Health Sciences	2	Jessani
DEN 806.2	Discussion of Social Issues and Science	2	Jessani
DEN 990.0	Seminar	0	Siqueira
DEN 996.0	Research	0	Siqueira

In addition, students could enroll at courses offered at USask graduate programs. For example, courses offered by biomedical engineering, nutrition, bioinformatics, or statistics or other relevant graduate level courses (STAT 850.3 Mathematical Statistics and Interference; STAT 812.3 Computational Statistics; STAT 834.3 Advanced Experimental Design; STAT 845.3 Statistical Methods for Research; BIOE 820.3; Tissue Engineering; BIOE 805.3 Magnetic Resonance imaging; BIOE 806.3 Biomaterials; BIOE 850.3 Synchrotron XRay imaging; CMPT 830.3 Bioinformatics and Computational Biology; CMPT 856.3 Readings in Bioinformatics; FDSC 888.3 Nutrigenomics: Nutrient-genome interactions influencing health and lifespan). *Letters of support from all the courses listed above are also provided in this application.*

Pass qualifying exam: The PhD qualifying exam will be an oral exam administered in the first year of the PhD program to evaluate scientific knowledge and critical thinking abilities. All students must pass the exam to continue in the PhD program with advisory committee having final decision.

Pass comprehensive exam: All students must pass the comprehensive exam within 18 months of their program start date, or at completion of coursework requirements. Exam format and content will be decided by each advisory committee to complement the student's PhD area of research and professional aspirations. Both written and oral requirements will be used during the comprehensive exam. Written requirements will consist of traditional examination questions on selected manuscripts based on the PhD student's research topic. Oral examination regarding the written components will be conducted by the comprehensive exam committee over a period of up to two hours.

Thesis proposal defense: Prior to beginning detailed work on their thesis, students must present their thesis proposal and the student's advisory committee must accept the proposal. The proposal will include initial results from the literature review, tentative structure for the research project and explanation of how the proposed project will contribute to the discipline.

Written thesis/dissertation: Acceptable PhD level projects will be original research that has potential to contribute significant new knowledge in the discipline. Students are expected to navigate animal/human ethics approvals (as necessary), and to choose appropriate methods for data collection and analysis that will allow them to effectively draw conclusions from their results. The written thesis/dissertation must be presented in clear, concise manner that will allow the committee to properly evaluate all aspects of the thesis. Note that any proposed studies related to systematic review, classical review, or meta-analysis will not be accepted at the PhD level.

Oral examination of the thesis: The student makes a 30-45 minute presentation summarizing their research question, results and conclusions from their thesis, followed by rigorous questioning from the Examining Committee. Questions will be mainly based on the thesis and presentation, but may extend to testing the student's grasp of extended topics relating to their thesis. The committee must determine whether the student has successfully defended the thesis.

d. Identify where the opportunities for synthesis, analysis, application, critical thinking, problem solving are, and other relevant identifiers.

Students will participate in a full spectrum of didactic and experiential learning opportunities to develop their **higher-order thinking skills**. As they move through the POSH requirements, from coursework, to thesis proposal defense, to the research phase, and finally to the final oral defense, they will need to rely on these higher level skills to be successful.

For example, during literature review, students will need to apply multiple skills of **analysis, synthesis and critical thinking**. They need to analyze existing information to determine relevance to a research topic, summarize and synthesize themes and key messages, and critically assess the importance of their findings to the topic at hand. As the student moves into their research phase, they will need to **apply and extend what they have learned** earlier in their program to answer their research question. In applying their base knowledge, they will need to skillfully sort through all information to determine the most relevant and appropriate way to approach their problem. As they undertake the research, they will encounter many opportunities for **problem solving** as experiments or data collection may not proceed as planned, or new opportunities may arise mid-project. They will also need to be adept at **critically evaluating their progress and findings** at various steps in the process to determine if the course of action will meet their intended goals and allow them to **draw conclusions** from the research.

Through all components of the program, students will be given opportunities to both develop and put these skills to the test in formal and informal discussions with peers and mentors. For those students who want dedicated instruction on improving their higher-order thinking skills, there is the opportunity to select courses on this topic as part of their programming. These skills are in high demand by all employers (whether academic, private, or government sector) and are thus an important focus of the program.

e. Explain the comprehensive breadth of the program.

The POSH program will provide students with the knowledge, attitudes, and skills necessary to become highly qualified individuals who are capable of designing and conducting research related to oral health and exploring the "body to mouth" connection. Thesis research projects in the program will be diverse, and may include **approaches from basic science to translational research to participatory action research**, with other approaches as appropriate. Research topics will have a **connection to oral health and will range across the spectrum of biomedical, precision health, public health, public policy, Indigenous and priority population health, and bioengineering**. The expected range of research topics will create for a robust learning environment in that students will be exposed to approaches and subject matter outside their specific focus and encouraged to find connections and shared interests in complementary research projects. They will be exposed to research and training using the use of state-of-the-art technology, critical thinking approach, ethical considerations and clinical applications in a real-world context.

f. Referring to the university Learning Charter, explain how the 5 learning goals are addressed, and what degree attributes and skills will be acquired by graduates of the program.

The program is guided by the use of state-of-the-art technology, critical thinking approach, ethical considerations and translational/clinical applications in a real-world context. All five of the USask core learning goals are addressed through the POSH PhD program.

Discovery Goals: The curriculum will be delivered using a combination of didactic lecture, self-directed on-line learning, group work, practical leadership and teaching experiences, with opportunities for exploring subject matter through critical and creative thinking. Students will be encouraged to challenge their understanding of concepts and develop a strong passion for self-motivated learning that extends beyond their academic program.

Knowledge Goals: Our graduates will have gained both specific topic and broad base knowledge through the POSH program, with a focus on a holistic approach exploring "the body to mouth" connection. A diverse group of thesis topics are expected in the program and this will facilitate learning opportunities for complementary topics/disciplines for students. It will support our goal of training the next generation of academics, scientists, policy makers, and practitioners who are capable of judiciously applying their knowledge to emerging priorities in future positions.

Integrity Goals: A focus on professionalism and integrity will be woven throughout the POSH program and adherence and modeling of moral and ethical principles will be expected from all those involved in the program. All coursework will include some aspect of intellectual integrity and ethical behaviour, with options for taking electives dedicated to this topic. To graduate, students must demonstrate that they understand and consistently practice professional and ethical integrity.

Skills Goals: Students will develop both their technical and soft skills through the POSH program. Technical skills and technological literacy of relevant to each trainee's research and aspirations will be developed to ensure success in future endeavors. Students will be continually encouraged to hone their communication and other soft skills to ensure they can communicate effectively with varied audiences at varied venues – from brainstorming informally with other individuals in academia, to sharing research results with stakeholder/lay audiences, to presenting formally at conferences.

Citizenship Goals: Throughout the program, students will be encouraged to develop their leadership and people skills in a respectful and diversity-focused environment. These soft skills will be invaluable in future pursuits where they will need to contribute to high-functioning transdisciplinary teams. Throughout the program, students will identify opportunities for connecting their research and learning to society, to encourage translation and positive contributions for society. Diversity is highly valued by the course directors in their present mentorship models and diversity training will be a mandatory component.

g. *Describe how students can enter this program from other programs (program transferability).*

*S*tudents wishing to transfer from other programs would be considered if the minimum admission criteria are meet.

h. *Specify the criteria that will be used to evaluate whether the program is a success within a timeframe clearly specified by the proponents in the proposal.*

Program success will be evaluated after two years using the university's internal review process specific for new graduate programs. After seven years (as for any university graduate program) the program will be evaluated by looking at specific key performance indicators (KPIs). KPIs are identified in the table below with respective targets that would indicate program success. Selected KPIs and other metrics may be evaluated annually (ex. # student applications, student satisfaction) to monitor uptake for reaching target enrolment and ensuring student satisfaction.

Key Performance Indicator	**Target**
Program quality assurance	University internal review process
# student applications	≥ 30 applicants/year
Program completion rate	≥90% on time completion
Number of external scholarships	≥30% total enrolled students
Number of students awards	≥30% total enrolled students
Number of manuscripts published	≥3 per student at time completion
Student satisfaction with program	Student-led annual evaluation, with feedback accumulated by student spokesperson (de-identified) for presentation/discussion with Associate Dean Graduate and Internationalization.

Graduate employment	≥90% within 120 days

i. If applicable, is accreditation or certification available, and if so how will the program meet professional standard criteria. Specify in the budget below any costs that may be associated.

N/A

4. Consultation

a. Describe how the program relates to existing programs in the department, in the college or school, and with other colleges. Establish where students from other programs may benefit from courses in this program. Does the proposed program lead into other programs offered at the university or elsewhere?

In terms of relationship to existing college programs - i.e. DMD, IDDP, DAP, BSc DENT, (and MSc-DPH application pending approval), the PhD program will be integrated into the teaching, learning and research environment alongside these existing programs. PhD students and supervisors will contribute to cross-program activities within the college, will provide mentorship to junior students, and will be role models for those considering pursuing PhD studies. PhD students will also have the opportunity to serve as a TA in specific didactic and pre-clinical courses (e.g., application of dental research, oral histology, dental materials, oral microbiology and operative dentistry) delivered by the DAP and DMD programs.

Graduates of the USask DMD program (along with other professional degree graduates from USask or other) will be eligible to apply to the POSH PhD program using the direct-entry stream, and USask DMD-BSc DENT students will be especially well-positioned to succeed given the additional focus on research in their enhanced program. Graduates from Dentistry Master's program(s) (one program pending approval + potential future program) interested in pursuing academic positions may also consider the POSH PhD program. The specializations chosen for the program will ensure that a variety of students can see benefit to pursuing a PhD in the POSH program.

The POSH program will be considered a terminal degree and thus does not specifically lead into other programs offered at USask. However, it is also relatively common that Ph.D. graduates enter dentistry after meeting all of the regular admission criteria for the DMD program, so there may be some uptake in the DMD program in this regard. In addition, future college plans may include establishing a combined PhD-IDDP program (students will finish the Ph.D. before entering year-3 of DMD program), and PhD-DMD programs (students complete the Ph.D. prior to initiating the DMD program).

There are opportunities for students from other complementary graduate programs to benefit from courses offered in the POSH PhD program, and they will be welcome to enrol, space permitting. We will invite them to participate in workshops and seminars organized by the POSH program to encourage a diverse, yet complementary perspectives.

b. *List units that were consulted formally and provide a summary of how consultation was conducted and how concerns that were raised in consultations have been addressed. Attach the relevant communication in an appendix.*

Internal consultations took place as part of the College of Dentistry Strategic Planning process (Appendix 1). The Planning and Priorities Committee of Council has consulted the Provost, and the Institutional Planning and Assessment Office was consulted as part of College of Dentistry Strategic Planning. The consultation was also conducted verbally in private meetings with the Provost. Indeed, the Provost is very supportive of this initiative. For example, the Provost approved a new senior leadership position in the college, Associate Dean Graduate and Internationalization to lead the implementation of the proposed Ph.D. program.

The Planning and Priorities Committee of Council memo, dated March 28, 2019, made suggestions for revisions to this document, and these revisions have been incorporated. We have also revised the document according to the detailed comments received from the College of Graduate and Postdoctoral Studies.

Individual colleges and departments were consulted in the development of the program (College of Agriculture and Bioresources, Department of Biomedical Engineering, Department of Mathematics and Statistics) and each were supportive of the program (Appendix 1) . With the focus of the program on the umbrella concept of precision oral and systemic health, it has a distinct focus that is unique to the program. Thus, there is little concern with the program impacting enrolment in other USask programs. In addition, the program will seek to recruit students who received their dental credential internationally (and who are not eligible for Canadian licensure); this is not a demographic typically associated with any existing graduate programs on campus.

c. *Proposals that involve courses or other resources from colleges outside the sponsoring unit should include evidence of consultation and approval. Please give special consideration to pre- and co-requisite requires when including courses from other colleges.*

From the list of potential courses available in Section 3c, there is interest from several departments in having POSH PhD students take courses on complementary topics in their units. In addition, there are two 898 courses (Computer Science and AgBio) that would be excellent additions to any student program as they deal with ethical concerns and professional skills. The consulted units felt that students would strongly benefit from taking courses available in their units and some mentioned that they encourage a variety of disciplines to help foster connections and collaborations. Appendix 1.

d. *Provide evidence of consultation with the University Library to ensure that appropriate library resources are available.*

Please see the Appendix for the Library Requirements for New Programs and Major Revisions. There were no concerns identified on this form and thus students will have appropriate resources available to support their studies and research.

e. *List other pertinent consultations and evidence of support, if applicable (e.g., professional associations, accreditation bodies, potential employers, etc.)*

N/A

5. Budget

a. *How many instructors will participate in teaching, advising and other activities related to core program delivery (not including distribution/ breadth requirements or electives)? (estimate the percentage time for each person).*

Initially, the proposed phd program will start with 6 faculty members (5 DDS-PhD and 1 PhD). Dr. Siqueira will be course director for four proposed PhD courses (including 990.0 and 996.0), Dr. Jessani will be course director for two proposed courses, while Drs. Leask and Papagerakis will be course director for one proposed course each. However, percentage of time for each faculty member will be based on more than course directorship, given that some faculty members will advise/supervise higher numbers of POSH students than others. Drs. Siqueira will dedicate 20% his time, Drs. Papagerakis and Leask 15% of their time, Drs. Ahmed and Hoover and Jessani 10% of their time. Percentages will also vary depending on course timing, interest/eligibility of other faculty members in supervising students in the program, and changes in faculty cohort through attrition and expansion. All faculty members participating in PhD program teaching or student supervision will seek membership in CGPS prior to their participation in the POSH program.

b. *What courses or programs are being eliminated in order to provide time to teach the additional courses?*

No courses or programs need to be eliminated.

c. *How are the teaching assignments of each unit and instructor affected by this proposal?*

Drs. Siqueira and Leask are newly hire faculty members and this will be their primary teaching assignment. Dr. Papagerakis does not have any other teaching assignments within the College of Dentistry. The college will ensure Drs. Hoover and Ahmed and Jessani's teaching schedules will accommodate this assignment.

d. *Describe budget allocations and how the unit resources are reallocated to accommodate this proposal. (Unit administrative support, space issues, class room availability, studio/practice rooms laboratory/clinical or other instructional space requirements).*

Classroom Space: Classroom space requirements for the program are minimal, as the PhD program will accept a maximum of 7 students per year. Since no large classrooms are needed, we anticipate no problems providing instructional space within existing College of Dentistry meeting room space, or within the new college A-Wing space (available Nov 2019).

Administrative Support: The College of Dentistry has nearly all of the necessary staff resources in place to operate this relatively small graduate program, with the exception of a 0.5 FTE Administrative Assistant who will support all aspects of the program.

Laboratory, clinic and Student Room space: All potential faculty supervisors have well-equipped laboratory, dental clinic and student rooms located in A-Wing and College of Dentistry-Dental Clinic.

e. *If this program is to be offered in a distributed context, please describe the costs associated with this approach of delivery and how these costs will be covered.*

N/A

f. *If this is an interdisciplinary program, please indicate whether there is a pool of resources available from other colleges involved in the program.*

N/A

g. What scholarships will students be able to apply for, and how many? What other provisions are being provided for student financial aid and to promote accessibility of the program?

Candidates should be prepared to support themselves for the duration of POSH program, although funding from scholarships and teaching assistantships may be obtained on a competitive basis. Students will be encouraged to apply for both internal and external funding opportunities. In addition, international students may have external sponsorship opportunities in their home countries to offset costs associated with the program. The college will provide a maximum of $22,000/year in funding for POSH PhD program. Typically, four scholarships valued at a $5,500/year/student will be offered in each year, with variations approved by the scholarship committee. These scholarship will be competitive and will be awarded to the most accomplished PhD student every year. The Associate Dean, Graduate and Internalization will be responsible for organizing a scholarship committee.

h. What is the program tuition? Will the program utilize a special tuition model or standard tuition categories? (The approval authority for tuition is the Board of Governors).

We propose tuition of $ 4,260.00/year for Canadian students and $6,730.80/year for international students. Our proposed tuition is comparable with the current tuition for similar PhD programs at english-speaking dental schools in Canada and matches the current tuition for graduate programs at USask.

i. What are the estimated costs of program delivery, based on the total time commitment estimates provided? (Use TABBS information, as provided by the College/School financial officer)

Revenue and expense figures have been estimated based on information and details available, including information from the TABBS SAT tool provided by the Integrated Planning and Assessment (IPA) office. We understand the limitations and assumptions that are inherent in the TABBS SAT tool and will adjust our estimates as more detailed information and tools become available. The following DRAFT spreadsheet projects the program budget for a 6-year period.

College of Dentistry
Proposed PhD Program in Oral Health Research
Intake of Seven (7) Students Per Year
University of Saskatchewan
October 2019

	Year 1 2020-21	Year 2 2021-22	Year 3 2022-23	Year 4 2023-24	Year 5 2024-25	Year 6 2025-26
REVENUE						
Number of CDN students	2	4	6	8	8	8
Tuition rate (3% increase/year)	$ 4,260	$ 4,388	$ 4,519	$ 4,655	$ 4,795	$ 4,939
Total Tuition Revenue	$ 8,520	$ 17,551	$ 27,117	$ 37,240	$ 38,357	$ 39,508
Number of Int'l students	5	10	15	20	20	20
Tuition rate (3% increase/year)	$ 6,731	$ 6,933	$ 7,141	$ 7,355	$ 7,576	$ 7,803
Total Tuition Revenue	$ 33,654	$ 69,327	$ 107,111	$ 147,099	$ 151,511	$ 156,057
TABBS Incr Op Grant Revenue *	$ 23,398	$ 46,768	$ 70,108	$ 223,853	$ 223,853	$ 223,853
Actual Tuition Revenue per TABBS	$ -	$ 42,174	$ 86,878	$ 134,227	$ 184,339	$ 189,869
TOTAL YEARLY REVENUE	**$ 23,398**	**$ 88,942**	**$ 156,986**	**$ 358,080**	**$ 408,192**	**$ 413,722**
EXPENSES						
Indirect Costs (per TABBS) **	$ 26,841	$ 48,199	$ 69,540	$ 90,864	$ 91,773	$ 92,690
0.5 FTE Admin Support ***	$ 32,000	$ 32,688	$ 33,391	$ 34,109	$ 34,842	$ 35,591
Teaching Assistant pymts to PhD students ****	$ -	$ 19,089	$ 19,547	$ 20,017	$ 20,497	$ 20,989
Scholarships ($22,000/yr)	$ 22,000	$ 22,000	$ 22,000	$ 22,000	$ 22,000	$ 22,000
TOTAL YEARLY EXPENSES	**$ 80,841**	**$ 121,976**	**$ 144,478**	**$ 166,989**	**$ 169,112**	**$ 171,270**
NET SURPLUS (DEFICIT)	**($57,443.00)**	**($33,034.30)**	**$12,508.20**	**$191,090.91**	**$239,080.02**	**$242,451.42**

CONTRIBUTIONS IN-KIND FROM COLLEGE OF DENTISTRY
The College will contribute approximately 13% of the time of six of our faculty members who will be PhD program supervisors. These salaries and benefit costs are already paid for by the College, so will not be an incremental cost, but rather, an in-kind contribution to the program by the College. The approximate value of this in-kind contribution is $93,000 in Year 1 of the PhD Progam.

The only space used by the program will be classroom space. The cost for classroom space is already captured in Indirect Costs via TABBS.

TABBS Revenue and Cost data generated using July 2019 TABBS SAT
* - TABBS Unrestricted Operating Grant estimated to remain the same for 21-22 through 23-24 as per IPA estimate included in Sept/18 MYFP Information
** - TABBS Indirect Costs estimated to increase 2% in 22-23 and 1% per year thereafter as per IPA estimate included in Sept/18 MYFP Information
*** - Salary and benefit cost escalation estimated at 2.15% per year based on USask HR estimate
**** - Salary and benefit cost as per PSAC Collective Agreement, including cost escalation at 2.4% (21/22 and onward) as per Usask HR estimate (Oct 2019)
- calculated on PSAC rate of $20.04/hr x 7 hours/week/student x 18 weeks (term 1 of DMD program) x 7 students in the program. Rate subject to negotiations between Usask and PSAC as existing contract expired Aug. 31/19. TA activities begin in Year 2 of PhD program, and involve only PhD Yr 2 students.
- PSAC benefits costs estimated at 8% of salary.

T:\Finance\Proposed PhD Dent Program Financial Projection\draft financial model for PhD program Oct 15 2019.xlsx

The following assumptions apply for the budget:

i. Tuition is at the rates identified above.
ii. The students in the program will be all doctoral students.
iii. Doctoral students may choose credit units of instruction from non-DENT courses.
iv. The primary supervisor for all students will be DENT faculty.
v. The PhD is thesis-based.
vi. There will be no additional faculty specifically hired to support the program. A 0.5 FTE administrative support position to assist the proposed PhD program, is budgeted for in this application at 0.5 FTE.
vii. No additional space is required –all study/research/office space required for the students is feasible within existing space.

j. What is the enrolment target for the program? How many years to reach this target? What is the minimum enrolment, below which the program ceases to be feasible? What is the maximum enrolment, given the limitations of the resources allocated to the program?

The annual enrollment target is 7 students (2 domestic and 5 international students) with expectation that the program will reach the target enrolment of maximum 28 students after 4 years (8 domestic students and 20 international students). These enrolment values were generated based on faculty member plans for student training and College of Dentistry resources. In terms of reaching these targets, the College has recently recruited several new faculty members; two of the new hires have well-established research programs and each will typically supervise several PhD-level students each year. These new faculty recruits are in addition to the already existing faculty, of which one faculty member is a research-intensive appointment.

k. What are the total expected revenues at the target enrolment level, separated into core program delivery and distribution/breadth requirements or electives? What portion of this expected revenue can be thought of as incremental (or new) revenue?

Please see item 5.i above

l. At what enrolment number will this program be independently sustainable? If this enrolment number is higher than the enrolment target, where will the resources come from to sustain the program, and what commitments define the supply of those resources?

Simulations using TABBS SAT tool was carried out. When fully implemented (Year 4), a minimal number of 12 students is necessary to maintain the program independently sustainable.

m. Proponents are required to clearly explain the total incremental costs of the program. This is to be expressed as: (i) total cost of resources needed to deliver the program: (ii) existing resources (including in-kind and tagged as such) applied against the total cost: and (iii) a listing of those resource costs that will require additional funding (including new in-kind support).

Please see item 5.i above

n. List all new funding sources and amounts (including in-kind) and the anticipated contribution of each to offsetting increment program costs. Please identify if any indicated funding is contingent on subsequent approval by a funding authority and/or future conditions. Also indicate under what conditions the program is expected to be cost neutral.

The proponents should also indicate any anticipated surpluses/deficits associated with the new program

Please see item 5.i above

Precision Oral and System Health

Doctor of Philosophy (Ph.D.) – Non-Direct Entry

Admission Requirements

Indigenous Applicants
One admission space is reserved for qualified, self-identified First Nations, Metis, or Inuit applicant.

Female Applicants
Three to four admission spaces will be reserved for qualified female applicants

- Language Proficiency Requirements: Proof of English proficiency may be required for international applicants and for applicants whose first language is not English. For more information on language proficiency requirements, see the College of Graduate and Postdoctoral Studies Academic Policies.
- Master's degree, or equivalent, from a recognized university in a relevant academic discipline
- a cumulative weighted average of at least a 70% (U of S grade system equivalent) in the last two years of study (i.e. coursework required in Master's program)

Additional application documents include three letters of reference and a statement of academic intent.

Degree Requirements

Students must maintain continuous registration in the 996 course.

- GPS 960.0
- GPS 961.0, if research involves human subjects
- GPS 962.0, if research involves animal subjects

A minimum of 10 credit units including:

- DENT 803.3
- DENT 805.2
- One of DENT 801.3 or DENT 802.3
- One of DENT 804.3 or DENT 806.2
- DENT 990.0
- DENT 996.0
- Qualifying examination

- Comprehensive examination
- Oral thesis defense

Precision Oral and System Health

Doctor of Philosophy (Ph.D.) –Direct Entry

Admission Requirements

Indigenous Applicants
One admission space is reserved for qualified, self-identified First Nations, Metis, or Inuit applicant.

Female Applicants
Three to four admission spaces will be reserved for qualified female applicants

- Language Proficiency Requirements: Proof of English proficiency may be required for international applicants and for applicants whose first language is not English. For more information on language proficiency requirements, see the College of Graduate and Postdoctoral Studies Academic Policies.
- Professional degree in a relevant health sciences field (DMD, DDS, MD, RN, PT, or equivalent), from a recognized university
- a cumulative weighted average of at least a 80% (U of S grade system equivalent) in the last two years of study (i.e. 60 credit units of course work)
- Demonstrated ability for independent thought, advanced study, and independent research

Additional application documents include three letters of reference and a statement of academic intent.

Degree Requirements

Students must maintain continuous registration in the 996 course.

- GPS 960.0
- GPS 961.0, if research involves human subjects
- GPS 962.0, if research involves animal subjects
- At least 9 credit units of course work at the graduate level must be successfully completed in the first year of the program
- Within the first year of the program, successfully complete a Ph.D. Qualifying Examination that is at least as rigorous as the defence for a Master's thesis in the program area

A minimum of 19 credit units including:

- DENT 803.3
- DENT 805.2
- One of DENT 801.3 or DENT 802.3
- One of DENT 804.3 or DENT 806.2
- DENT 990.0
- DENT 996.0
- Qualifying examination
- Comprehensive examination

- Oral thesis defense

POSH course List:

DEN 801.3 - Organogenesis of Complex Systems: from Development to Diseases

This course is composed from 4 modules. First, the course will consist of two general lectures on signaling to provide background and one basic lecture on mathematical modeling of development (module 1). Then, there will be 6 lectures on stem cell and regeneration topics (module 2). Third, an organ module, with 9 lectures (module 3). Following this module will be a final module on preparation of an CIHR- or NSERC-style mini-grant (module 4).
Classes will be held three times a week (1 hour per lecture). On the first six weeks there will be an introduction to the correlated topics and on the remaining classes students will participate in presentations and group discussions on topics related to the course. On the second six weeks students will work including on their proposals.

DEN 802.3 - Proteomics- Oral Clinical Applications

The course will begin with an introductory lecture defining the goals of proteomics, and discussing two typical workflows and essential theories in acquiring proteomics data for scientific research. The following two lectures will be practical training, in which the student will acquire hands-on experience working with the analytical instrumentation most commonly used in proteomics. In the remaining lectures, each student in consultation with the course director will select recent publications related to the field of applied proteomics, present them to the group and lead a discussion with classmates

DEN 803.3 - Advanced Oral Biology

The course will work as a foundation course for oral biology science. This course will comprehensive discuss about the methodology, oral biology techniques and their day-to-day use in the lab and clinic environment. In consultation with the course director, each student will select 2 specific techniques and methodologies relevant to oral biology science. Each student will be assigned a session to present his/her selected topic, followed by questions and general discussion. The course may also include presentations by guest lecturers (e.g. Scientist from oral health companies on specific methodology).

DEN 804.3 - Teaching and leadership abilities for academic environment

Students will learn about leadership theories and signature pedagogies, including the use of case studies, inductive teaching methods, and problem-based learning. All teaching activities will be supervised by the course director and other instructors from the College of Dentistry.

DEN 805.2 - Critical thinking in translational Research for Oral Health Science

Students will learn and discuss all phases related to oral translational research, including the translational aspects of clinical science. Classes will be held once a week. On the first two weeks there will be an introduction to the correlated topics and on the remaining classes students will participate in presentations and group discussions on topics related to the course, including methodologies, research grant applications focusing on the process of translating basic scientific discoveries to pre-clinical, clinical applications and entrepreneurship.

DEN 806.2 - Discussion of Social Issues and Science

This course will discuss medical issues (e.g., vaccination, water fluoridation, diseases outbreak, etc.) related to the contemporary society and deliberate possible solutions on how to advance the communication of scientific discoveries to the lay population. In addition, students will learn ways to organize a point-of-view or position manuscript. All lectures will be delivered in an interactive discussion forum where students are strongly encouraged to participate and share their perspectives on the respective themes as much as possible.

College Statement

Please provide here or attach to the online portal, a statement from the College which contains the following:

1. Recommendation from the College regarding the program
2. Description of the College process used to arrive at that recommendation
3. Summary of issues that the College discussed and how they were resolved

Related Documentation

At the online portal, attach any related documentation which is relevant to this proposal to the online portal, such as:

1. Excerpts from the College Plan and Planning Parameters
2. SPR recommendations
3. Relevant sections of the College plan
4. Accreditation review recommendations
5. Letters of support
6. Memos of consultation

It is particularly important for Council committees to know if a curriculum changes are being made in response to College Plans and Planning Parameters, review recommendations or accreditation recommendations.

Consultation Forms At the online portal, attach the following forms, as required

Required for all submissions:

1. Consultation with the Registrar form
2. Complete Catalogue entry, if proposing a new program, or excerpt of existing of existing program with proposed changes marked in red

Required for all new courses:

1. New Course Proposal forms
2. Calendar-draft list of new and revised courses

Required if resources needed:

Appendix 1

A. Consultation and Support Letters: PhD in Precision Oral and Systemic Health[1]

1. Dr. Dirk de Boer, Chair, Planning and Priorities Committee of Council
2. Dr. Darren Korber, Professor and Department Head - Food and Bioproduct Sciences
3. Dr. Raj Srinivasan, Department Head - Department of Mathematics and Statistics
4. Dr. Christopher Eskiw, Assistant Professor -Department of Food and Bioproduct Sciences
5. Dr. Anthony Kusalik, Director of the Bioinformatics and Computational Biology Research Laboratory
6. Dr. Daniel Chen, Professor and Graduate Chair - Department Biomedical Engineering

B. Library Requirements for New Programs and Major Revisions

C. College of Dentistry Plan 2025

[1]Consultation and support letters may refer to a previous name for the PhD program - Human Health and Technology (HHT)

UNIVERSITY OF SASKATCHEWAN

MEMORANDUM

TO: Doug Brothwell, dean, College of Dentistry

FROM: Dirk de Boer, chair, planning and priorities committee of Council

DATE: March 28, 2019

RE: **Planning and priorities committee response to College of Dentistry's recent Notices of Intent – the Doctor of Medicine in Dentistry (DMD), the Master of Science in Dental Public Health (MSc – DPH), and the PhD in Human Health and Technology Program (PhD – HHT)**

Thank you for attending the planning and priorities committee meetings on January 26 and February 25, 2019 to present the notices of intent for the proposed renewal of the Doctor of Medicine in Dentistry (DMD), and the MSc and PhD in dentistry.

The committee is impressed with the enthusiasm directed at the renewal of the existing programs and for building graduate and research-intensive programs in the college. The committee is also encouraged by the interdisciplinary and interprofessional approach to graduate and research programming.

With regard to DMD proposal presented on January 26, 2019, the committee would suggest removing references to the previous 3+1 proposal, which had been presented to PPC under the previous dean, as this information led to confusion in the conversation. The committee was concerned that the timeline for implementation was perhaps too aggressive and that the year-by-year approach to the renewal could lead to cascading effects if one year's changes do not go well, and could result in delays to the subsequent year's program renewal. That said, the committee compliments the college on the work it has undertaken to renew its curriculum, and on the collaborative approach to the development of the proposal, especially with regard to ensuring the engagement of students and faculty in the process.

With regard to the notices of intent for the MSc in Dental Public health, and the PhD in Human

Health and Technology presented on February 25, 2019, the committee was impressed with the work that went into the proposals, and for the collaborative and engaging process for their development. The committee would suggest reconsidering the name of the PhD from "Human Health and Technology" as it did not convey that it was a program in dentistry. The name of the program is very important for branding, reputation, and recruitment. The committee also expressed some criticism about the use of informal language in both of the proposals, e.g. wet finger dentistry, and suggested avoiding such language.

For all three proposals, the committee recommends including further information on the financial viability of the programs, the proposed tuition rates, and the identification of risks and risk mitigation strategies. More information on the supports that will be provided to students, in particular to international students (in a college that has historically catered mainly to domestic students), would also be helpful. The committee also suggested elaborating on the alignment of the proposals with the strategic plans of the college.

On behalf of the committee, again, I would like to commend you on the work taking place in the college on renewing and revitalizing the undergraduate academic program, developing graduate programming, and building a strong and vibrant research program. Please do not hesitate to contact me if you have any questions.

Kind regards,

Dirk de Boer

c. Tony Vannelli, provost and vice-president academic
Roy Dobson, chair, academic programs committee of Council
Russell Isinger, registrar

UNIVERSITY OF SASKATCHEWAN
College of Agriculture
and Bioresources
DEPARTMENT OF FOOD AND BIOPRODUCT SCIENCES
AGBIO.USASK.CA

Dr. Petros Papagerakis
Associate Dean, Research & Associate Professor
College of Dentristy

April 22, 2019

Dear Dr. Papagerakis

It is my understanding that as part of a planned PhD program in Dentistry, you have inquired as to whether several of our graduate courses offered in our unit could be taken, as elective courses, by your students.

The two courses in question are: FDSC 898.3 Professional Skill in Scientific Communication and FDSC 888, Nutrigenomics Nutrient-Genome Interactions, both instructed by Dr. Christopher Eskiw. I'm very much in support of this option being made available to your students. Dr. Eskiw is an enthusiastic and effective instructor and we believe these courses will enhance your student's academic experience and skill development by receiving training in these important study areas.

It should be noted that these courses may be subject to enrollment restrictions, and so availability would be a consideration as it tends to be for most graduate courses.
Best of luck with your new PhD program!

Sincerely,

Darren Korber
Professor and Department Head,
Food and Bioproduct Sciences

UNIVERSITY OF SASKATCHEWAN
College of Arts and Science

Department of Mathematics and Statistics
142 McLean Hall - 106 Wiggins Road Saskatoon SK S7N 5E6 Canada
Ph: (306) 966-6081 Fx: (306) 966-6086
Email: office@math.usask.ca Web: http://math.usask.ca/

April 23, 2019

Dear Dr. Papagerakis,

It is my understanding that as part of a planned PhD program in Dentistry, you have included the following graduate courses from the Department of Mathematics and Statistics as elective courses for your program:

1. STAT 812: Computational Statistics,
2. STAT 834: Advanced Experimental Design,
3. STAT 845: Statistical Methods for Research,
4. STAT 850: Mathematical Statistics and Inference.

This is an excellent idea and the department is of the opinion that these courses will enhance your student's academic learning experience and skill developments in the area of Statistics.

It should be noted that these courses may be subject to enrollment restrictions, and so availability would be a consideration, as it tends to be for most graduate courses.

Best of luck with your new PhD program!

Sincerely,

Dr. Raj Srinivasan
Department Head
Department of Mathematics and Statistics

UNIVERSITY OF SASKATCHEWAN
College of Agriculture and Bioresources

Department of Food & Bioproduct Sciences
51 Campus Drive
Saskatoon SK S7N 5A8 Canada
Telephone: (306) 966-4980
Facsimile: (306) 966-8898

Dr. Petros Papagerakis
Associate Dean, Research & Associate Professor
College of Dentistry
April 20, 2019

Dear Dr. Papagerakis

I am happy to have FDSC 888: Nutrigenomics-Nutrient Genome Interactions and FDSC 898: Professional Skills in Scientific Communication included as course electives for future graduate students in Dentistry. This is an excellent opportunity for our students to build collaborative networks across campus as well as introduce them to new methods and ideas.

Sincerely,

Christopher Eskiw, Ph.D.
Assistant Professor
Department of Food and Bioproduct Sciences
College of Agriculture and Bioresources
University of Saskatchewan
Room 6E08, Agriculture Building
51 Campus Drive, Saskatoon SK
S7N 5A8
Phone: 306 966 2454
Fax: 306 966 8898

UNIVERSITY OF SASKATCHEWAN
Department of Computer Science
176 Thorvaldson Building
110 Science Place Saskatoon SK S7N 5C9 Canada
Telephone: (306) 966-4886 Facsimile: (306) 966-4884

Dr. Anthony Kusalik
April 22, 2019

Dr. Petros Papagerakis
Associate Dean, Research & Associate Professor
College of Dentistry
University of Saskatchewan

Re: new Ph.D. program in Dentistry

Dear Dr. Papagerakis:

I understand that, as part of a planned PhD program in Dentistry, you have inquired as to whether several of our graduate courses could be taken as elective courses by the students in the new program.

As the regular instructor of CMPT857, "Readings in Bioinformatics" I would like to state that students in this new program would be welcome in CMPT857. The course is designed to be accessible to any graduate student in the health, natural, or physical sciences. The success of the course in fact depends on having participants from a variety of disciplines -- the broader, the better. As such, having students in CMPT857 from this new Ph.D. program would benefit the course. Another class that would welcome students from a new Ph.D. program in Dentistry would be CMPT830, "Bioinformatics and Computational Biology". It is also designed to be accessible to students outside of Computer Science and is usually taught by Dr. Ian McQuillan.

I think that CMPT857 or CMPT830 would be useful courses to students in this new Ph.D. program as knowledge of bioinformatics is becoming very important in all aspects of health research. Further, we find that contacts among students made during the courses can help individual students with their thesis research. For example, a student from Math & Stats and a student from Dentistry, both taking CMPT857, can find that they can be of assistance to each other in conducting their respective research projects. Such connections might not otherwise develop given the "distance" between the two disciplines.

It should be noted that CMPT857 and CMPT830 may be subject to enrollment restrictions, so students in this new Ph.D. program in Dentistry would be well advised to register early in the term for either class.

I wish you success in your new Ph.D. program!

Sincerely,

Anthony Kusalik

Prof. Anthony Kusalik, Ph.D.

UNIVERSITY OF SASKATCHEWAN

Department of Biomedical Engineering

57 Campus Drive
Saskatoon SK S7N 5A9 Canada
Telephone: (306) 966-5443
Facsimile: (306) 966-5427

Date: April 26, 2019

Dear Dr. Papagerakis

It is my understanding that as part of a planned PhD program in Dentistry, you have inquired as to whether several of our graduate courses offered in our unit could be taken, as elective courses, by your students.

The courses in question are: BIOE 820 instructed by Dr. D Chen, et. al; BIOE 805 instructed by Dr. G. Sary; BIOE 806 instructed by Dr. A. Hedayat; and BIOE 850 instructed by Dr. D. Chapman. I'm very much in support of this option being made available to your students. We believe theses course will enhance your student's academic experience and skill development by receiving training in these important study areas.

It should be noted that these courses may be subject to enrollment restrictions, and so availability would be a consideration as it tends to be for most graduate courses.

Best of luck with your new PhD program!

Sincerely,

Daniel Chen, Ph.D., P.Eng.
Professor and Graduate Chair

UNIVERSITY OF SASKATCHEWAN

Library Requirements for New Programs and Major Revisions

This form is to be completed by the faculty member responsible for the program proposal in consultation with the Liaison Librarian from the University Library, University of Saskatchewan. Contact the appropriate Liaison Librarian for assistance.

Attach the completed form to the program proposal prior to submission to the Academic Programs Committee. Additional comments may also be attached if required.

1. Proposal Identification

   Full name of program: PhD – **Human Health and Technology Program – College of Dentistry**

   Short form (degree abbreviation): **PhD - HHT**

   Sponsoring Department/College: **College of Dentistry**

   Degree Level: Undergraduate: Graduate: **Graduate**

2. Library Resources

   2.1 Resources are/will be located mainly in the **Health Sciences Library**

   2.2 Comment on the adequacy of the current level of Library acquisitions in support of this discipline.

   The University of Saskatchewan Library currently supports a Doctor of Dental Medicine program and is well positioned to support a PhD program in Human Health and Technology. Besides an excellent foundation collection in dentistry, USask offers programs in public health, public policy and Indigenous studies. These programs are all supported by strong collections of library resources.

   2.4 What access is required to resources held elsewhere? (Identify additional costs for access e.g. networking of databases, consortial access to databases, document delivery options).

   There is no additional cost expected. The Library holds an interlibrary loan service in place, which can obtain book titles or journal articles not available from its collection.

   2.5 Will any resource re-allocation within the broad discipline be necessary to support this new program?

   No.

   2.6 What are the human resource requirements to support this program?
   (Does the Library have the subject expertise amongst its staff? Are more staff required to develop collections, provide user education, develop and promote web access to resources, etc.)

Additional human resources are not required to support this proposed program. The Library has a librarian responsible for the College of Dentistry, who is also responsible for the School of Public Health.

3. Additional Library Resources Required

3.1 What new subject areas of acquisition are needed to meet program requirements?

None, although current resources such as the databases “Arctic & Antarctic Regions” and the “Indigenous Studies” portal should be highlighted on the Dentistry Research Guide to encourage and facilitate access.

3.2 What new electronic resources/databases are required?

None.

3.3 Are there new/additional library technology requirements necessary to support this program?

No

3.4 Are there distance education service needs and costs?

No. Distance and Distributed Learning Services are available to students who are studying by distance, or on clinical placements.

3.5 Provide an estimated budget required for library resources to support this program annually.

Additional funds are not required to support this program.

4. Statement of Assessment of Library requirements
(Indicate Library capacity to support new program)
The University Library has a strong collection for dentistry, and decent collections for public health, public policy, and Indigenous studies, including Indigenous health. New monographs can be purchased with the current Dentistry monograph fund.

Date: April 23, 2019

Liaison Librarian’s Signature: 

Library Dean’s Signature: 

Faculty member (for the sponsoring college/dept): Dr. Douglas Brothwell, Professor and Dean

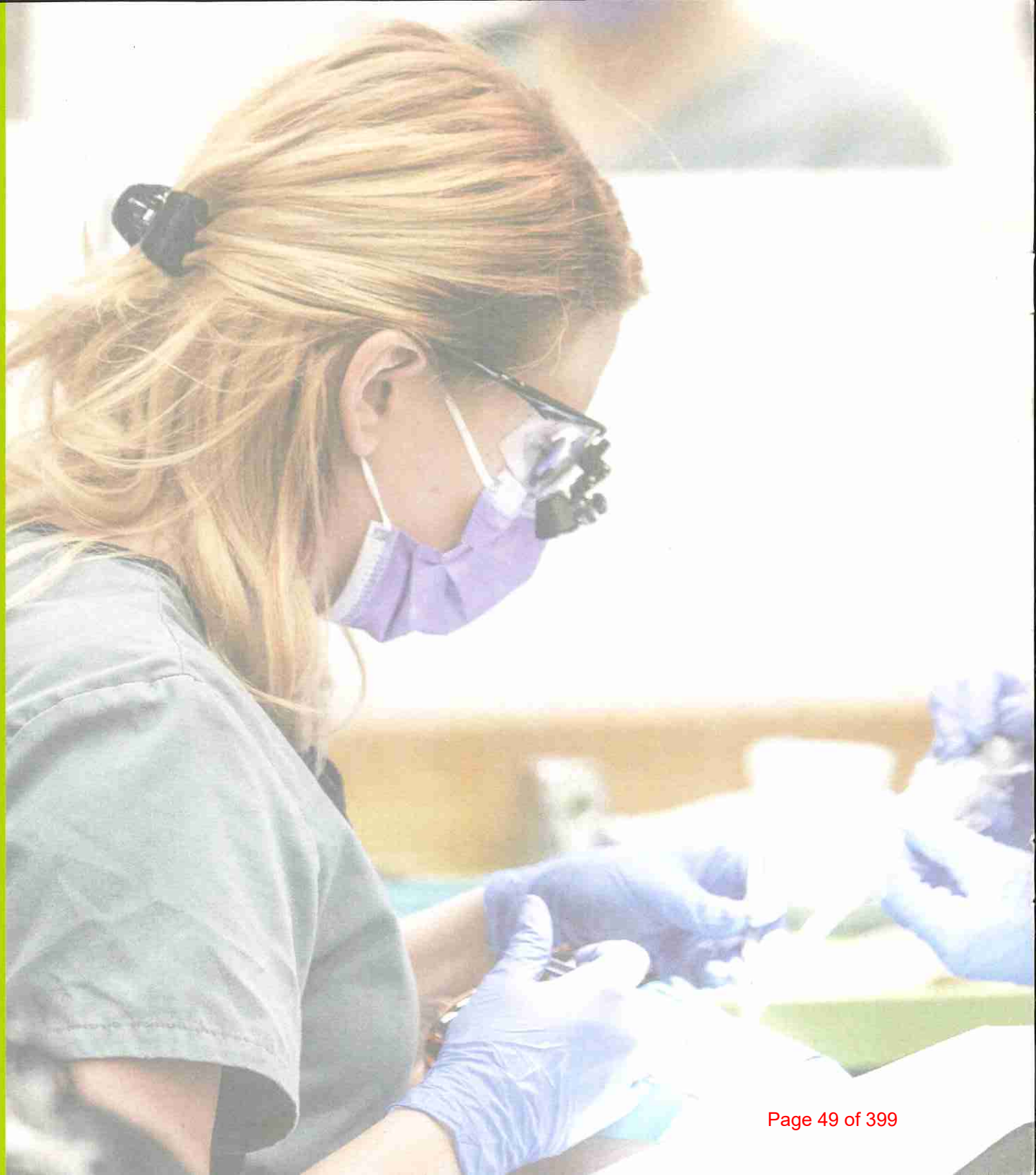
College of Dentistry Plan 2025

Building on Strength – Improving Tomorrow

UNIVERSITY OF SASKATCHEWAN
College of Dentistry
DENTISTRY.USASK.CA

Our Mission

To train oral health professionals to provide high quality oral health care to the people of Saskatchewan, and to advance clinical and scientific knowledge through research.



Our Vision

To serve as a leader in dental education, research, community outreach, engagement and professional support.

The College acknowledges that we are situated on Treaty 6 Territory and the Homeland of the Métis. We pay our respect to the First Nations and Métis ancestors of this place and reaffirm our relationship with one another.

Message from the Dean

"Through inclusive community care, the USask College of Dentistry will champion respectful, patient-focused oral health among diverse individuals and groups where age, culture, geography, or socio-economic factors may influence access to care."

College of Dentistry Plan 2025
Building on Strengths — Improving Tomorrow

Inequalities in oral health status and inequities in dental healthcare access are among Canada's most challenging dental problems. While the majority of people in the country take oral health for granted, far too many Canadians are unable to eat, speak, smile, or socialize without difficulty, pain, or embarrassment.

The University of Saskatchewan (USask) College of Dentistry is proud to unveil a seven-year plan designed to help guide our efforts and sharpen our focus as we address oral health concerns that go far beyond the aesthetic of solid teeth and a bright smile.

The college's reputation for training some of the top clinician dentists in Canada is not taken lightly. Since the very first Doctor of Dental Medicine classes at USask started in 1968, the college has been committed to offering the small class sizes and appropriate patient pools required to produce some of the most experienced dental graduates in North America.

However, this strength has also been our greatest weakness; this exclusive focus on a traditional model of dental education has led to limited development in essential areas of research and service. As such, it is time for the College of Dentistry to expand its leadership role with a forward-facing vision.

Strategic Plan 2025, Building on Strengths — Improving Tomorrow, intentionally maintains our historic areas of strength and allows us to build upon them. Throughout the next seven years, the college will work toward establishing a national and international reputation for excellence in a targeted, single area of focus—inclusive community care.

Through inclusive community care, the USask College of Dentistry will champion respectful, patient-focused oral health among diverse individuals and groups where age, culture, geography, or socio-economic factors may influence access to care.

On behalf of our dedicated faculty and staff, I am proud to provide this summary of our strategic priorities and plans for the next seven years—our roadmap to a better tomorrow for both the dental school and the priority populations who must be included in the process of addressing Canada's most challenging dental problems.

Dr. Doug Brothwell
Dean, College of Dentistry
University of Saskatchewan

Strategic Priorities

Priority 1

Become Canada's leader in Inclusive Community Care

Priority 2

Expand educational programming

Priority 3

Expand research capacity and output

Priority 4

College revitalization and enhancement

Priority 5

Uplift the needs, preferences and aspirations of Indigenous people

Strategic Priority #1

Become Canada's leader in Inclusive Community Care

Woven into the fabric of the College of Dentistry is our commitment to community engagement. We will improve the quality of life of those populations most affected by the social determinants of health.

As a professional college that serves a range of communities locally and provincially, it is essential that we engage priority populations in defining their oral health care goals and expectations in order to better provide personalised care. Approaching oral health care through community engagement will confront historic injustices and inequities regarding their oral health care status and access to services. Together, we will work to discover solutions.

Components:

1.1 Establish a network of clinics serving priority populations

Key Milestones:
- Open a dental clinic at the newly-established Prince Albert campus that will be fully operational by 2020-2021
- Launch five Indigenous dental clinics in defined priority communities locally and provincially by 2020-2021
- Establish an additional five Indigenous dental clinics in surrounding areas by 2023-2024

1.2 Expand General Practice Residency / Fellowship Program (GPR) numbers

Key Milestones:
- Accept three GPR residents in the accredited program by 2021-2022
- Double our admission numbers in the next two years, adding another three residents by 2023-2024
- Increase the program to ten residents by 2025-2026

1.3 Redefine dental care from an Indigenous perspective

Key Milestones:
- Establish ongoing community partnerships with First Nation and Métis leadership to discover oral health care solutions based on Indigenous ways of knowing
- Use a community-engaged research approach to learn about how we can best provide services that are respectful

1.4 Establish Standards of Care and Best Practices for priority populations

Key Milestones:
- Establish a combination of community-engaged research methods and precision health-care research methods
- Produce five peer-reviewed Standards of Care and Best Practices publications annually starting in 2021-2022

While access to needed medical care is a 'right' in Canada, access to needed dental care remains a 'privilege.' Many Canadians have little or no access to needed dental care.

Strategic Priority #2

Expand educational programming for undergraduate and graduate students

We remain proud of our long history of training skilled clinicians who serve communities in Saskatchewan and beyond. To move boldly forward we will diversify our educational offerings and increase our total student numbers.

Components:

2.1 Increase the number of undergraduate Doctor of Dental Medicine (DMD) students

Key Milestone:
- Expand program capacity by increasing the number of undergraduate students from 28 to 34 by 2018-2019

2.2 Establish a Bachelor of Science in Dentistry (BSc DENT) program

Key Milestone:
- Launch the program by intaking the first five BSc DENT students by 2019-2020

2.3 Implement a Certificate in Dental Assisting Program

Key Milestones:
- Initiate the program by intaking the first 30 students by 2018-2019
- Establish an Accredited USask Certificate program by 2019-2020

2.4 Implement an International Dentist Degree program (IDDP)

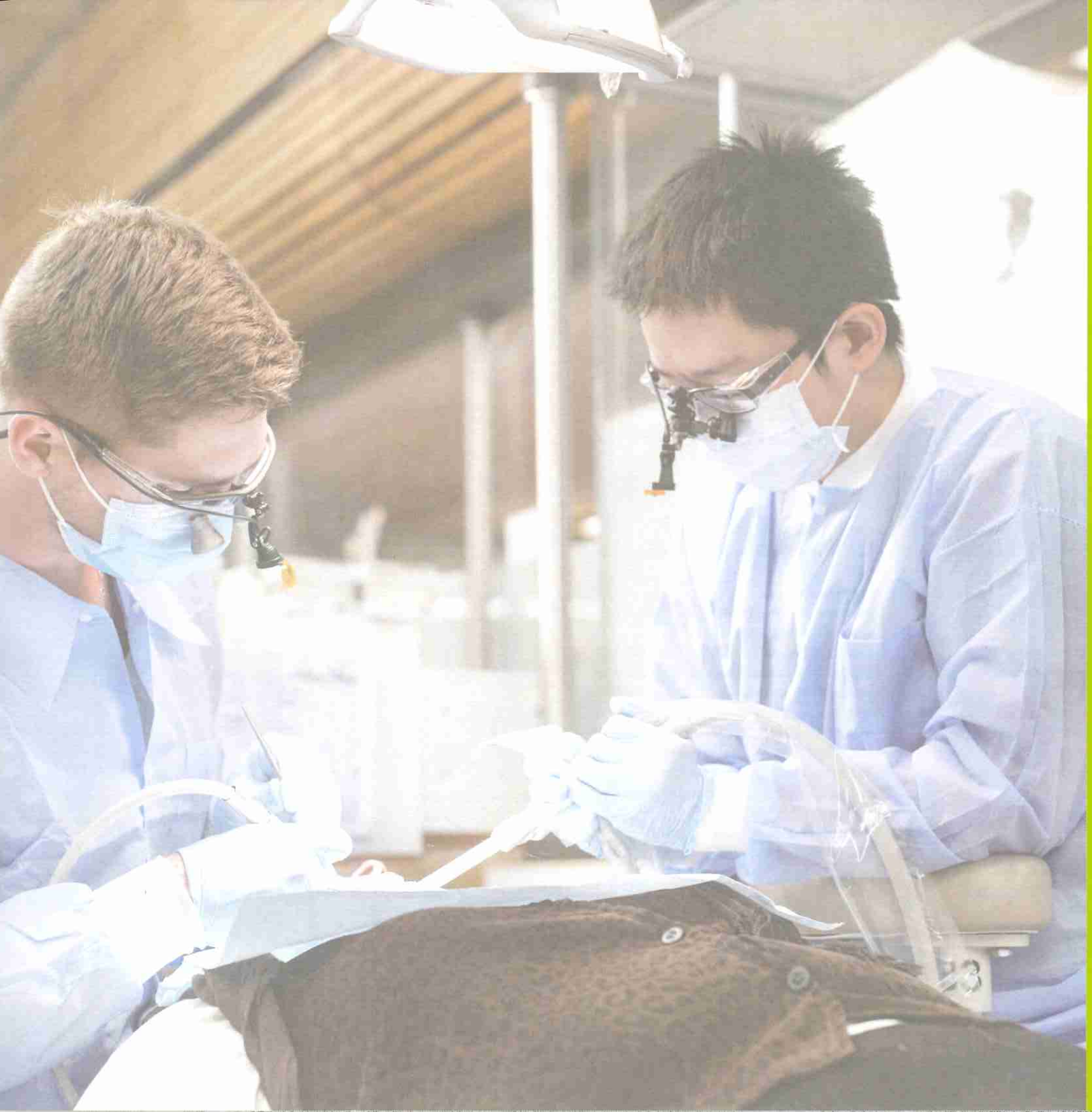
Key Milestone:
- Introduce the program by admitting three IDDP students by 2019-2020

2.5 Establish two Masters of Science Dental Speciality graduate programs

Key Milestones:
- Launch an MSc Dental Public Health program, admitting three students annually by 2021-2022
- Launch an MSc Pediatric Dentistry program, admitting three students annually by 2022-2023

2.6 Establish a PhD graduate program in Human Health and Technology

Key Milestone:
- Admit the first cohort of PhD students into the newly established program in 2019-2020



The burden of suffering from dental disease is not evenly distributed in Canada. It is now being born by a small proportion of the population – perhaps 25%.

Strategic Priority #3

Expand research capacity and output

Historically operated as a professional training college, the College of Dentistry continues to bolster and expand research capacity in order to better serve the dental profession and communities in Saskatchewan and around the world. Providing our students, researchers, and faculty members with the tools to conduct research in the college involves increased funding opportunities, expanded educational programming, as well as clear guidelines for research expectations.

Through our expansion, we will build a national and international reputation as a clinical training and research-intensive college, increasing our number of research-active faculty and graduate students, and growing our research capacity, productivity, and output.

Components:

3.1 Expand faculty research capacity and productivity by recruiting top researchers, increasing the number of PhD-trained faculty

Key Milestones:
- Hire a research facilitator to support college research endeavours and co-ordinate college research output by 2018-2019
- Increase research capacity by increasing our existing faculty complement by four PhD faculty members by 2018-2019
- Define research goals in faculty assignment of duties

3.2 Establish new undergraduate and graduate programs

Key Milestones:
- Develop a PhD program and combined PhD/DMD starting in 2019-2020
- Introduce two MSc Dental Speciality programs, admitting six students annually by 2023-2024
- Launch a BSc DENT program, intaking its first five students by 2019-2020

3.3 Increase college support for research

Key Milestones:
- Increase start-up research funds for existing and future research proposals
- Establish annual funding of $50,000 for BSc DENT students to use towards undergraduate research initiatives
- Introduce an Interprofessional Research Cluster in Oral Health and Precision Medicine, receiving approval for the new research centre by 2020-2021
- Increase research grant funding to provide our faculty with the capacity to expand or initiate current and future research projects
- Increase the quality and quantity of peer-reviewed publications produced by our faculty members

One of the hallmarks of the dental profession is our solid research base. We will expand that base in a meaningful way

Strategic Priority #4

College revitalization and enhancement

Established in 1965, the College of Dentistry was the first institution in the province to offer a fully accredited dental program, providing direct patient care through the Student Dental Clinic and accommodating over 10,000 visits annually.

In order to continue training Canada's top clinical dentists with the necessary skills to service communities now and in the future, it is fundamental that we modernize the infrastructure, equipment, and programming in our college to meet the educational standards of the profession and our students. This investment demonstrates our commitment to maintaining best practices in the post-secondary sector and dental school education.

Components:

4.1 Renovate and reequip the college, relocating the preclinical simulation labs to within the Dental Clinic Building

Key Milestone:
- Complete the renovation and reequipping of the Dental Clinic Building for 2023-2024

4.2 Change the delivery of clinical dental education to a Comprehensive Care model

Key Milestones:
- Launch and utilize the Comprehensive Care model for year-four students by 2019-2020
- Expand use of the Comprehensive Care model to year-three students by 2021-2022

4.3 Enhance student experience and wellness within the educational program

Key Milestones:
- On an annual basis, facilitate two student wellness sessions

4.4 Increase the use of evidence-based teaching and educational technology

Key Milestone:
- On an annual basis, facilitate three faculty-development sessions regarding the use of teaching technology

4.5 Provide faculty-development in best educational practices

Key Milestone:
- On an annual basis, facilitate five faculty-development sessions about best educational practices

4.6 Provide faculty-development in research methods and opportunities

Key Milestone:
- On an annual basis, facilitate five faculty-development sessions regarding research methods

November 2018
Accreditation
Requirement:

That the aging dental clinic, preclinical lab and simulation lab be renovated

Strategic Priority #5

Uplift the needs, preferences, and aspirations of Indigenous people

The University of Saskatchewan and the University Plan 2025 mark a path forward in committing ourselves to lead in a good way, dedicating support and resources to uplifting Indigenous populations locally and provincially. The College of Dentistry will lead reconciliation in the dental profession and be an institution of first choice for Indigenous students, staff, and faculty.

By virtue of our clinical training program, the college provides direct clinical care to Indigenous patients in our communities. By incorporating traditional ways of knowing into our educational programming, and partnering respectfully with Indigenous communities and organizations, we will better meet the oral health care needs and preferences of Indigenous people.

Components:

5.1 Increase Indigenous representation in the College

Key Milestones:
- Increase Indigenous Equity Access DMD student admission to 6/34 by 2018-2019
- Establish Indigenous Equity Access CDA student admission of 5/30 by 2019-2020
- Diversify college faculty by recruiting one Indigenous faculty member by 2017-2018, and two by 2019-2020
- Diversify and expand the college's support team by adding five Indigenous staff members by 2021-2022

5.2 Incorporate Indigenous content into undergraduate and graduate curriculum

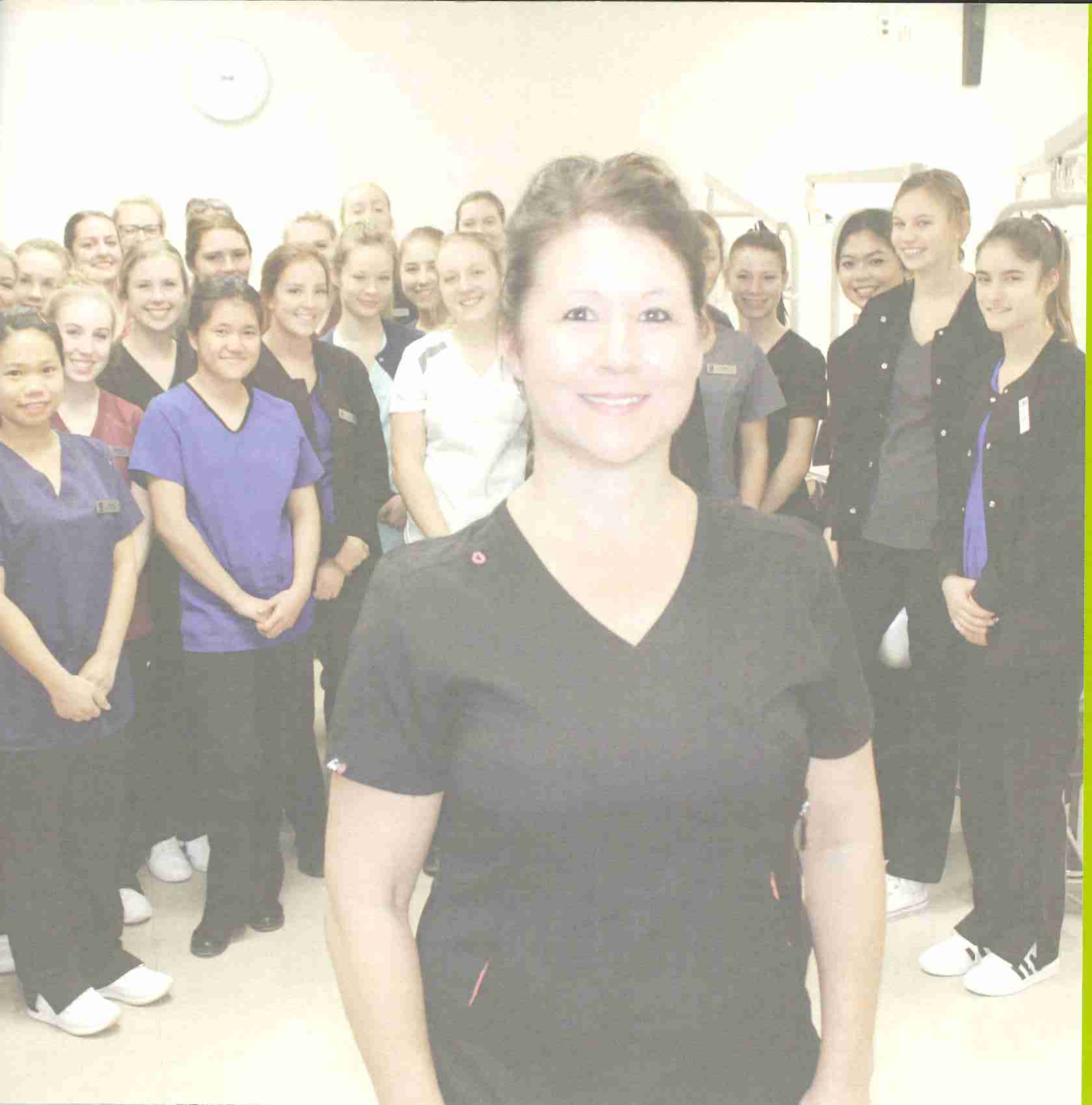
Key Milestones:
- Introduce one core course in Indigenous Canadian history and Indigenous health beliefs
- Incorporate Indigenous content, perspectives, and traditional ways of knowing within all dentistry courses

5.3 Provide distance educational options for partner Indigenous communities

Key Milestone:
- Provide in-community Dental Assistant training in northern First Nations by 2020-2021

5.4 Establish community-engaged research with Indigenous communities and organizations

Key Milestone:
- Set the expectation that all Indigenous research occurs within the community-engaged research framework in order to effectively learn about how we can best offer services that are respectful



"Reconciliation," said Senator Murray Sinclair, Chair of the Truth and Reconciliation Commission, "is about forging and maintaining respectful relationships. There are no shortcuts."

Framework

UNIVERSITY PLAN

THE UNIVERSITY THE WORLD NEEDS

Nīkānītān manācihitowinihk
Ni manachīhitoonaan

2025 ASPIRATIONS

Transformative Decolonization Leading to Reconciliation. Indigenous students, faculty, staff, and communities are holistically strengthening the spirit and methodologies we inhabit.

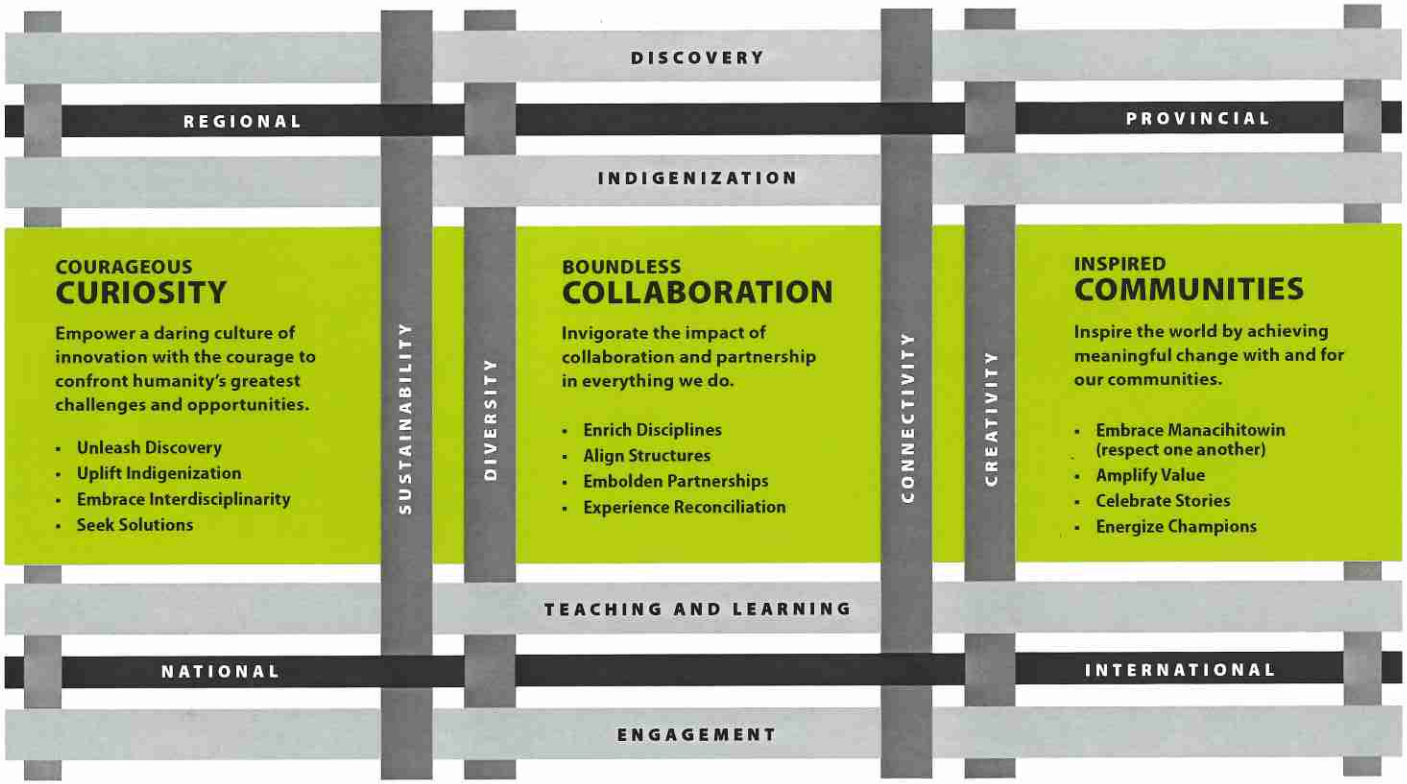
Productive Collaboration. Community, private-sector, and international partnerships animate every facet of our research enterprise.

Meaningful Impact. Our knowledge, discoveries, and innovations are helping communities achieve their social, cultural, and economic goals.

Distinguished Learners. Our graduates are among the most inventive, collaborative, and sought-after in Canada and around the world.

Global Recognition. Our research, graduates, academic programming, and reputation are recognized as world-class.

The College of Dentistry Plan 2025 is built upon the visionary framework of the University Plan 2025. We are proud of our role within the University that the world needs.



To read the full university plan visit plan.usask.ca

UNIVERSITY OF SASKATCHEWAN

UNIVERSITY OF SASKATCHEWAN
College of Dentistry
DENTISTRY.USASK.CA

105 Wiggins Rd,
Saskatoon, SK S7N 5E4
Phone: (306) 966-5667

UNIVERSITY OF SASKATCHEWAN

COURSE SYLLABUS

COURSE TITLE:	Organogenesis of Complex Systems: from Development to Diseases		
COURSE CODE:	DEN 801.3	**TERM:**	2
COURSE CREDITS:	3	**DELIVERY:**	Winter 2021
CLASS SECTION: **CLASS LOCATION:** **CLASS TIME:** **WEBSITE:**	N/A College of Dentistry 10.30-12.00 Tuesdays and Thursdays	**START DATE:** **LAB LOCATION:** **LAB TIME:**	January 4, 2021 N/A

Course Overview

This course is composed from 3 modules. Classes will be held twice a week (1 hour per lecture). First, the course will consist of two general lectures on signaling to provide background and one basic lecture on mathematical modeling and development on stem cell and regeneration topics (module 1, Weeks 1-4). Then, there will be 8 lectures (module 2, weeks 5 - 8) on organogenesis. A final module on preparation of an CIHR- ,NSERC or NIH-style mini-proposal (module 3, weeks 9-12).

Learning Outcomes

By the end of this course, students will be able to learn: 1-the basic principles of systems biology approaches applied to organ development, disease and treatment; 2- How to write a scientific proposal for tri-agency funding.

Class Schedule

Week 1-4 Module 1	**STEM CELLS LECTURES & TOPICS**	**Readings**	**Evaluation Due Date**
1	Course Introduction and Lecture "Introduction to Cell: Cell Signaling, Hedgehog and Wnt signaling".	Biochemistry of Signal Transduction and Regulation. Wiley-VCH; 5th Edition, 2014. *Chapters 1-3*	TBD
1	"Notch, FGF and Bmp Signaling"	Biochemistry of Signal Transduction and Regulation. Wiley-VCH; 5th Edition, 2014. *Chapters 4-5*	TBD
2	"Modeling Organogenesis"	Biochemistry of Signal Transduction and Regulation. Wiley-VCH; 5th Edition, 2014. *Chapter 6*	TBD
2	"Introduction to Stem Cell Biology"	Biomaterials and Regenerative Medicine,	TBD

		Edited by Peter X. Ma, Cambridge Eds. 2015. *Part I – Introduction*	
3	"Human Embryonic and Adult Stem Cells"	Biomaterials and Regenerative Medicine, Edited by Peter X. Ma, Cambridge Eds. 2015. *Chapter 2*	TBD
3	"Stem Cell Properties as Determined Through the Study of Hematopoietic and Mesenchymal Stem Cells"	Biomaterials and Regenerative Medicine, Edited by Peter X. Ma, Cambridge Eds. 2015. *Chapters 3, 6*	TBD
4	"Epithelial Stem Cells"	Biomaterials and Regenerative Medicine, Edited by Peter X. Ma, Cambridge Eds. 2015. *Chapter 4*	TBD
4	"Cancer Stem Cells"	Biomaterials and Regenerative Medicine, Edited by Peter X. Ma, Cambridge Eds. 2015. *Chapter 4*	TBD

Week 5-8 Module 2	**Organogenesis – LECTURES & TOPICS**	**Readings**	**Evaluation Due Date**
5	"Tooth Embryonic Development"	Ten Cate's Oral Histology Elsevier Editions. 9th Edition, 2017. Edited by A. Nanci. *Chapter 1*	TBD
5	"Amelogenesis"	Ten Cate's Oral Histology Elsevier Editions. 9th Edition, 2017. Edited by A. Nanci. *Chapter 2*	TBD
6	"Odontogenesis"	Ten Cate's Oral Histology Elsevier Editions. 9th Edition, 2017. Edited by A. Nanci. *Chapter 3*	TBD
6	Periodontal Tissues	Ten Cate's Oral Histology Elsevier Editions. 9th Edition, 2017. Edited by A. Nanci. *Chapter 4*	TBD
7	Genetic Dental Diseases	Ten Cate's Oral Histology Elsevier Editions. 9th Edition, 2017. Edited by A. Nanci. *Chapter 5*	TBD
7	Dental Tissues Regeneration	Ten Cate's Oral Histology Elsevier Editions. 9th Edition, 2017. Edited by A. Nanci. *Chapter 6*	TBD
8	Evolution of Dental Tissues	Ten Cate's Oral Histology	TBD

		Elsevier Editions. 9th Edition, 2017. Edited by A. Nanci. *Chapter 7*	
8	Q & A (review lecture - Module 1 & 2)	N/A	TBD
Week 9-12 Module 3	**Organogenesis – LECTURES & TOPICS**	**Readings**	**Evaluation Due Date**
9	Mini-proposals: Explain the Concept, Discussion & Questions/Answer Session	The grant application writer's workbook; National Institute of Health, 2019.	TBD
9	No class – Work on Mini-proposals **Oral Presentations**		TBD
10	Mini-proposal concept (student-led oral presentation)		TBD
10	Mini-proposal concept (student-led oral presentation)		TBD
11	Mini-proposal concept (student-led oral presentation)		TBD
11	Mini-proposal concept (student-led oral presentation)		TBD
12	No class – Work on Mini-proposals **Writing** (5-maximum pages, including background, specific aims, rationale and research approach and potential pitfalls).		TBD

Instructor Information

Dr. Petros Papagerakis DDS PhD (Course Director)
Email: petros.papagerakis@usask.ca
Phone: 306-966-5116
Office: 4D01.10
Office hours: 12:00 PM to 2:00 PM (every Friday during the course period)

Other instructors
Other faculty members with additional expertise as needed.

Evaluation Components and Scoring

The course director will grade students as follows:

30% Oral presentations of mini-proposals (student-led oral presentation)

- By the end of the second module (week 8), students must submit their topic of presentation to the course director via email.
- First day of Module 3, a draw will be made to decide the order of the presentations.
- Evaluation criteria:

- Content, organization
- Delivery and effectiveness
- Responses to questions

40% Written mini-proposal (5-maximum pages, including background, specific aims, rationale and research approach and potential pitfalls).

30% Participation

- Each student will be expected to bring a positive learning attitude, ability to formulate questions and to effectively and professionally respond to others' comments and questions and giving feedback to fellow students on their presentations

Participation is 30 % of final grade and will be evaluated using the following rubric.

Grade	Criteria
Fail (< 60)	• Absent • Does not demonstrate involvement in discussions
Poor (60-69)	▪ Present, not disruptive ▪ Tries to respond when called upon but does not offer much ▪ Demonstrates very infrequent (maybe once/class) involvement in discussions
Satisfactory to good (70-79)	▪ Demonstrates adequate preparation; knows basics but does not show evidence of trying to interpret or analyze them ▪ Offers straightforward information (e.g. straight from an article or textbook) without elaboration or very infrequently ▪ Does not offer to contribute to discussions, but contributes to a moderate degree when called upon ▪ Demonstrates sporadic involvement
Very good (80-89)	▪ Demonstrates good preparation; knows facts or articles well; has thought through their implications ▪ Offers interpretations and analyses of materials (more than just facts) to class ▪ Contributes well to discussions in an ongoing way: responds to other students' points, thinks through own points, questions others in a constructive way, offers and supports suggestions that may be counter to the majority opinion
Exceptional (90-100)	▪ Demonstrates excellent preparation; has analyzed materials such as articles exceptionally well and can relate them to other materials ▪ Offers analysis, synthesis, and evaluation of materials; e.g. can critically analyze a class discussion to state the main points ▪ Contributes in a very significant way to ongoing discussion: keeps analyses focused, responds very thoughtfully to other students' comments, contributes to the cooperative argument-building, suggests alternative ways of approaching material and can lead a discussion ▪ Demonstrates ongoing active involvement

University of Saskatchewan Grading System (for graduate courses)

The following describes the relationship between literal descriptors and percentage scores for courses in the College of Graduate and Postdoctoral Studies:

90-100 Exceptional

A superior performance with consistent strong evidence of

- a comprehensive, incisive grasp of subject matter;
- an ability to make insightful, critical evaluation of information;
- an exceptional capacity for original, creative and/or logical thinking;
- an exceptional ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
- an exceptional ability to analyze and solve difficult problems related to subject matter.

80-89 Very Good to Excellent

A very good to excellent performance with strong evidence of

- a comprehensive grasp of subject matter;
- an ability to make sound critical evaluation of information;
- a very good to excellent capacity for original, creative and/or logical thinking;
- a very good to excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
- a very good to excellent ability to analyze and solve difficult problems related to subject matter.

70-79 Satisfactory to Good

A satisfactory to good performance with evidence of

- a substantial knowledge of subject matter;
- a satisfactory to good understanding of the relevant issues and satisfactory to good familiarity with the relevant literature and technology;
- a satisfactory to good capacity for logical thinking;
- some capacity for original and creative thinking;
- a satisfactory to good ability to organize, to analyze, and to examine the subject matter in a critical and constructive manner;
- a satisfactory to good ability to analyze and solve moderately difficult problems.

60-69 Poor

A generally weak performance, but with some evidence of

- a basic grasp of the subject matter;
- some understanding of the basic issues;
- some familiarity with the relevant literature and techniques;
- some ability to develop solutions to moderately difficult problems related to the subject matter;
- some ability to examine the material in a critical and analytical manner.

<60 Failure

An unacceptable performance.

Late Assignments

n/a

Criteria That Must Be Met to Pass

- Students must obtain a grade of 70% to pass.

Attendance Expectations

Students should attend all class lectures and presentations.

Integrity Defined (from the Office of the University Secretary)

The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students should read and be familiar with the Regulations on Academic Student Misconduct (http://www.usask.ca/secretariat/student-conduct-appeals/Student%20Academic%20Misconduct%20Regulations%20APPROVED%20JUNE%2023%20in%20effect%20JAN%201%202017%20-%20With%20Fillable%20Form.pdf) as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals (http://www.usask.ca/secretariat/student-conduct-appeals/StudentNon-AcademicMisconduct.pdf)

For more information on what academic integrity means for students see the Student Conduct & Appeals section of the University Secretary Website at: http://www.usask.ca/secretariat/student-conduct-appeals/index.php

Examinations with Access and Equity Services (AES)

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Access and Equity Services (AES) if they have not already done so. Students who suspect they may have disabilities should contact AES for advice and referrals. In order to access AES programs and supports, students must follow AES policy and procedures. For more information, check www.students.usask.ca/aes, or contact AES at 306-966-7273 or aes@usask.ca.

Students registered with AES may request alternative arrangements for mid-term and final examinations. Students must arrange such accommodations through AES by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by AES.

Student Supports

Student Learning Services
Student Learning Services (SLS) offers assistance to U of S undergrad and graduate students. For information on specific services, please see the SLS web site http://library.usask.ca/studentlearning/.

Student and Enrolment Services Division
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UNIVERSITY OF SASKATCHEWAN

COURSE SYLLABUS

COURSE TITLE:	Proteomics- Oral Clinical Applications		
COURSE CODE:	DEN 802.3	**TERM:**	1
COURSE CREDITS:	3	**DELIVERY:**	
CLASS SECTION: **CLASS LOCATION:** **CLASS TIME:** **WEBSITE:**	N/A College of Dentistry Thursday; 9:30 – 12:30 PM	**START DATE:** **LAB LOCATION:** **LAB TIME:**	September 10, 2020 2D01

Course Overview

The course will begin with an introductory lecture defining the goals of proteomics, and discussing two typical workflows and essential theories in acquiring proteomics data for scientific research. The following two lectures will be practical training, in which the student will acquire hands-on experience working with the analytical instrumentation most commonly used in proteomics. In the remaining seminars, each student in consultation with the course director will select recent publications related to the field of applied proteomics, present them to the group and lead a discussion with classmates.

Learning Outcomes

By the end of this course, students will be able to describe and summarize the key activities involved in proteomics studies applied to biochemical and life sciences research. They will be capable to recognize common experimental setup used for proteomics research, and have conducted experiments that generate mass spectrometric proteomics data. Finally, students will be able to review, explain and critique the latest applications of proteomics in life sciences and health related research.

Class Schedule

Week	Module	Readings	Evaluation Due Date
1	Lecture - Goals and Workflows of Proteomics	1. Mass Spectrometry-based proteomics. Ruedi Aebersold and Matthias Mann; Nature 422, 198-	TBD

		207 (13 March 2003). DOI:10.1038/nature01511 2. Proteomics by Mass Spectrometry: Approaches, Advances, and Applications. John R. Yates, Cristian I. Ruse, and Aleksey Nakorchevsky; Annual Review of Biomedical Engineering, Vol. 11: 49-79. DOI: 10.1146/annurev-bioeng-061008-124934 3. Mass spectrometry in proteomics. Ruedi Aebersold and David R. Goodlett; Chemical reviews 101.2 (2001): 269-296. DOI:10.1021/cr990076h	
2	Lab – analytical instrumentation – Classical Proteomics instrumentation.	1. Mass Spectrometry-based proteomics. Ruedi Aebersold and Matthias Mann; Nature 422, 198-207 (13 March 2003). DOI:10.1038/nature01511 2. Proteomics by Mass Spectrometry: Approaches, Advances, and Applications. John R. Yates, Cristian I. Ruse, and Aleksey Nakorchevsky; Annual Review of Biomedical Engineering, Vol. 11: 49-79. DOI: 10.1146/annurev-bioeng-061008-124934 3. Mass spectrometry in proteomics. Ruedi Aebersold and David R. Goodlett; Chemical reviews 101.2 (2001): 269-296. DOI:10.1021/cr990076h	TBD

3	Lab – analytical instrumentation – Mass spectrometry instrumentation.	1. Mass Spectrometry-based proteomics. Ruedi Aebersold and Matthias Mann; Nature 422, 198-207 (13 March 2003). DOI:10.1038/nature01511 2. Proteomics by Mass Spectrometry: Approaches, Advances, and Applications. John R. Yates, Cristian I. Ruse, and Aleksey Nakorchevsky; Annual Review of Biomedical Engineering, Vol. 11: 49-79. DOI: 10.1146/annurev-bioeng-061008-124934 3. Mass spectrometry in proteomics. Ruedi Aebersold and David R. Goodlett; Chemical reviews 101.2 (2001): 269-296. DOI:10.1021/cr990076h	TBD
4	Seminar 1 (student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the seminar, the manuscript will be distributed to the group.	TBD
5	Seminar 2 (student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the seminar, the manuscript will be distributed to the group.	TBD
6	Seminar 3 (student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the seminar, the manuscript will be distributed to the group.	TBD
7	Seminar 4 (student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the	TBD

		seminar, the manuscript will be distributed to the group.	
8	Seminar 5 (student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the seminar, the manuscript will be distributed to the group.	TBD
9	Seminar 6 (student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the seminar, the manuscript will be distributed to the group.	TBD
10	Seminar 7 (student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the seminar, the manuscript will be distributed to the group.	TBD

Instructor Information

Dr. Walter Siqueira DDS PhD
Email: walter.siqueira@usask.ca
Phone: 3069661920
Office: 2A50.4
Office hours: 12:00 PM to 2:00 PM (every Friday during the course period)

Evaluation Components

The course director will grade students as follows.

50% Presentation on an advanced topic in proteomics

- By the end of the third week, students must submit their topic of presentation to the instructor via email.
- In the first day of class a draw will be made to decide the order of presentation.
- Evaluation criteria:
    - Content, organization
    - Delivery and effectiveness
    - Responses to questions

20% Exam

- Two-hour final exam based on all course materials including content covered in the presentations given by students.

30% Participation

- Discussions associated with the presentation of individual topics will provide an opportunity for students to apply knowledge regarding proteomics clinical application.

Each student will be expected to bring a positive learning attitude, ability to formulate questions and to effectively and professionally respond to others' comments and questions and give feedback to fellow students on their presentations.

Participation is 30 % of final grade and will be evaluated using the following rubric.

Grade	Criteria
Fail (< 60)	• Absent • Does not demonstrate involvement in discussions
Poor (60-69)	▪ Present, not disruptive ▪ Tries to respond when called upon but does not offer much ▪ Demonstrates very infrequent (maybe once/class) involvement in discussions
Satisfactory to good (70-79)	▪ Demonstrates adequate preparation; knows basics but does not show evidence of trying to interpret or analyze them ▪ Offers straightforward information (e.g. straight from an article or textbook) without elaboration or very infrequently ▪ Does not offer to contribute to discussions, but contributes to a moderate degree when called upon ▪ Demonstrates sporadic involvement
Very good (80-89)	▪ Demonstrates good preparation; knows facts or articles well; has thought through their implications ▪ Offers interpretations and analyses of materials (more than just facts) to class ▪ Contributes well to discussions in an ongoing way: responds to other students' points, thinks through own points, questions others in a constructive way, offers and supports suggestions that may be counter to the majority opinion
Exceptional (90-100)	▪ Demonstrates excellent preparation; has analyzed materials such as articles exceptionally well and can relate them to other materials ▪ Offers analysis, synthesis, and evaluation of materials; e.g. can critically analyze a class discussion to state the main points ▪ Contributes in a very significant way to ongoing discussion: keeps analyses focused, responds very thoughtfully to other students' comments, contributes to the cooperative argument-building, suggests alternative ways of approaching material and can lead a discussion ▪ Demonstrates ongoing active involvement

University of Saskatchewan Grading System (for graduate courses)

The following describes the relationship between literal descriptors and percentage scores for courses in the College of Graduate and Postdoctoral Studies:

90-100 Exceptional

A superior performance with consistent strong evidence of

- a comprehensive, incisive grasp of subject matter;
- an ability to make insightful, critical evaluation of information;
- an exceptional capacity for original, creative and/or logical thinking;
- an exceptional ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
- an exceptional ability to analyze and solve difficult problems related to subject matter.

80-89 Very Good to Excellent

A very good to excellent performance with strong evidence of

- a comprehensive grasp of subject matter;
- an ability to make sound critical evaluation of information;
- a very good to excellent capacity for original, creative and/or logical thinking;
- a very good to excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
- a very good to excellent ability to analyze and solve difficult problems related to subject matter.

70-79 Satisfactory to Good

A satisfactory to good performance with evidence of

- a substantial knowledge of subject matter;
- a satisfactory to good understanding of the relevant issues and satisfactory to good familiarity with the relevant literature and technology;
- a satisfactory to good capacity for logical thinking;
- some capacity for original and creative thinking;
- a satisfactory to good ability to organize, to analyze, and to examine the subject matter in a critical and constructive manner;
- a satisfactory to good ability to analyze and solve moderately difficult problems.

60-69 Poor

A generally weak performance, but with some evidence of

- a basic grasp of the subject matter;
- some understanding of the basic issues;
- some familiarity with the relevant literature and techniques;
- some ability to develop solutions to moderately difficult problems related to the subject matter;

- some ability to examine the material in a critical and analytical manner.

<60 Failure

An unacceptable performance.

Required Resources

Recommended Books:

1. Yates JR 3rd. Recent technical advances in proteomics. *F1000Res*. 2019;8:F1000 Faculty Rev-351. Published 2019 Mar 29. doi:10.12688/f1000research.16987.1
2. Mass Spectrometry, A Textbook. Gross, Jürgen H. 2017 Springer

Late Assignments

n/a

Criteria That Must Be Met to Pass

- Students must obtain a grade of 70% to pass.

Attendance Expectations

Students should attend all class lectures

Integrity Defined (from the Office of the University Secretary)

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UNIVERSITY OF SASKATCHEWAN

COURSE SYLLABUS

COURSE TITLE:	Advanced Oral Biology		
COURSE CODE:	DEN 803.3	**TERM:**	2
COURSE CREDITS:	3	**DELIVERY:**	
CLASS SECTION:	N/A	**START DATE:**	January 4, 2021
CLASS LOCATION:	College of Dentistry	**LAB**	N/A
CLASS TIME:	Monday; 9:30 – 12:30	**LOCATION:**	N/A
WEBSITE:	N/A	**LAB TIME:**	N/A

Course Overview

The course will work as a foundational course for oral biology science. This course will comprehensively discuss methodology, oral biology techniques and their day-to-day use in the lab and clinic environment. In consultation with the course director, each student will select 2 specific techniques and methodologies relevant to oral biology science. Each student will be assigned a session to present his/her selected topic, followed by questions and general discussion. The course may also include presentations by guest lecturers (e.g. Scientist from oral health companies on specific methodology).

Learning Outcomes

The objectives of this course are to learn the methods, oral biology techniques and new instrumentation used in oral biology science.

Class Schedule

Week	Module	Readings	Evaluation Due Date
1	Overview of oral biology science	Ten Cate's Oral Histology - Development, Structure, and Function Authors: Antonio Nanci, 2012, Elsevier Handbook of Oral Biology – Authors: Khurshid S, Shahab S and	TBD

		Zeeshan S. Publisher: Paramount Book Publisher, 2015	
2	Methods in oral biology science	Oral Biology Molecular Techniques and Applications Editors: Seymour, Gregory J., Cullinan, Mary P., Heng, Nicholas C.K. (Eds.) Springer 2017	TBD
3	Seminar 1(student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the seminar, the manuscript will be distributed to the group.	TBD
4	Seminar 2 (student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the seminar, the manuscript will be distributed to the group.	TBD
5	Seminar 3 (student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the seminar, the manuscript will be distributed to the group.	TBD
6	Seminar 4 (student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the seminar, the manuscript will be distributed to the group.	TBD
7	Seminar 5 (student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the seminar, the manuscript will be distributed to the group.	TBD
8	Seminar 6 (student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the seminar, the manuscript will be distributed to the group.	TBD

9	Seminar 7 (student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the seminar, the manuscript will be distributed to the group.	TBD
10	Seminar 8 (student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the seminar, the manuscript will be distributed to the group.	TBD

Instructor Information

Dr. Andrew Leask PhD (Course Director)
Email: andrew.leask@usask.ca
Phone: 3069661920
Office: 2A50.3Hsc
Office hours: 12:00 PM to 2:00 PM (every Friday during the course period)

Other instructor
Other faculty members with additional expertise as needed.

Evaluation Components

The course director will grade students as follows.

1) Presentation (75%)

Evaluation criteria:

- Content
- Organization
- Delivery and effectiveness
- knowledge of the topic and related areas
- Discussion

2) Participation (25%)

Discussions associated with the presentation of specific topics will provide an opportunity for students to exercise positive listening skills: by paying attention, looking interested, positive body language; responding to other students during the discussion; giving feedback to fellow students on their presentation; summarizing the discussion.

Participation is 25 % of final grade and will be evaluated using the following rubric.

Grade	Criteria
Fail (< 60)	• Absent • Does not demonstrate involvement in discussions
Poor (60-69)	▪ Present, not disruptive ▪ Tries to respond when called upon but does not offer much ▪ Demonstrates very infrequent (maybe once/class) involvement in discussions
Satisfactory to good (70-79)	▪ Demonstrates adequate preparation; knows basics but does not show evidence of trying to interpret or analyze them ▪ Offers straightforward information (e.g. straight from an article or textbook) without elaboration or very infrequently ▪ Does not offer to contribute to discussions, but contributes to a moderate degree when called upon ▪ Demonstrates sporadic involvement
Very good (80-89)	▪ Demonstrates good preparation; knows facts or articles well; has thought through their implications ▪ Offers interpretations and analyses of materials (more than just facts) to class ▪ Contributes well to discussions in an ongoing way: responds to other students' points, thinks through own points, questions others in a constructive way, offers and supports suggestions that may be counter to the majority opinion
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A generally weak performance, but with some evidence of

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- some understanding of the basic issues;
- some familiarity with the relevant literature and techniques;
- some ability to develop solutions to moderately difficult problems related to the subject matter;
- some ability to examine the material in a critical and analytical manner.

<60 Failure

An unacceptable performance.

Required Resources

Reading resources are limited to the selected manuscript and books decided by the student and course director.

Late Assignments

n/a

Criteria That Must Be Met to Pass

- Students must obtain a grade of 70% to pass.

Attendance Expectations

Students should attend all lectures and seminars.

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UNIVERSITY OF SASKATCHEWAN

COURSE SYLLABUS

COURSE TITLE:	Teaching and leadership abilities for Dental Education		
COURSE CODE:	DEN 804.3	**TERM:**	3
COURSE CREDITS:	3	**DELIVERY:**	
CLASS SECTION: **CLASS LOCATION:** **CLASS TIME:** **WEBSITE:**	N/A College of Dentistry Wednesday; 9:30-12:30 PM N/A	**START DATE:** **LAB** **LOCATION:** **LAB TIME:**	May 6, 2020 N/A N/A

Course Overview

Students will learn about leadership theories and signature pedagogies (e.g., the use of case studies, inductive teaching methods, and problem-based learning) specific for Dentistry classroom, dental pre-clinical, dental clinic and dental laboratory environment.

Learning Outcomes

To learn about leadership theories and different pedagogical methods specific for dentistry classroom, pre-clinical, dental clinic and dental laboratorial environment.

Class Schedule

Week	Module	Readings	Evaluation Due Date
1	Teaching and leadership abilities for academic environment – Overview	Wali, O. leadership skills in Dental Curriculum- a review Journal of Evolution of Medical and Dental Sciences 7(42):4584-4588, 2018 Rethinking knowledge and pedagogy in dental education. Whipp JL, Ferguson DJ, Wells LM, Iacopino AM. J Dent Educ. 2000 Dec;64(12):860-6. Integration of Basic-Clinical Sciences, PBL, CBL, and IPE in	TBD

		U.S. Dental Schools' Curricula and a Proposed Integrated Curriculum Model for the Future Journal of dental education 80(3):281-290, 2016	
2	Effective Communication: Barriers and Strategies	Sakaguchi RL. Facilitating preceptor and student communication in a dental school teaching clinic. *J Dent Educ*. 2010;74(1):36–42.	TBD
3	Dental Clinical and laboratory integration teaching 1	Rethinking knowledge and pedagogy in dental education. Whipp JL, Ferguson DJ, Wells LM, Iacopino AM. J Dent Educ. 2000 Dec;64(12):860-6.	TBD
4	Dental Clinical and laboratory integration 2	McIlwaine C, Brookes Z L S, Zahra D *et al*. A novel, integrated curriculum for dental hygiene-therapists and dentists. *Br Dent J*2019;226: 67-72.	TBD
5	Dental Clinical and laboratory integration 3	Integration of Basic-Clinical Sciences, PBL, CBL, and IPE in U.S. Dental Schools' Curricula and a Proposed Integrated Curriculum Model for the Future Journal of dental education 80(3):281-290, 2016	TBD
6	Impact of technology on Dental Education	Iacopino AM. The influence of "new science" on dental education: current concepts, trends, and models for the future. J Dent Educ. 2007 Apr;71(4):450-62. Chapter 2 - Basics of Dental Technology: A Step by Step Approach, Second edition Author(s): Johnson, Patrick and Stokes. Willey, 2015.	TBD
7	Critical thinking activities in dental sciences	Chambers DW. Lessons from students in a critical thinking course: a case for the third pedagogy. J Dent Educ. 2009 Jan;73(1):65-82. Doran GA. Reviewing the role of educational domains and problem-based learning in dental curricula. Part I: The concept of educational domains and their integration. SADJ. 55(8):433-5, 2000	TBD

8	Seminar 1(student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the seminar, the manuscript will be distributed to the group.	TBD
9	Seminar 2(student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the seminar, the manuscript will be distributed to the group.	TBD
10	Seminar 3(student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the seminar, the manuscript will be distributed to the group.	TBD

Instructor Information

Dr. Walter Siqueira DDS PhD (Course Director)
Email: walter.siqueira@usask.ca
Phone: 3069661920
Office: 2A50.4Hsc
Office hours: 12:00 PM to 2:00 PM (every Friday during the course period)

Evaluation Components

The course director will grade students as follows:
50% Presentation (student-led seminar)

- Evaluation criteria:
    - Content, organization
    - Delivery and effectiveness
    - Responses to questions

50% Participation
Each student will be expected to bring a positive learning attitude, ability to formulate questions and to effectively and professionally respond to others' comments and questions and give feedback to fellow students on their presentations.

Participation is 50% of final grade and will be evaluated using the following rubric.

Grade	Criteria
Fail (< 60)	• Absent • Does not demonstrate involvement in discussions
Poor (60-69)	▪ Present, not disruptive ▪ Tries to respond when called upon but does not offer much ▪ Demonstrates very infrequent (maybe once/class) involvement in discussions
Satisfactory to good (70-79)	▪ Demonstrates adequate preparation; knows basics but does not show evidence of trying to interpret or analyze them ▪ Offers straightforward information (e.g. straight from an article or textbook) without elaboration or very infrequently ▪ Does not offer to contribute to discussions, but contributes to a moderate degree when called upon ▪ Demonstrates sporadic involvement
Very good (80-89)	▪ Demonstrates good preparation; knows facts or articles well; has thought through their implications ▪ Offers interpretations and analyses of materials (more than just facts) to class ▪ Contributes well to discussions in an ongoing way: responds to other students' points, thinks through own points, questions others in a constructive way, offers and supports suggestions that may be counter to the majority opinion
Exceptional (90-100)	▪ Demonstrates excellent preparation; has analyzed materials such as articles exceptionally well and can relate them to other materials ▪ Offers analysis, synthesis, and evaluation of materials; e.g. can critically analyze a class discussion to state the main points ▪ Contributes in a very significant way to ongoing discussion: keeps analyses focused, responds very thoughtfully to other students' comments, contributes to the cooperative argument-building, suggests alternative ways of approaching material and can lead a discussion ▪ Demonstrates ongoing active involvement

University of Saskatchewan Grading System (for graduate courses)

The following describes the relationship between literal descriptors and percentage scores for courses in the College of Graduate and Postdoctoral Studies:

90-100 Exceptional

A superior performance with consistent strong evidence of

- a comprehensive, incisive grasp of subject matter;
- an ability to make insightful, critical evaluation of information;
- an exceptional capacity for original, creative and/or logical thinking;
- an exceptional ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
- an exceptional ability to analyze and solve difficult problems related to subject matter.

80-89 Very Good to Excellent

A very good to excellent performance with strong evidence of

- a comprehensive grasp of subject matter;
- an ability to make sound critical evaluation of information;

- a very good to excellent capacity for original, creative and/or logical thinking;
- a very good to excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
- a very good to excellent ability to analyze and solve difficult problems related to subject matter.

70-79 Satisfactory to Good

A satisfactory to good performance with evidence of

- a substantial knowledge of subject matter;
- a satisfactory to good understanding of the relevant issues and satisfactory to good familiarity with the relevant literature and technology;
- a satisfactory to good capacity for logical thinking;
- some capacity for original and creative thinking;
- a satisfactory to good ability to organize, to analyze, and to examine the subject matter in a critical and constructive manner;
- a satisfactory to good ability to analyze and solve moderately difficult problems.

60-69 Poor

A generally weak performance, but with some evidence of

- a basic grasp of the subject matter;
- some understanding of the basic issues;
- some familiarity with the relevant literature and techniques;
- some ability to develop solutions to moderately difficult problems related to the subject matter;
- some ability to examine the material in a critical and analytical manner.

<60 Failure

An unacceptable performance.

Required Resources

n/a

Late Assignments

n/a

Criteria That Must Be Met to Pass

- Students must obtain a grade of 70% to pass.

Attendance Expectations

Students should attend all lectures

Integrity Defined (from the Office of the University Secretary)

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UNIVERSITY OF SASKATCHEWAN

COURSE SYLLABUS

COURSE TITLE:	Critical thinking in translational Research for Oral Health Science		
COURSE CODE:	DEN 805.2	**TERM:**	1
COURSE CREDITS:	2	**DELIVERY:**	
CLASS SECTION: **CLASS LOCATION:** **CLASS TIME:** **WEBSITE:**	N/A College of Dentistry Friday, 9:30-12:30 PM N/A	**START DATE:** **LAB LOCATION:** **LAB TIME:**	September 11, 2020 N/A N/A

Course Overview

Students will learn and discuss all phases related to oral translational research, including the translational aspects of clinical science. Classes will be held once a week. On the first two weeks there will be an introduction to the correlated topics and on the remaining classes students will participate in presentations and group discussions on topics related to the course, including methodologies, research grant applications focusing on the process of translating basic scientific discoveries to pre-clinical, clinical applications and entrepreneurship. The course director will assign a topic presentation for each student during the first lecture.

Learning Outcomes

By the end of this course, students will be able to summarize: 1-the basic principles of translational research; 2- How translational oral health research has potential to systemic health/ medicine; 3-basic knowledge of translational-related research, from drug-development, animal research, clinical trial, implementation and commercialization.

Class Schedule

Week	Module	Readings	Evaluation Due Date
1	Introductory Lecture – translational research: general concept	Clinical Research in Oral Health; editor(s): Giannobile, Burt, and Genco. Wiley & Sons, 2009	TBD

2	Introductory Lecture – translational research in dentistry	Clinical Research in Oral Health; editor(s): Giannobile, Burt, and Genco. Wiley & Sons, 2009	TBD
3	Seminar 1(student-led seminar) - The course director will assign a topic for each student during the lecture 1.	Clinical Research in Oral Health; editor(s): Giannobile, Burt, and Genco. Wiley & Sons, 2009	TBD
4	Seminar 2(student-led seminar) - The course director will assign a topic for each student during the lecture 1.	Clinical Research in Oral Health; editor(s): Giannobile, Burt, and Genco. Wiley & Sons, 2009	TBD
5	Seminar 3(student-led seminar) - The course director will assign a topic for each student during the lecture 1.	Clinical Research in Oral Health; editor(s): Giannobile, Burt, and Genco. Wiley & Sons, 2009	TBD
6	Seminar 4(student-led seminar) - The course director will assign a topic for each student during the lecture 1.	Clinical Research in Oral Health; editor(s): Giannobile, Burt, and Genco. Wiley & Sons, 2009	TBD
7	Seminar 5(student-led seminar) - The course director will assign a topic for each student during the lecture 1.	Clinical Research in Oral Health; editor(s): Giannobile, Burt, and Genco. Wiley & Sons, 2009	TBD
8	Seminar 6(student-led seminar) - The course director will assign a topic for each student during the lecture 1.	Clinical Research in Oral Health; editor(s): Giannobile, Burt, and Genco. Wiley & Sons, 2009	TBD
9	Seminar 7(student-led seminar) - The course director will assign a topic for each student during the lecture 1.	Clinical Research in Oral Health; editor(s): Giannobile, Burt, and Genco. Wiley & Sons, 2009	TBD

Instructor Information

Dr. Abbas Jessani DDS PhD (Course Director)
Email: abbas.jessani@usask.ca
Phone: 778-928-3767
Office: COD 506

Evaluation Components

The course director will grade students as follows.

60% presentation

- In the first day of class a draw will be made to decide the presentation topics and order of presentation.
- Evaluation criteria:

- Content
- Organization
- Delivery and effectiveness
- Discussion

<u>40% general participation</u>

- Participation is 40% of final grade and will be evaluated using the following rubric.

Grade	Criteria
Fail (< 60)	• Absent • Does not demonstrate involvement in discussions
Poor (60-69)	▪ Present, not disruptive ▪ Tries to respond when called upon but does not offer much ▪ Demonstrates very infrequent (maybe once/class) involvement in discussions
Satisfactory to good (70-79)	▪ Demonstrates adequate preparation; knows basics but does not show evidence of trying to interpret or analyze them ▪ Offers straightforward information (e.g. straight from an article or textbook) without elaboration or very infrequently ▪ Does not offer to contribute to discussions, but contributes to a moderate degree when called upon ▪ Demonstrates sporadic involvement
Very good (80-89)	▪ Demonstrates good preparation; knows facts or articles well; has thought through their implications ▪ Offers interpretations and analyses of materials (more than just facts) to class ▪ Contributes well to discussions in an ongoing way: responds to other students' points, thinks through own points, questions others in a constructive way, offers and supports suggestions that may be counter to the majority opinion
Exceptional (90-100)	▪ Demonstrates excellent preparation; has analyzed materials such as articles exceptionally well and can relate them to other materials ▪ Offers analysis, synthesis, and evaluation of materials; e.g. can critically analyze a class discussion to state the main points ▪ Contributes in a very significant way to ongoing discussion: keeps analyses focused, responds very thoughtfully to other students' comments, contributes to the cooperative argument-building, suggests alternative ways of approaching material and can lead a discussion ▪ Demonstrates ongoing active involvement

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80-89 Very Good to Excellent

A very good to excellent performance with strong evidence of

- a comprehensive grasp of subject matter;
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70-79 Satisfactory to Good

A satisfactory to good performance with evidence of

- a substantial knowledge of subject matter;
- a satisfactory to good understanding of the relevant issues and satisfactory to good familiarity with the relevant literature and technology;
- a satisfactory to good capacity for logical thinking;
- some capacity for original and creative thinking;
- a satisfactory to good ability to organize, to analyze, and to examine the subject matter in a critical and constructive manner;
- a satisfactory to good ability to analyze and solve moderately difficult problems.

60-69 Poor

A generally weak performance, but with some evidence of

- a basic grasp of the subject matter;
- some understanding of the basic issues;

- some familiarity with the relevant literature and techniques;
- some ability to develop solutions to moderately difficult problems related to the subject matter;
- some ability to examine the material in a critical and analytical manner.

<60 Failure

An unacceptable performance.

Required Resources

Reading resources are:

- the selected manuscripts decided by the student and course director.
- *Recommended books:*

1. Translational Oral Health Research Edited by: Jukka H. Meurman
2. Clinical and Translational Science, Principles of Human Research *Edited by: David Robertson and Gordon H. Williams*
3. Leading the Translational Research in Biomarkers: Book Edition of Cancer Biomarkers Edited by S. Srivastava
4. Designing Clinical Research: An Epidemiologic Approach Edited by Stephen B. Hulley, Steven R. Cummings, Warren S. Browner
5. Clinical Research in Oral Health Edited by William Giannobile, Brian Burt, Robert Genco

Criteria That Must Be Met to Pass

- Students must obtain a grade of 70% to pass.

Attendance Expectations

Students are required to attend all classes

Participation

Student Feedback

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UNIVERSITY OF SASKATCHEWAN

COURSE SYLLABUS

COURSE TITLE:	Discussion of Social Issues and Oral Health Science		
COURSE CODE:	DEN 806.2	**TERM:**	3
COURSE CREDITS:	2	**DELIVERY:**	
CLASS SECTION: **CLASS LOCATION:** **CLASS TIME:** **WEBSITE:**	N/A College of Dentistry Friday; 8:30-11:30 AM N/A	**START DATE:** **LAB LOCATION:** **LAB TIME:**	May 8, 2020 N/A N/A

Course Overview

This course will discuss Oral health issues (e.g., water fluoridation, dental caries, dental erosion, peri-implantitis, periodontitis, etc.) related to the contemporary society and deliberate possible solutions on how to advance the communication of scientific discoveries in the oral health field to the lay population. All lectures will be delivered in an interactive forum where students are strongly encouraged to participate and share their perspectives on particular themes as much as possible. The course will start with five lectures on the communication of scientific discoveries, knowledge translation, and policy advocacy; and four student presentation classes on topics related to the course.

Learning Outcomes

Students will be able to summarize the basic construction of scientific communication and arguments by promoting knowledge translation and policy advocacies in the oral health field.

Class Schedule

Week	Module	Readings	Evaluation Due Date
1	Course Overview – What is knowledge translation?	Chapter 1- 4: Knowledge Translation in Health Care Editor(s): Straus,Tetroe Graham, Wiley & Sons, 2013.	TBD

2	How to implement knowledge translation within the oral health care environment	Afrashtehfar KI, Assery MK. From dental science to clinical practice: Knowledge translation and evidence-based dentistry principles. *Saudi Dent J*. 2017;29(3):83–92. doi:10.1016/j.sdentj.2017.02.002	TBD
3	Relationship scientific communication, knowledge translation with oral/systemic health	1. Nazir MA, Izhar F, Akhtar K, Almas K. Dentists' awareness about the link between oral and systemic health. *J Family Community Med*. 2019;26(3):206–212. 2. Chapters 13-18: Clinical Research in Oral Health; editor(s): Giannobile, Burt, and Genco. Wiley & Sons, 2009	TBD
4	Social Media and knowledge translation	 https://jcda.ca/cda-oasis	TBD
5	Knowledge translation, advocacy and policy	Chapters 13-18: Clinical Research in Oral Health; editor(s): Giannobile, Burt, and Genco. Wiley & Sons, 2009	TBD
6	Seminar 1 (student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the seminar, the manuscript will be distributed to the group.	TBD
7	Seminar 2 (student-led seminar)	In consultation with the course director, the student will select a manuscript to present to the group. One week before the seminar, the manuscript will be distributed to the group.	TBD
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Instructor Information

Dr. Dr. Abbas Jessani DDS PhD (Course Director)
Email: abbas.jessani@usask.ca
Phone: 306-966-5102
Office: College of Dentistry, room 332

Office hours: 12:00 PM to 2:00 PM (every Friday during the course period)

Evaluation Components

The course director will grade students as follows:
75% presentation (It is expected 30-45 minutes for each student presentation followed by 10-15 minutes of group discussion)

Evaluation criteria:

- Content
- Organization
- Delivery and effectiveness
- Discussion

25% general participation

Discussions associated with the presentation of specific manuscript will provide an opportunity for students to exercise positive listening skills: paying attention, looking interested, positive body language; responding to other students during the discussion; giving feedback to fellow students on their presentation; summarize the discussion.

Participation is 25% of final grade and will be evaluated using the following rubric.

Grade	Criteria
Fail (< 60)	▪ Absent ▪ Does not demonstrate involvement in discussions
Poor (60-69)	▪ Present, not disruptive ▪ Tries to respond when called upon but does not offer much ▪ Demonstrates very infrequent (maybe once/class) involvement in discussions
Satisfactory to good (70-79)	▪ Demonstrates adequate preparation; knows basics but does not show evidence of trying to interpret or analyze them ▪ Offers straightforward information (e.g. straight from an article or textbook) without elaboration or very infrequently ▪ Does not offer to contribute to discussions, but contributes to a moderate degree when called upon ▪ Demonstrates sporadic involvement
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- some ability to examine the material in a critical and analytical manner.

<60 Failure

An unacceptable performance.

Required Resources

Handouts from lectures

Late Assignments

Late assignments will not be accepted

Criteria That Must Be Met to Pass

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Attendance Expectations

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Consultation with the Registrar Form

This form is to be completed by the Registrar (or his/her designate) during an in-person consultation with the faculty member responsible for the proposal. Please consider the questions on this form prior to the meeting.

Section 1: New Degree / Diploma / Certificate Information or Renaming of Existing

1 Is this a new degree, diploma, or certificate? Yes [ ] No [X]
Is an existing degree, diploma, or certificate being renamed? Yes [ ] No [X]
If you've answered NO to each of the previous two questions, please continue on to the next section.

2 What is the name of the new degree, diploma, or certificate?

3 What is the credential of this new degree, diploma, or certificate? [Example - D.M.D. = Doctor of Dental Medicine]

4 If you have renamed an existing degree, diploma, or certificate, what is the current name?

5 Does this new or renamed degree / diploma / certificate require completion of degree level courses or non-degree level courses, thus implying the attainment of either a degree level or non-degree level standard of achievement?

6 If this is a new degree level certificate, can a student take it at the same time as pursuing another degree level program? Yes [ ] No [ ]

7 If YES, a student attribute will be created and used to track students who are in this certificate alongside another program. The attribute code will be:

8 Which College is responsible for the awarding of this degree, diploma, or certificate?

9 Is there more than one program to fulfill the requirements for this degree, diploma, or certificate? If yes, please list these programs.

10 Are there any new majors, minors, or concentrations associated with this new degree / diploma / certificate? Please list the name(s) and whether it is a major, minor, or concentration, along with the sponsoring department.
One major is required on all programs [4 characters for code and 30 characters for description]

11 If this is a new graduate degree, is it thesis-based, course-based, or project-based?

Section 4: New / Revised Major, Minor, or Concentration for Existing Degree Information (Undergraduate)

1 Is this a new or revised major, minor, or concentration attached to an existing degree program? Yes [ ] No [X] Revised [ ]
If you've answered NO, please continue on to the next section.

2 If YES, please specify whether it is a major, minor, or concentration. If it is more than one, please fill out a separate form for each.

3 What is the name of this new / revised major, minor, or concentration?

4 Which department is the authority for this major, minor, or concentration? If this is a cross-College relationship, please state the Jurisdictional College and the Adopting College.

5 Which current program(s), degree(s), and/or program type(s) is this new / revised major, minor, or concentration attached to?

Section 5: New / Revised Disciplinary Area for Existing Degree Information (Graduate)

1 Is this a new or revised disciplinary area attached to an existing graduate degree program? Yes [X] No [ ] Revised [ ]
If you've answered NO, please continue on to the next section.

2 If YES, what is the name of this new / revised disciplinary area?
Precision Oral and Systemic Health; POSH [suggested major code] and Precision Oral Systemic Health [suggested major description]

3 Which Department / School is the authority for this new / revised disciplinary area? (NOTE - if this disciplinary area is being offered by multiple departments see question below.)
DE [Dentistry (Dean's Office)] - currently exists in student system

4 Which **multiple** Departments / Schools are the authority for this new / revised disciplinary area?

4a Of the **multiple** Departments / Schools who are the authority for this new / revised disciplinary area and what allocation percentage is assigned to each? (Note - must be whole numbers and must equal 100.)

4b Of the **multiple** Departments / Schools who is the primary department? The primary department specifies which department / school policies will be followed in academic matters (ex. late adds, re-read policies, or academic misconduct). If no department / school is considered the primary, please indicate that. (In normal circumstances, a department / school with a greater percentage of responsibility - see question above - will be designated the primary department.)

5 Which current program(s) and / or degree(s) is this new / revised disciplinary area attached to?
PHD-GP [Doctor of Philosophy] and PHD-DIRCT-GP [Doctor of Philosophy (Direct)] Programs

Section 6: New College / School / Center / Department or Renaming of Existing

1 Is this a new college, school, center, or department?	Yes	No X
Is an existing college, school, center, or department being renamed?	Yes	No X
Is an existing college, school, center, or department being deleted?	Yes	No X

If you've answered NO to each of the previous two questions, please continue on to the next section.

2 What is the name of the new (or renamed or deleted) college, school, center, or department?

3 If you have renamed an existing college, school, center, or department, what is the current name?

4 What is the effective term of this new (renamed or deleted) college, school, center, or department?

5 Will any programs be created, changed, or moved to a new authority, removed, relabelled?

6 Will any courses be created, changed, or moved to a new authority, removed, relabelled?

7 Are there any ceremonial consequences for Convocation (ie. New degree hood, adjustment to parchments, etc.)?

Section 7: Course Information

1 Is there a new subject area(s) of course offering proposed for this new degree? If so, what is the subject area(s) and the suggested four (4) character abbreviation(s) to be used in course listings?

No - existing subject code of DENT [Dentistry] will be used

2 If there is a new subject area(s) of offerings what College / Department is the academic authority for this new subject area?

GP [Graduate and Postdoc Studies] / DE [Dentistry (Dean's Office)]

3 Have the subject area identifier and course number(s) for new and revised courses been cleared by the Registrar?

4 Does the program timetable use standard class time slots, terms, and sessions? Yes [X] No [ ]

If NO, please describe.

5 Does this program, due to pedagogical reasons, require any special space or type or rooms? Yes [X] No [ ]

If YES, please describe.

May use dental clinic, etc. (facilities within Dentistry)

NOTE: Please remember to submit a new "Course Creation Form" for every new course required for this new program / major. Attached completed "Course Creation Forms" to this document would be helpful.

Section 8: Admissions, Recruitment, and Quota Information

1 Will students apply on-line? If not, how will they apply?

Yes

2 What term(s) can students be admitted to?

YYYY05 [May], YYYY09 [September], and YYYY01 [January]

3 Does this impact enrollment?

Slight increase - anticipate 7 students per year

4 How should Marketing and Student Recruitment handle initial inquiries about this proposal before official approval?

Refer to the College of Dentistry

5 Can classes towards this program be taken at the same time as another program?

Yes, though not anticipated. Graduate Professional Skills Certificate for example.

6 What is the application deadline?

As per current set-up

7 What are the admission qualifications? (IE. High school transcript required, grade 12 standing, minimum average, any required courses, etc.)

- Regular admission - relevant Master's degree or equivalent with a minimum overall average of 70% OR direct-entry admission - professional degree in a relevant health sciences field (DMD, DDS, MD, RN, PT or equivalent) and a minimum overall average of 80% with continuation in PhD program beyond year one dependent passing qualifying exam administered during year one; direct entrants also have additional prescribed 19 credit units (combination of stringent requirements during professional degree coursework, the qualifying exam, and required 19 additional credit units will ensure direct-entry students are equally as successful as regular entry students in the program)
- English language proficiency - applicants who first language is not English must provide evidence of English language proficiency by achieving at least the minimum scores on one of the following measures with test taken within the last 24 months. TOEFL - minimum score for the internet-based test is 86 with no individual section score below 20 OR IELTS - minimum score is 6.5 with no individual section score below 6.0
- Statement of academic intent
- Three reference letters

8 What is the selection criteria? (IE. If only average then 100% weighting; if other factors such as interview, essay, etc. what is the weighting of each of these in the admission decision.)

N/A

9 What are the admission categories and admit types? (IE. High school students and transfer students or one group? Special admission? Aboriginal equity program?)

1 admission prioritized for Indigenous applicant; 3 admissions prioritized for female applicants; otherwise standard

10 What is the application process? (IE. Online application and supplemental information (required checklist items) through the Admissions Office or sent to the College/Department?)

Per current set-up for doctoral programs

11 Who makes the admission decision? (IE. Admissions Office or College/Department/Other?)

College of Dentistry recommends admission; College of GP makes admission decisions

12 Letter of acceptance - are there any special requirements for communication to newly admitted students?

13 Will the standard application fee apply?

Yes

14 Will all applicants be charged the fee or will current, active students be exempt?

All applicants will be charged

15 Are international students admissible to this program?

Yes

Section 9: Government Loan Information

NOTE: Federal / provincial government loan programs require students to be full-time in order to be eligible for funding. The University of Saskatchewan defines full-time as enrollment in a minimum of 9 credit units (operational) in the fall and/or winter term(s) depending on the length of the loan.

1 If this is a change to an existing program, will the program change have any impact on student loan eligibility?

No

2 If this is a new program, do you intend that students be eligible for student loans?

Section 10: Convocation Information (only for new degrees)

1 Are there any 'ceremonial consequences' of this proposal (ie. New degree hood, special convocation, etc.)?

2 If YES, has the Office of the University Secretary been notified?

3 When is the first class expected to graduate?

4 What is the maximum number of students you anticipate/project will graduate per year (please consider the next 5-10 years)?

Section 11: Schedule of Implementation Information

1 What is the start term?

202005 [May 2020]

2 Are students required to do anything prior to the above date (in addition to applying for admission)? Yes [ ] No [X]

If YES, what and by what date?

Section 18: Proposed Tuition and Student Fees Information

1 How will tuition be assessed?

Standard Undergraduate per credit	
Standard Graduate per credit	
Standard Graduate per term	X
Non standard per credit*	
Non standard per term*	
Other *	
Program Based*	

* See attached documents for further details

2 If fees are per credit, do they conform to existing categories for per credit tuition? If YES, what category or rate?

3 If program based tuition, how will it be assessed? By credit unit? By term? Elsehow?

4 Does proponent's proposal contain detailed information regarding requested tuition? Yes [ ] No [ ]

If NO, please describe.

5 What is IPA's recommendation regarding tuition assessment? When is it expected to receive approval?

6 IPA Additional comments?

7 Will students outside the program be allowed to take the classes?

8 If YES, what should they be assessed? (This is especially important for program based.)

9 Do standard student fee assessment criteria apply (full-time, part-time, on-campus versus off-campus)?

10 Do standard cancellation fee rules apply?

11 Are there any additional fees (e.g. materials, excursion)? If yes, see NOTE below.

12 Are you moving from one tuition code (TC) to another tuition code? Yes [ ] No [ ]

If YES, from which tuition code to which tuition code?

13 Are international students admissible to the program? If yes, will they pay the international tuition differential?

NOTE: Please remember to submit a completed "Application for New Fee or Fee Change Form" for every new course with additional fees.

Section 19: TLSE - Information Dissemination (internal for TLSE use only)

1	Has TLSE, Marketing and Student Recruitment, been informed about this new / revised program?	Yes		No
2	Has TLSE, Admissions, been informed about this new / revised program?	Yes		No
3	Has TLSE, Student Finance and Awards, been informed about this new / revised program?	Yes		No
4	Has CGPS been informed about this new / revised program?	Yes		No
5	Has TLSE, Transfer Credit, been informed about any new / revised courses?	Yes		No
6	Has ICT-Data Services been informed about this new or revised degree / program / major / minor / concentration?	Yes		No
7	Has the Library been informed about this new / revised program?	Yes		No
8	Has ISA been informed of the CIP code for new degree / program / major?	Yes		No
9	Has Room Scheduling/Scheduling Hub/Senior Coordinator of Scheduling been informed of unique space requirements for the new courses and/or informed of program, course, college, and department changes?	Yes		No
10	Has the Convocation Coordinator been notified of a new degree?	Yes		No

11 What is the highest level of financial approval required for this submission? Check all that apply.

- a. None - as it has no financial implications ☐

OR

- b. Fee Review Committee ☐
- c. Institutional Planning and Assessment (IPA) ☐
- d. Provost's Committee on Integrated Planning (PCIP) ☐
- e. Board of Governors ☐
- f. Other ☐

SIGNED

Date: December 17, 2019

Registrar (Russell Isinger): Russell Isinger

College / Department Representative(s): Martha Smith

IPA Representative(s):