

Department of Physiology
Faculty of Medicine and Dentistry
University of Alberta

Strategic Plan 2016

Vision

To inspire through integrating the Discipline of Physiology with outstanding achievements in Education, Research, People and Citizenship within a creative community, building upon one of the world's great physiology departments and leading the discipline into a new century of service and discovery for the benefit of people everywhere.

Mission

The Department of Physiology creates a vibrant and exciting environment of discovery, education, leadership and service through intellectual inquiry, partnerships, application, and translation. It leads nationally and internationally through developing tomorrow's leaders, revealing scientific discoveries, and innovating science, people and community for the betterment of society.

Values

The Department of Physiology community of students, post-doctoral trainees, faculty, staff, partners and alumni share deeply held values evolved over a century that bind them together and guide their efforts to serve their communities.

We value intellectual integrity and curiosity, creativity, freedom of inquiry and expression, the equality, diversity and dignity of all people, and the ethical conduct of science and relationships.

We value excellence in education, research, leadership and service in accord with our mission.

We value inquiring minds, learners at all levels, and lifelong partnerships with all disciplines in the exploration of the centrality of physiological functioning in all living systems and its application to health.

We value tradition as we celebrate and build upon a century-long history of achievement, contributions to society and international recognition.

Preamble

Physiology (from the Greek: philosophical inquiry into the nature of things) is the *study of the function of living organisms*. Modern physiology developed in the late 19th Century in France, the UK, Germany, the United States and Canada from a teaching area and individual laboratories into an independent discipline with full departments. It utilizes the experimental method and the techniques of physical sciences to investigate mechanistically, the function of living things at all levels of organization from microscopic organelles, to cells, organs and systems, to whole animals; and the physical and chemical processes involved. As such, it is a central science in the modern university where it contributes fundamental knowledge to advances in medicine and health, and integrates, and readily collaborates with, all other experimental disciplines. Internationally, it is recognized for its distinctiveness through the establishment of the Nobel Prize in Physiology or Medicine.

The Department of Physiology is the only continuing department founded in the newly established Faculty of Medicine at the University of Alberta in 1914, less than 30 years after the creation of *The Physiological Society* in the UK in 1876, and is one of the first full departments of physiology established in Canada or anywhere. The Department celebrated its centennial in 2014. Its tradition of excellence began early with the discovery by JB Collip of the purification of insulin. That tradition of excellence continues with several internationally recognized sub-disciplines – most notably our membrane transport and neuroscience groups. Throughout its history the Department has recruited outstanding scientists and teachers from around the world and guided their development into distinguished careers. In turn, they have educated a century's worth of medical and health practitioners and research trainees who have gone on to serve and lead their communities well. In spite of the vagaries of budgets, priorities, and policies, the Department has held a steady course, supported its educational and research programs and fulfilled its role as a leading department of physiology.

The second half of the second decade of the 21st Century is a time of changing perspectives and expectations for universities, faculties and departments. While their fundamental natures and core missions remain intact, society expects more return on its investment for the benefit of the public good. For the Department of Physiology, this manifests in several ways such as increased translation of basic discovery into diagnostics, devices or therapeutics to mitigate or cure human disease, increased and meaningful partnerships with varied communities, and clear justification of the central importance of the Department in the fabric of the modern university. We are prepared to meet these challenges and exceed expectations. Our Strategic Plan 2016 focuses on People, Education, Research and Serving our Communities. It is the roadmap detailing how the Department of Physiology will assist leading the faculty, university and discipline of physiology into a new century of excellence, achievement and service.

People

Our Department enjoys a strongly imbued sense of collegiality, cooperation and pride in our collective achievements among faculty, research trainees (graduate students and post-doctoral fellows) and staff that we will build upon.

1. Objective: Continue to attract, recruit, develop and retain a diverse and talented professoriate
 - i. Strategy: In close co-operation with the Faculty, develop the resources to recruit outstanding new faculty and retain established faculty, especially those with term, peer-reviewed salary support; obtain Canada Research Chair positions, endowed chairs, and new opportunities for competitive salary supports
 - ii. Strategy: Mentor new and junior faculty for optimal career development; encourage career skill development for all faculty
 - iii. Strategy: Encourage, support and reward faculty achievement in the products and processes of educational scholarship and teaching; increase the number of Departmental teaching awards
2. Objective: Continue to attract research trainees of exceptional potential and prepare them for careers appropriate to the needs of the discipline and society
 - i. Strategy: Recruit graduate and post-doctoral candidates internationally, from diverse backgrounds and disciplines, and especially from countries where the Faculty and University have strategic partnerships
 - ii. Strategy: Expand our scholarship funding for worthy and exceptional candidates for graduate and post-doctoral studies
 - iii. Strategy: Develop and expand the career skills of our trainees for jobs in different types of employment; establish innovative internship, co-op and exchange programs with industry, government, bio-technology start-ups, international universities and other areas relevant to enriching graduate and post-doctoral training
3. Objective: Support, encourage, and reward Departmental staff for outstanding service
 - i. Strategy: Support career development skills and training and advancement
 - ii. Strategy: Encourage participation in Departmental committees and activities
 - iii. Strategy: Effectively restructure Departmental administration for benefit of all
4. Objective: Develop best practices for Departmental administration
 - i. Strategy: Implement human resources best practices
 - ii. Strategy: Maintain transparency in Departmental governance, structures and relationships
 - iii. Strategy: Use the Departmental Executive Committee to provide Chair with considered input on strategic directions; use Departmental meetings with faculty, trainee and staff input as a forum for policy development and decisions

5. Objective: Celebrate our achievements and milestones
 - i. Strategy: Expand and further develop our Departmental portfolio of prizes and honours to recognize faculty, trainee and staff achievement and excellence
 - ii. Strategy: Use the Departmental Research Day as an opportunity to foster pride and identity in the Department
 - iii. Strategy: Build upon the pride and excitement of the 2014 Centennial Celebrations for further achievement, Departmental identity and engagement and morale boosting; maintain an anchoring home for the Department on 7th Floor MSB.

Education

The Department of Physiology is dedicated to excellence in teaching and training at all levels, to all health science disciplines and to lifelong learning. This is a core, central strength of the Department, since the teaching of general physiology is a fundamental element of the curriculum of every health science Faculty and to the education of health science students in all disciplines. The quality and rigour of the teaching of physiology expected by the Department are fundamental criteria of excellence and accreditation of every health science professional program and thereby are hallmarks of the overall quality of the entire academy.

1. Objective: Maintain the highest quality of teaching of physiology across the academy
 - i. Strategy: Since the expectations of the teaching of physiology reflect the health and vigour of the Department in general, the promotion and achievement of all of the elements of this Strategic Plan 2016 will assure the highest standards of excellence, energy and achievement, and thereby teaching in the Department
 - ii. Strategy: Consult widely with deans and department chairs on the quality and popularity of the teaching of physiology in their units and make improvements as necessary
 - iii. Strategy: Promote the Department as the only organization in Alberta qualified and accredited to teach all aspects of human physiology to all health science disciplines
 - iv. Strategy: Seek out new 'markets' for our teaching of physiology, such as smaller provincial universities with health science programs

2. Objective: Expand the continuum of physiology teaching and training
 - i. Strategy: Expand our outreach to high school students to promote experimental science and the wonders of physiology in order to 'hook' them early before entering university; provide continued and enhanced support of the Let's Talk Science program
 - ii. Strategy: Promote PHYSIOL 310, the physiology laboratory course, to undergraduate students as an introduction to sophisticated approaches to experimental science
 - iii. Strategy: Insist and enlighten others that the Honours Physiology program is an important portal for medical school admissions; emphasize the Honours Physiology program as a research-intensive experience designed to teach professional life skills including critical thinking, proposal development and defense, technical competency, evidence analysis and advanced communication skills; develop an internship program for Honours Students that exposes them to 'real life' career opportunities outside of academia
 - iv. Strategy: Advocate that physiology is a basic, core element of the medical curriculum
 - v. Strategy: Support establishment of a Faculty undergraduate BMSc program to complement and enhance the Honours Program

3. Objective: enrich the graduate training experience
 - i. Strategy: Create opportunities and financial support for graduate students to exchange in other laboratories, to obtain internship or 'co-op' experience with industry, government or regulatory bodies, to be exposed to intellectual property protection and develop appreciation of technology commercialization in order to assist and prepare them with career choices outside of academia or health
 - ii. Strategy: Seek additional funding resources for graduate student scholarships and teaching assistantships

4. Objective: enrich the post-doctoral training experience
 - i. Strategy: Change the minimal involvement that the Department has traditionally had with post-doctoral fellows, where most of their guidance and mentoring has been provided by their supervisors, to develop greater partnership between the Department, supervisors and postdoctoral-fellows for more active engagement and expansion of career development opportunities
 - ii. Strategy: Offer similar opportunities to fellows that graduate students receive for exchanges or internships
 - iii. Strategy: Prepare exceptional fellows for careers as academics by closely mentoring their development, offering career strategies, and creating networking, leadership and national/international opportunities for them to demonstrate their potential, and by preparing and honing their grant writing, laboratory management and mentoring skills and rehearsing them for interviews

Research

The Department has a strong research tradition and many of our research strengths are nationally and internationally recognized. Our research areas include neurosciences, cardiovascular physiology, cellular and molecular physiology, vision physiology, metabolic physiology, endocrinology, maternal, fetal & neonatal (perinatal) physiology, membrane transport physiology, renal physiology and respiratory physiology. We will build upon our already strong foundation in order to achieve a higher level of excellence, achievement and recognition.

1. Objective: Invest in development of a few signature research areas where the Department of Physiology is recognized as a global leader
 - i. Strategy: identify and support established and emerging areas of research distinction and distinctiveness using the following criteria:
 - National and international stature for excellence, relevance and impact
 - Critical mass – opportunity for broad, interdisciplinary engagement
 - Leadership, participation and support from within the Department
 - Stakeholder partnerships
 - Research partners in industry, community, government and internationally
 - Capacity to shape and align with provincial and federal priorities
 - Trainee demand
 - Physical and operational capacity
 - Geographic or situational relevance
 - ii. Strategy: establish a scheme so that emerging, ambitious and worthy research themes are enabled and mentored to develop into priority signature research areas and where declining areas of distinction are deemphasized in a cycle of renewal
 - iii. Strategy: create strategic alliances with Faculty and University research centres and institutes to promote the Department's signature research areas; recruit jointly with other departments; leverage resources and partnerships nationally and internationally to advance signature research themes
 - iv. Strategy: develop skills and partnerships to translate and/or commercialize discoveries and technology from signature research themes to improve health
2. Objective: Expand supports and services to enable Department researchers at all levels to succeed and excel
 - i. Strategy: utilize grant assist and internal peer review mechanisms to optimize each funding application; prepare research trainees in grant preparation skills
 - ii. Strategy: develop skills and leaders in team grant applications at all levels; develop support mechanisms to hire grant writers/organizers for major applications
 - iii. Strategy: pursue strategies to increase success rates for trainees and faculty in salary award competitions

- iv. Strategy: create an inventory of, and secure resources to maintain and expand, core departmental research services and supports; seek alliances with other departments and institutes for shared resource utilization to avoid unnecessary duplication and better resource investment

Service to our Communities

The Department of Physiology plays indispensable and key roles in the wider university community and in communities beyond the university.

1. Objective: extend the reach of our teaching throughout Alberta and beyond
 - i. Strategy: Create online versions of our courses, such as the general survey course, PHYSL 210, specialty area courses that are not offered elsewhere, or allied-health survey courses that smaller institutions cannot mount as effectively or expertly; these should be revenue-generating
2. Objective: improve our communications with our communities
 - i. Strategy: Improve the Departmental website to reach, attract and recruit potential undergraduates, graduate and post-doctoral trainees and faculty, and to promote the achievements of the Department and its members
 - ii. Strategy: encourage and reward Departmental members to join and become active within scientific societies, service organizations and on grant review panels
3. Objective: become an indispensable, core member of the University community
 - i. Strategy: Assure appreciation of and promote Departmental courses for core physiology preparation in the Faculty of Medicine & Dentistry for medical, dental, dental hygiene and medical laboratory technology training, for the Faculty of Science, and for the Faculties of Nursing, Pharmacy and Pharmaceutical Sciences, Physical Education and Recreation, Rehabilitation Medicine, and the School of Public Health.
 - ii. Strategy: Ensure that Departmental faculty members are key leaders and investigators in major team and other applications sponsored by Faculty and University institutes.
 - iii. Strategy: Promote Departmental faculty members for key leadership positions in Faculty and University posts and for prestigious University awards
4. Objective: become an indispensable, core member of communities beyond the University
 - i. Strategy: Ensure that Departmental faculty members are key leaders and investigators in national and international team and strategic initiatives
 - ii. Strategy: Promote Departmental faculty members for national and international committees and leadership posts and prestigious awards; create a culture of service and recognition of achievement