

**UC DAVIS SCHOOL OF MEDICINE CURRICULUM REDESIGN:
Integrated EXplorative Patient- and Learner-ORiented Education (I-EXPLORE)
Three-Phase Education (e³)**

Curriculum Proposal

The UC Davis School of Medicine Curriculum

During its history of over 50 years, UC Davis School of Medicine has undergone several rounds of curricular revision based on our evolving needs and the changing landscape of medical education. Our last significant curricular changes occurred 15-20 years ago. The main characteristics of the current curriculum are:

- Organization in a Flexnerian “2 + 2” model;
- Over 30 separate, mostly single department-owed courses across 4 blocks in the first 2 years;
- A study period in Year 2 dedicated to USMLE Step 1;
- A “Transition to Clerkships” course, followed by clerkships in Family Medicine, Internal Medicine, Obstetrics/Gynecology, Pediatrics, Psychiatry, and Surgery (differently ordered for each student);
- Longitudinal experiences in Primary Care and Doctoring;
- A fourth year with breadth and depth to prepare students for residency, ending with a “Transition to Residency” course immediately before graduation.

A map of the current UCD School of Medicine curriculum can be found in [Appendix A](#).

Our Curriculum Redesign Process

In December 2018, UC Davis Vice Chancellor of Human Health Sciences David Lubarsky and Interim Dean of the School of Medicine Lars Berglund asked Associate Dean for Curriculum and Medical Education Kristin Olson to assemble a diverse curriculum design team (CDT) charged with drafting 2-3 curriculum redesign plans by December 2019. In addition to Associate Dean Olson, the CDT included 11 faculty and 2 residents who collectively represented 10 School of Medicine departments. Two medical students and 2 Office of Medical Education staff rounded out the CDT.

CDT members met twice monthly for 90 minutes or more beginning in March 2019. Each meeting was led by rotating team members who shared evidence germane to the monthly topic (e.g., journal articles and editorials, surveys, external and internal reports), prepared presentations, and drafted voting ballots. Associate Dean Olson took a facilitator and assistant role throughout the process. CDT members only cast votes if they were present for the discussion. Proposals for each topic advanced if 2/3 or more of the voting members voted in favor. Associate Dean Olson only cast tie-breaking votes, which occurred with <5% of proposals. The OME staff did not vote.

Because we had not undertaken a significant curriculum redesign in some time, there were multiple issues to consider in a short period of time. We needed to proceed quickly and efficiently, while making every effort to be inclusive, open-minded, and transparent about our process. Input was solicited from the broader community via forums, surveys, meetings with department chairs and key department educators, one-on-one or small group discussions, presentations in committees, email, and a publicly available website.

Why Does Our Curriculum Need to Change?

We have evidence that our current curriculum is not achieving successfully its intended purpose:

- Students have repeatedly and increasingly expressed frustration with the structure, sequence, distribution, and content of the curriculum.
- Average USMLE Step 1 scores began declining several years ago and have since remained several points below the national average.
- Faculty have described the current content sequence as illogical from a knowledge scaffolding standpoint, and have described the process of introducing new content and integrating content across courses and years as needlessly difficult.
- Leadership, faculty, and staff have expressed concern that our curriculum makes our School less competitive in the eyes of younger generations of applicants.
- External consultants have recommended curricular, structural and governance modifications to ensure compliance with accreditation standards before the site visit by the Liaison Committee on Medical Education (LCME) in February 2022.

Guiding Principles in Redesign

Our guiding principles in redesign were organized around our School of Medicine missions, which together prioritize **collaboration, diversity, community needs, and learner-centered education resulting in patient-centered care.**

We hosted four UCD School of Medicine community forums framed around the principles of a **learner-centered** and **patient-centered curriculum**, which generated dozens of creative and thoughtful suggestions from participating department chairs, faculty, residents, students, and staff. A summary of these suggestions to incorporate in the new curriculum can be found in [Appendix B](#).

Our Framework for a New Curriculum

- **Graduation competencies** will serve as the primary scaffold for the curriculum, allowing for mapping of all courses and sessions. Emphasis will be on competency-based progression through the curriculum, with embedded opportunities for expanded learning or remediation as appropriate for the learner.
- **Three pillars of biomedical science, clinical science, and health systems science** will be horizontally and vertically integrated throughout the curriculum.

Two Curriculum Proposals

The CDT created two plans, “Blue” and “Gold,” for consideration by faculty committees. The final CDT report encompassing both plans is archived on our curriculum design [site](#), and components of it were used in preparing this summary. The details of the Blue and Gold plans were shared with stakeholders (e.g., faculty, students, and staff) and input was solicited from these groups via online surveys. Among all survey participants, there was overwhelming support for implementing a new curriculum as opposed to keeping the current curriculum, with the majority of survey participant stakeholders preferring the Blue plan in particular. The plans and stakeholder feedback were presented to the Committee on Educational Policy (CEP) and the Faculty Executive Committee (FEC) in January-February 2020. In March 2020, both CEP and FEC unanimously voted to endorse the Blue plan with minor modifications as the I-EXPLORE Curriculum to move forward for faculty vote. Hereafter, the Blue plan and the I-EXPLORE curriculum will be considered synonymous.

I-EXPLORE Curriculum

The I-EXPLORE Curriculum contains three phases: pre-clerkship, clerkship, and post-clerkship. A curriculum map outlining the timeline for all three phases can be found in [Appendix C](#).

Pre-Clerkship Phase

	August			September					October						November					December					January					February					March					April					May					June					July				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52							
Year 1	Pre-Clerkship Phase																																																										
	Human Architecture (8 wks)								Molecular and Cellular Medicine (6 wks)						Intersession	Pathogens and Host Defense (5wks)					Winter Break	Intersession	Hematology, Cardiology, Pulmonology, and Nephrology (19weeks)										Intersession	Spring Break	Hematology, Cardiology, Pulmonology, and Nephrology (19 weeks)										Summer Break (8 wks)														
Year 2	Pre-Clerkship Phase																																																										
	Endocrinology, Gastroenterology, and Reproduction (16 wks)										Intersession	Endocrinology, Gastroenterology, and Reproduction (16 wks)										Skin and Musculo-skeletal Systems with Capstones (3 wks)			Winter Break	Brain and Behavior with Capstones (8 wks)					Step 1 Study Period/Electives (8 wks)					Transition to Clerkship	Clerkship Phase																						

The guiding principles for this curricular phase include content integration; inclusivity of all SOM departments; earlier clinical experience; weekly schedule standardization with incorporated self-directed learning time; customization of experience through intersessions; strengthened Step 1 preparation; and promotion of student wellbeing.

The total footprint of this curricular phase does not change from that of the present curriculum (91 total weeks, including Step 1 study time and the Transition to Clerkship course), with students entering clerkships in early May of their second year.

Several important elements are added to this curricular phase. Strengthening the health systems science pillar (30 hours), expanding biomedical and clinical science to include currently underrepresented disciplines (anesthesiology, ophthalmology, otolaryngology, pediatrics, physical medicine and rehabilitation, radiation oncology, radiology, toxicology, and urology) (60 hours), and incorporating new threads (30 hours) requires approximately 120 hours (5 weeks at 24 hours/week) of new content. This new content is augmented by refinement of pre-existing content. Four weeks were added for the intersessions, in addition to the equivalent of 4 weeks (96 hours) for clinical preceptor time for a new longitudinal clinical experience of approximately one afternoon every other week. Lastly, to better allow our students to participate in national experiences (e.g., research, military obligations), 3 weeks are added to a later summer break with 1 week subtracted from one winter break and 1 week subtracted from a fall break, for a net addition of 1 week of break. **In total, this amounts to approximately 14 weeks of new content.**

This 14 weeks of new content will be absorbed through a combination of increased and improved content integration, shifting of some advanced biomedical science content to the clerkship/post-clerkship phases, and content compression. ¹ If the I-EXPLORE curriculum plan is approved by faculty vote, specific decisions on

¹ One potential means of addressing research-focused biomedical or clinical science content beyond the confines of the formal curriculum is our proposed "Frontiers in Medical Research" series. This is a new, optional noontime seminar series for medical students. Faculty who would like to share research advances or significant anticipated changes in medicine with medical students are encouraged to participate, reserving required class time for content that relates to current standard of clinical practice. Additional optional noontime seminar series may be similarly introduced as a means of expanding our optional educational and advisory offerings to interested students.

integrating, revising, compressing, shifting, or reducing content will occur in faculty workgroups that plan the curriculum week by week for the subsequent year. Importantly, the CDT believes the best elements of the Flexnerian model will be preserved and reinforced, because the 14 weeks of new content represent less than 20% of the entire pre-clerkship curriculum, and I-EXPLORE continues to emphasize both biomedical and clinical science.

The week-long intersessions are opportunities for decompression and individualization within the otherwise highly integrated curriculum, and will be organized as follows:

- *Monday and Tuesday*: Electives and/or interprofessional experiences.
- *Wednesday*: Exposure to different disciplines through “career days” or mentorship opportunities.
- *Thursday and Friday*: Areas of scholarly concentration.

Remediation, study skills development, or vacation are also potential uses of intersession time.

The optional “areas of scholarly concentration” (ASCs) are a flexible means by which students can further customize their education and differentiate themselves. Anticipated ASC topics include care for underserved populations, clinical or translational research, medical education, health care policy/advocacy, patient safety/quality improvement, and global health. While basic content in most of these areas will be presented in the standard curriculum for all students, the ASC will offer more advanced modular content largely online, with potential group or experiential learning. Protected time for this work is included in the intersessions, but students will have the flexibility to complete the content up until the end of the clerkship year. In addition, students may choose to use a 2-week clerkship selective to work on their ASC. Should students complete an appropriate ASC project, they will receive 4 weeks of clinical didactic credit in the post-clerkship phase.

Specific descriptions for each course/block are provided in [Appendix D](#).

Commonalities Across All Pre-Clerkship Courses

All of the integrated courses within the pre-clerkship phase will have the following in common:

- Better integration across disciplines, with the goal of increasing efficiency and limiting cognitive load.
- Weekly schedule standardization, with online lectures and [problem-based learning \(PBL\)](#), [team-based learning \(TBL\)](#), and [peer instruction \(PI\)](#) the primary active learning methodologies, as shown in this sample schedule:

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:00 AM	PBL Prep Case 1	SDL time	PBL Case 1	SDL time	PBL Case 2
9:00 AM	PBL Prep Case 2	SDL time	Peer Instruction	SDL time	Peer Instruction
10:00 AM	TBL	ARS Lecture	TBL	SDL time	Peer Instruction
11:00 AM	TBL	ARS Lecture	TBL	SDL time	Peer Instruction
12:00 PM	Lunch	Lunch	Lunch	Lunch	Lunch
1:00-5:00 PM	SDL time	Clinic or Clinical Skills*	SDL time	SDL time	SDL time

SDL= Self-directed Learning (view online lectures, self-directed learning). *Clinic is based on preceptor availability, while Clinical Skills is based on facilitator availability. All exams will be scheduled on Fridays, whenever possible.

- Advanced biomedical content is shifted to clerkship and post-clerkship phases.

- Incorporation of previously underrepresented disciplines/topics such as anesthesiology, ophthalmology, otolaryngology, pediatrics, physical medicine and rehabilitation, radiation oncology, radiology, toxicology, and urology expands the learner knowledge base.

Core Clerkship Phase

Clerkship Phase	Weeks																																																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Year 3	Internal Medicine						Interession	Surgery						Summer Break		Interession	Pediatrics						Interession	Ob/Gyn						Interession	Psychiatry						Winter Break		Interession	Family Medicine						Interession	Selectives					

The core clerkship phase is 52 weeks in length containing the following:

- 48 weeks of clerkships and intersessions combined and 4 weeks of vacation
 - 7 blocks of 6 weeks each = 42 weeks total of clerkship time
 - Family Medicine
 - Internal medicine
 - OB/GYN
 - Pediatrics
 - Psychiatry
 - Surgery
 - Selectives (3 x 2 weeks each)
 - 6 weeks of required intersessions. Intersession content includes:
 - Biomedical, clinical, health science integration
 - Interprofessional education
 - Thread content
 - (Potentially Doctoring 3 - to be determined by special workgroup)
 - Areas of scholarly concentration
 - Orientation for following clerkship
- 4 weeks of vacation

For each clerkship, biomedical and clinical science faculty will work together to create pathophysiology reviews or illness scripts that faculty can use to teach about common diseases. This can be integrated with content in the clerkship intersessions and with the specialty-specific biomedical science content in the post-clerkship Transition to Residency course.

The Primary Care Continuity Clinic is dissolved in lieu of the longitudinal clinical experience in the pre-clerkship phase. This adds 1-2 days back to each clerkship, when compared to the current curriculum.

Post-Clerkship Phase

The post-clerkship phase is 65 weeks in length, broken out as follows:

- 36 weeks of required content, 28 of which must be clinical:
 - 4-week Neurology Advanced Clinical Clerkship
 - 4-week Emergency Medicine acting internship (AI) at UCDMC
 - 4-week inpatient AI within a core clerkship department at UCDMC
 - 4-week AI in any discipline, at UCDMC or away
 - 4-week ICU AI, at UCDMC or away (counts as one of above AIs)
 - 4-week Transition to Residency course, which incorporates specialty-specific biomedical content
 - 16 elective weeks (at least 8 must be clinical)
 - Optional Area of Scholarly Concentration Project counts for 4 non-clinical elective weeks

I-EXPLORE Compared with our Current Curriculum

Phase	I-EXPLORE Plan	Current
Pre-Clerkship	91 weeks August – April	91 weeks August – April
Required Content Weeks	66 weeks	71 weeks
Intersessions	4 weeks	None
Longitudinal Clinical Experience	Begins Week 9	None
Summer Break	8 weeks	5 weeks
Other Vacation	5 weeks	7 weeks
Step 1 Study/ Elective	8 weeks	8 weeks
Clerkship	52 weeks	52 weeks
Family Medicine	6 weeks	4 weeks
Internal Medicine	6 weeks	8 weeks
Ob/Gyn	6 weeks	8 weeks
Pediatrics	6 weeks	8 weeks
Psychiatry	6 weeks	8 weeks
Surgery	6 weeks	8 weeks
Selectives	6 weeks	4 weeks
Continuity Clinic	Moved to pre-clerkship and increases to approximately 28 half days	18 half days
Intersessions	6 one-week intersessions	None
Vacation	4 weeks	4 weeks
Post-Clerkship	65 weeks	65 weeks
Required Content	36 weeks	38 weeks
Emergency Medicine AI	4 weeks at UCDCM	4 weeks at UCDCM
Neurology	4 weeks	No Neurology requirement
Inpatient AI	4 weeks in core clerkship department at UCDCM	4 weeks in core clerkship department at UCDCM
Additional AI	4 weeks (can be away rotation)	4 weeks
ICU	4 weeks (counts as one of AIs)	No ICU requirement
Area of Scholarly Concentration (ASC) Project	4 weeks (optional)	4 weeks (optional Doctoring 4 or SPO [Research])
Electives	Complete required number of weeks	Complete required number of weeks
Transition to Residency	4 weeks with specialty-specific biomedical science	2 weeks

Curricular Oversight and Structural Support

We propose that all departments share ownership of the 7 pre-clerkship courses (“blocks”) and the clerkship intersessions as shown in [Appendix C](#). This creation of unified biomedical science/clinical science/health systems science courses should offer multiple benefits, including increased inclusiveness, collaboration, and integration, through the following mechanisms:

- Hybrid foundational and longitudinal content format for all disciplinary areas, which is currently challenging to implement with many individual courses;
- Spiral learning that builds upon and incorporates prior content;
- Assessments with greater integration and complexity, better reflecting the realities of clinical medicine and USMLE exams; and

- Better usage of our large pool of faculty expertise.

Course Director, Thread Leader, Discipline Leader, and Scholarly Mentor Selection

Faculty will be invited to serve in the following roles:

- Three co-course directors for each pre-clerkship and clinical intersession course, with one from biomedical science, one from clinical science, and one from health systems science. These course directors collaborate in course administration, including scheduling, content organization, content integration, assessment, and communication.
- Thread leaders for the six threads (Diagnostic Medicine, Preventive Medicine, Pain Medicine, Stages of Life, Care for Vulnerable Populations, and Behavioral Health) organize their content across all four years.
- Discipline leaders (corresponding to disciplines taught as individual courses in the current curriculum, such as anatomy, physiology, pharmacology, pathology, cardiology, clinical skills, etc. with additional slots reserved for health systems science) organize their content across all four years.
- Mentors for optional areas of scholarly concentration (Care for the Underserved [PRIME], Research, Medical Education, Health Care Policy/Advocacy, Patient Safety/Quality Improvement, and Global Health) organize their content across all four years.
- Thread and discipline leaders collaborate with course directors and one another to ensure that their content is appropriately integrated and incorporated over all four years of the curriculum. Mentors for areas of scholarly concentration will collaborate with course directors to determine what content should be required versus optional.
- For each of these positions, a call shall be put out to all faculty to serve a three-year term. Faculty must obtain approval from their department chairs before applying. If CEP deems appropriate, faculty may serve in more than one role or may serve consecutive terms.
- Applicants are reviewed and selected by CEP through a method of its own determination, which may include a CEP workgroup. Department chairs and the Associate Dean for Curriculum are welcome to provide input on candidates.
- CEP is encouraged to select faculty from different departments to serve in these roles to ensure inclusion and representation of as many departments as possible in creating and delivering the curriculum.

Metrics to Evaluate the New Curriculum

Establishing metrics for evaluation of the new curriculum will be important from a continuous quality improvement standpoint. We will need to identify and understand the successes within the new curriculum, as well as the curricular components that warrant further revision and refinement. An abbreviated list of proposed institutional metrics includes, but is not limited to:

- Graduation Competencies (GC)
 - Map courses and sessions to GC framework.
 - Track and report student attainment of GC milestones.
- LCME Curricular Element Compliance
 - Review curriculum in context of elements most commonly cited.
 - Review curriculum in context of elements most challenging for our institution.
 - Review curriculum in context of elements most recently introduced/modified.
- AAMC Graduation Questionnaire
 - Track and report annual trends.
 - Correlate results with feedback from courses and curricular phases.
- Student Feedback (Faculty, course, and curriculum evaluations)

- Track and report annual trends, including faculty response.
- Faculty Satisfaction
 - Track and report satisfaction with curriculum (e.g., content, sequence, integration, ease of modifying content, course leadership).
 - Track and report satisfaction with teaching experience (e.g., student engagement and learning, collaboration with other faculty).
 - Track and report satisfaction with institutionally-provided support (e.g., staff, technology tools, faculty development, funding).
- Curricular Content and Delivery
 - Incorporate three pillars, five threads, and core clinical presentations.
 - Align with [USMLE Content Outline](#) and national organization learning objectives and competencies as appropriate.
 - Conduct and report periodic faculty peer review.
 - Monitor quality, type, and number of active learning sessions.
 - Monitor outcomes of early clinical exposure in pre-clerkship phase.
 - Monitor adherence to weekly contact hours policy in pre-clerkship phase.
 - Monitor adherence to duty hours policy in clerkship and post-clerkship phases.
- Student progression and development
 - Monitor student progression through coursework.
 - Monitor student preparedness for clerkships and post-clerkship phase, including clinical skills acquisition, and efficacy of any remediation efforts.
 - Monitor student accomplishment of expected clinical encounters/procedures at appropriate levels of responsibility.
 - Monitor outcomes of early specialty exposure in pre-clerkship phase.
 - Monitor formal availability, participation in, and outcomes of mentorship and research opportunities.
 - Monitor participation in and outcomes of areas of scholarly concentration.
 - Monitor measures of student wellness in collaboration with Student Affairs.
- Standardized Exam Performance – Step 1, Step 2 CK, Step 2 CS, and CPX
 - Report annual trends in USMLE and CPX performance.
 - Compare average class performance to anticipated class performance.
- Residency and Match Outcomes
 - Report residency match rates for our students.
 - Report students who matched into discipline of choice.
 - Survey program directors regarding graduate preparedness as interns.
 - Survey graduates regarding UME experience and preparation for residency.

Next Steps After Plan Selection

Once a plan is selected, Associate Dean Olson will continue to collaborate with CEP and faculty to embark on implementation planning for each phase of the curriculum. Additional resources needed for plan implementation are described in [Appendix E](#). Detailed plans can be found in the full proposal.

Appendix A. Current UCD School of Medicine Curriculum Map

	July	August	September	October	November	December	January	February	March	April	May	June		
	FOUNDATIONS BLOCK						MECHANISM & DISEASE BLOCK							
Year 1	Gross Anatomy						Endocrine / Nutrition / Reproduction / Genetics (E.N.R.G)							
	Human Physiology						General Pharmacology							
	Cell and Tissue Biology						Oncology		Microbiology					
	Molecular Medicine						General Pathology		Immunology					
	Population Health and Evidence-Based Medicine						Critical Appraisal of Topics in Population Health							
	Health and Humanity						Health and Humanity							
	Clinical Skills A						Clinical Skills A							
	Clinical Experiences A						Clinical Experiences A							
	BRAIN & BEHAVIOR BLOCK				PATHOPHYSIOLOGY BLOCK									
Year 2	Clinical Neurosciences		Musculoskeletal	Dermatology	Hematology	Pulmonary & Cardiovascular System	Nephrology		Gastroenterology		USMLE Prep Period			
	Neuroanatomy													
	Psychiatry													
	Foundations of Bioethics													
	Systemic Pathology		Systemic Pathology				Systemic Pathology							
	Pharmacology B		Pharmacology C				Pharmacology C							
	Population Health & System Science		Population Health & System Science				Population Health & System Science							
	Clinical Skills B		Clinical Skills B				Clinical Skills B							
Clinical Experiences B		Clinical Experiences B				Clinical Experiences B								
Year 3	Transition to Clerkships													
	Internal Medicine		OBGYN		Pediatrics		Family Medicine	Enrichment Block	Psychiatry		Surgery			
	Doctoring 3													
	Primary Care Continuity Clinic													
Year 4	38 weeks of Required Coursework													
	4 weeks of Acting Internship Emergency Medicine		4 weeks of Acting Internship Inpatient Core Specialty		4 weeks of Acting Inpatient Any Specialty		4 weeks of Scholarly Project or Special Study Module		20 Weeks of Additional Electives		Transition to Residency			

Appendix B. Mission-Oriented Curricular Principles

Learner-Centered Elements in the New Curriculum

- Increased emphasis on [Step 1-relevant](#) content and assessment methods, such as [peer instruction](#), [weekly formative quizzes](#), and [NBME custom exams](#) and NBME-style highly integrated exams
- Efficiency in learning through more effective integration, minimization of extraneous [cognitive load](#), and [schedule standardization](#)
- Increased time for [self-directed learning](#) and [student wellbeing](#)
- [e-Learning](#) opportunities for increased flexibility (more online lectures in pre-clerkship curriculum and online coursework for the post-clerkship phase)
- Customization of student learning experience during [intersessions](#) (“discipline days,” [areas of scholarly concentration](#), increased clerkship “selectives” to choose from, and more opportunities and support for remediation)
- Increased emphasis on [clinical reasoning](#) throughout
- Use [entrustable professional activities](#) as a framework for assessment to allow for more frequent learner feedback and greater clarity surrounding learner progression toward readiness for residency
- Optimize preparedness for residency programs through increased [career advising](#) through direct mentorship and strengthening the curriculum as suggested by internal residency program directors
- Enhance student wellbeing and reduce [burnout](#), and is hypothesized to result in higher USMLE Step 1 scores, through high quality [mentorship](#).
- Addition of neurology as a required clerkship, as petitioned for by our students and faculty.

Patient-Centered Elements in the New Curriculum

- Advocating for and [meeting the workforce needs of our communities](#) through training more primary care physicians, specialists, and researchers that directly contribute to serving these communities
- Prioritizing understanding of the [diseases and health care issues of greatest concern for our local communities](#) as outlined in our Community Health Needs Assessment, such as [diabetes mellitus, asthma, cancer, and mental health, and the need for more active living and healthy eating](#)
- Experiencing the “whole patient” perspective – patient signs, symptoms, goals, values, and need for functionality, as well as the family caregiver perspective
- Providing more simulation experiences and standardized patients experiences to better prepare students for caring for clinical experiences
- Incorporating new patient-centered [threads](#): **diagnostic medicine** (including point of care ultrasound), **stages of life** with [fictional families](#) whose health care issues evolve over time (including content relating to pediatrics, geriatrics, sex/gender differences, chronic illness and disability, death and dying), **care for vulnerable populations** (including social determinants of health), and **preventive medicine** (including nutrition, obesity, exercise, sleep, wellness, alcohol, tobacco, and cancer prevention); these will join the already established **pain medicine** thread.

Combined Learner- and Patient Centered Elements in the New Curriculum

- [Earlier clinical experience](#) beginning in the first year, which is particularly important for the [contextualization](#) of biomedical and health systems science:
- The “third pillar” of health systems science, which encompasses much of the complexity of health care delivery for the patient, learner, and practicing physician.
- Greater emphasis on team-based care and [interprofessional education](#) to prepare learners for our complex health care system.
- Emphasizing [greater compassion and empathy for patients](#), in part through addressing wellness and burnout issues in students.

Expanding on Our Strengths

- Incorporating main campus expertise in topics such as veterinary medicine, agricultural science, global health, public health, social science, and informatics into the new curriculum.
- Capitalizing on our location in Sacramento to offer firsthand experience in health care advocacy and policy, with the state capitol building only a few miles away.
- Offering opportunities for students to fully benefit from our expertise and leadership in primary care and clinical/translational research.

Appendix C. I-EXPLORE Curriculum Plan 4-Year Timeline

	August				September				October					November				December				January				February				March				April				May				June				July						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
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Year 2	Pre-Clerkship Phase																																								Clerkship Phase											
	Endocrinology, Gastroenterology, and Reproduction (16 wks)					Interession	Endocrinology, Gastroenterology, and Reproduction (16 wks)										Skin and Musculo-skeletal Systems with Capstones (3 wks)			Winter Break	Brain and Behavior with Capstones (8 wks)								Step 1 Study Period/Electives (8 wks)				Transition to Clerkship	Clerkship Phase																		
Year 3	Clerkship Phase																																								Post-Clerkship Phase											
	Clerkship Phase										Winter Break	Clerkship Phase										Break	Year 4 36 weeks Required + Step 2 CK & CS																													
Year 4	Post-Clerkship Phase																																																			
	Year 4 36 weeks Required + Step 2 CK & CS										Winter Break	Year 4 36 weeks Required + Step 2 CK & CS																																								

Appendix D. Pre-Clerkship Courses/Blocks for Blue Plan

All course names are placeholders and may be modified.

Human Architecture and Function: Gross anatomy, microscopic anatomy (normal histology), clinical history and physical examination skills, and health systems science are merged into one integrated experience. The class may be divided periodically into groups that rotate through different elements of the course, including lecture, cadaveric dissection, and clinical skills training for the corresponding regions of the human body. This approach has the benefit of easing the burden on the current anatomy lab, which is currently at capacity for space. Anatomic prosections may be used in lieu of some dissection experiences, with the potential for assistance in preparing prosections from some surgical specialty departments (e.g., orthopaedic surgery). Embryology and/or radiology content could be shifted out into the organ systems to allow for more longitudinal reinforcement of anatomic concepts and to decompress this course. Advanced concepts in anatomy and microscopic anatomy can be shifted to the post-clerkship phase as specialty-specific biomedical science instruction for smaller groups of students. For example, a more detailed understanding of head and neck gross and microscopic anatomy and neuroanatomy could be provided over a week-long period in the post-clerkship phase for students entering otolaryngology, ophthalmology, neurology, or neurosurgery, building upon the more basic anatomy instruction that all students received in the pre-clerkship phase.

Weekly schedule standardization does not yet take effect for this segment given the logistical complexity, though recorded lectures, active learning, and half days of free study time are encouraged where feasible.

Total time = 8 weeks, 24 contact hours per week.

Molecular and Cellular Medicine: Genetics, biochemistry, physiology, pharmacology, general pathology, clinical skills and experiences, and health systems science (including health and humanity) are merged into one integrated course. Basic, foundational principles are taught here in preparation for the longitudinal exploration of organ-specific molecular and cellular medicine in the organ systems. The afternoon longitudinal clinical preceptor experience begins during this course, alternating with clinical skills content one half-day every other week. Weekly schedule standardization of active learning on MWF mornings. The first week-long intersession occurs immediately after this course. **Total time = 6 weeks, 24 contact hours per week.**

Pathogens and Host Defense. Basic, foundational principles are taught here in preparation for the longitudinal exploration of organ-specific medical microbiology, immunology, and pharmacology. Health systems science content (including health and humanity) is included as well. Afternoon clinical preceptor experiences alternate with clinical skills content one half-day every other week. Weekly schedule standardization occurs with active learning on MWF mornings. **Total time = 5 weeks, 24 contact hours per week.**

Winter break lasts two weeks, followed by the second week-long intersession at the start of January.

Hematology, Cardiology, Pulmonology, and Nephrology. Full integration of biomedical science (“normal”), clinical science (“abnormal”), and health systems science (including health and humanity) occurs in this course for hematology, cardiology, respiratory, and renal topics. Relevant genetics, biochemistry, physiology, pathology, pathophysiology, pharmacology, immunology, microbiology, and threads are included. Afternoon clinical preceptor experiences alternate with clinical skills content one half-day every other week. Weekly schedule standardization occurs with active learning on MWF mornings. The third week-long intersession occurs midway through this course, immediately before **spring break**. **Total time = 19 weeks, 24 contact hours per week.**

Summer break – 8 weeks long (an increase of 3 weeks) with a timing shift to June and July. This is to align better with the traditional summer break and allow for more national, regional, and local summer extracurricular opportunities for our students, including in research.

Endocrinology, Gastroenterology, and Reproduction. Full integration of biomedical science (“normal”), clinical science (“abnormal”), and health systems science (including health and humanity) occurs in this course for endocrinology, gastroenterology, and reproduction. The male GU system is incorporated into reproduction. Relevant genetics, biochemistry, physiology, pathology, pathophysiology, pharmacology, immunology, microbiology, and threads are included. Afternoon clinical preceptor experiences alternate with clinical skills

content one half-day every other week. Weekly schedule standardization occurs with active learning on MWF mornings. The fourth week-long intersession occurs midway through this course. **Total time = 16 weeks, 24 contact hours per week.**

Skin and Musculoskeletal Systems with Capstones. Full integration of biomedical science (“normal”), clinical science (“abnormal”), and health systems science (including health and humanity) occurs in this course for musculoskeletal and dermatologic medicine. Relevant genetics, biochemistry, physiology, pathology, pathophysiology, pharmacology, immunology, microbiology, and threads are included. Embedded throughout this course are occasional capstone cases that bring together multiple systems, particularly with musculoskeletal or dermatologic manifestations. Afternoon clinical preceptor experiences alternate with clinical skills content one half-day every other week. Weekly schedule standardization occurs with active learning on MWF mornings. **Total time = 3 weeks, 24 contact hours per week.**

Winter break lasts two weeks.

Brain and Behavior with Capstones. Full integration of biomedical science (“normal”), clinical science (“abnormal”), and health systems science (including health and humanity) occurs in this course for neuroanatomy, neuroscience, psychiatry, and bioethics. Head, neck and eye disease is incorporated. Relevant genetics, biochemistry, physiology, pathology, pathophysiology, pharmacology, immunology, microbiology, and threads are included. Embedded throughout this course are occasional capstone cases that bring together multiple systems, particularly with neurologic, otolaryngologic, or ophthalmologic manifestations. Afternoon clinical preceptor experiences alternate with clinical skills content one half-day every other week. Weekly schedule standardization occurs with active learning on MWF mornings. **Total time = 8 weeks, 24 contact hours per week.**

Appendix E. Anticipated Resource Needs

Needed Resources

- Curriculum mapping software and staff/faculty time to identify and enter information.
- Turning Point clickers and subscription for Peer Instruction; staff assistance with Peer Instruction on Friday mornings.
- Teaching awards/recognition for faculty and residents who create positive learning environments or excel in educational innovation/integration.
- Appropriate faculty development in medical education, including Problem-Based Learning facilitator training (external consultants).
- Direct funding for faculty time for pre-clerkship, clerkship, and post-clerkship course directors, thread leaders, discipline leaders, scholarly mentors.
- Modification of faculty course, thread, and discipline leader funding formula to incorporate more than course hours (with greater emphasis on elements such as integration, active learning/innovation, and peer evaluation).
- Continued funding for academic coaches and master educators.
- Interim funding/protected time for faculty to help develop new curriculum.
- Dean or Director of Institutional Effectiveness (assessment and evaluation).
- Course, faculty, and student evaluation updates before the new curriculum is implemented (to allow for pre- and post-comparisons).
- Reserved office space for Davis-based faculty to share for office hours and coursework preparation as needed.

Optional Resources

- Director of Workplace Based Assessment (EPAs) (facilitates incorporation into the curriculum).
- Director of Interprofessional Education (works with SOM, SON, and allied health programs to create and implement curricular content).
- Director of Electives (consults with elective and selective course directors, assists with course approval process, informs/consults with students about options).
- Director of Regional Affiliate Engagement (clinical site recruitment and retention, site visits, and faculty development).
- Additional Step 1 preparatory resources (e.g., AMBOSS or Osmosis) for potential curricular incorporation.
- Scribe training (completion before matriculation, as in ACE-PC).
- CME offset funding for community preceptors to benefit from reduced/free UCD CME content, including in pain medicine.