The UC San Diego Health Department of Pharmacy and the UC San Diego Skaggs School of Pharmacy and Pharmaceutical Sciences (SSPPS) offers a one-year specialty residency in critical care pharmacy practice beginning August 1st.

Scope:
UC San Diego Health consists of three acute care hospitals (UC San Diego Medical Center in Hillcrest, Sulpizio Cardiovascular Center, and Jacobs Medical Center which includes former Thornton Hospital) and associated outpatient clinics. UC San Diego Health is also affiliated with Rady Children’s Hospital-San Diego, the Veterans Affairs San Diego Healthcare System, and the Sharp Memorial Hospital Joint Blood and Marrow Transplant Program. The Health System is affiliated with the UC San Diego School of Medicine and the UC San Diego Skaggs School of Pharmacy and Pharmaceutical Sciences. The Department of Pharmacy provides clinical services at all three hospitals, including ICU services in the surgical, medical, burn, neonatal and cardiovascular ICUs, as well as assorted other clinical services.

Purpose:
PGY2 pharmacy residency programs build on Doctor of Pharmacy (Pharm.D.) education and PGY1 pharmacy residency programs to contribute to the development of clinical pharmacists in advanced or specialized practice. PGY2 residencies provide residents with opportunities to function independently as practitioners by conceptualizing and integrating accumulated experience and knowledge and incorporating both into the provision of patient care that improves medication therapy. Residents who successfully complete an accredited PGY2 pharmacy residency should possess competencies that qualify them for clinical pharmacy and/or faculty positions and position them to be eligible for attainment of board certification in critical care.

Program Description:
UC San Diego Health PGY2 critical care pharmacy residency program prepares its graduates to assume positions in critical care areas as a clinical specialist employed by an institution or as assistant professors at a college of pharmacy. Graduates will be prepared to sit for the Board Certification exam in critical care. UC San Diego Health is a university teaching hospital providing the unique capability to engage each of our residents in direct patient care activities, research, administration and project management, and teaching skills.

PGY2 residents will gain the skills to function as the primary ICU pharmacist during their required core ICU rotations, with the expectation that the resident will handle all aspects of the medication process from ordering to administration. Primary responsibilities include rounding with the ICU team(s), designing, recommending, monitoring, and evaluating patient-specific therapeutic regimens that incorporate the principles of evidence-based medicine, addressing all pharmacokinetically-monitored medications, being an active member of the Code Blue team, validating pharmacy orders for ICU patients, and overseeing and directing PGY1 resident and pharmacy student activities. This integration of staffing and clinical services prepares residents for any type of practice environment they may encounter in their future jobs by emphasizing the development of essential skills required for an advanced pharmacy practitioner: independent practice skills, multi-tasking and prioritization.

Teaching activities include regular didactic presentations, leading ICU conferences for fourth year pharmacy students, involvement with UC San Diego SSPPS courses (e.g., conference leader for third year therapeutics course [optional], participation in Critical Care elective [required]), and, as warranted, clerkship preceptorship of PGY1 pharmacy practice residents and fourth-year UCSD pharmacy students. The ability to work independently and to supervise pharmacy students and residents will be emphasized. The resident will also be involved in a research project. Scientific writing is strongly emphasized and the preparation and submission of a manuscript suitable for publication will be expected.
Number of residency positions available: 2 new residents are accepted each year.

House Officer Details:
The annual stipend is currently $54,000. Benefits include medical, dental, and vision insurance. In addition, vacation, sick and professional leave are provided. Please visit the UC San Diego Health Pharmacy Residency webpage for more information about duty hours, leave, benefits, position description, terms of dismissal, and more. Click on the House Officer Policy and Procedure Document: https://health.ucsd.edu/specialties/pharmacy/residency/Pages/Salary-and-Benefits.aspx

Requirements:
A virtual interview (via Skype) in early January is required for non-UC San Diego Health PGY1 residents. On-site will be held during late January through early March. This specialty residency program participates in the ASHP Resident Matching Program. All applicants must be enrolled in the Resident Matching Program. To facilitate this enrollment process and for further information, please visit the following website: www.natmatch.com/ashprmp

If matched with the UC San Diego Residency Program, matched candidates must have all of the following:
1. Graduated from an accredited school of pharmacy with a Doctor of Pharmacy degree
2. Successfully completed a PGY1 pharmacy practice residency
3. Obtained California pharmacy licensure prior to beginning residency (absolute deadline to start = November 1st). The residency offer may be rescinded if the resident does not take the CPJE prior to August 1st or does not pass the CPJE on the first attempt.

Application:
Applications will be accepted when PhOcas opens and due by December 31st. Applications should be submitted through PhORCAS and include the following:

1. Letter of intent. Please address the following items in your letter of intent and how you will play a role in these items. Your letter of intent should be no more than two pages long.
   o Address where you feel critical care pharmacy will be in 5 years.
   o Address your vision of a critical care pharmacist practicing at the top of their license.
2. Current Curriculum Vitae with all experiential completed and anticipated rotations as well as pharmacy work experience.
3. Three electronic references are required. At least 2 of the references should be from preceptors or supervisors who can directly comment on your clinical and practice skills.

   Note: Please have recommendation writers complete the electronic reference form within Phorcas with detailed characteristic and narrative comments. One to two areas of improvement or constructive feedback that the recommender feels the candidate should continue to work on as a PGY2 resident should be identified. No separate letter of recommendation is required.

Program Structure:
- 2-4 weeks of orientation/training/research (duration determined by the resident's previous experience)
- 2017-2018 year: 5 required learning experiences (4 weeks each): Surgical ICU; Medical ICU, Burn ICU; JMC ICU (mixed neuro/medical/oncology); Sulphiozio CVC ICU (primarily cardiovascular)
- 1 required ICU learning experiences must be retaken as an elective – (4 weeks)
- 6 – 4 week long elective learning experiences (may repeat any of the ICU’s)
- 3 weeks research time (including time provided during orientation)

Required Learning Experiences (aka Core Rotations):
Descriptions of each learning experience can be found in PharmAcademic

PGY2 residents will gain the skills to function as the primary ICU pharmacist during their required learning experiences with the expectation that the resident will handle all aspects of the medication process from ordering to administration. Because required ICU experiences will focus on developing the skills necessary to effectively be the lead ICU pharmacist, they will primarily be assigned in the first half of the residency year. Rather than focusing on a specific team, the PGY2 resident will be expected to identify medication-related issues and manage the therapeutic plan of every patient in the unit, regardless of the primary service. The resident will be expected to build relationships with each medical team in the ICU and work proactively with the nurses and physicians to achieve efficient work flow and medication delivery. Daily activities will include: participation in rounds, carrying the Code Blue emergency pager as assigned by the Pharmacist’s schedule, reviewing each patient’s profile for appropriateness of drug therapy, performing pharmacokinetic monitoring on all therapeutically monitored drugs (TDM), validating pharmacy orders on all ICU patients, and overseeing and directing PGY1 resident and pharmacy student activities. This integration of staffing and clinical services prepares residents for
any type of practice environment they may encounter in their future jobs by emphasizing the development of essential skills required for an advanced pharmacy practitioner: independent practice skills, multi-tasking and prioritization.

**Elective Learning Experiences (aka Elective rotations):**
Descriptions of each learning experience can be found in [PharmAcademic](#)

There will be 18 learning experiences the resident can choose their five electives from; and one elective must be a repeat of a required ICU learning experiences. The other electives can be selected from the list below and any of the required ICU learning experiences may be repeated again as a general elective. This will allow the resident the flexibility to tailor their PGY2 experience to an area of interest. Elective learning experiences will generally be scheduled in the second half of the residency year (after the required ICU learning experiences are completed).

- Repeat required ICU
  - MICU
  - BICU
  - SICU
  - Jacobs ICU
  - Sulpizio ICU
- Abdominal Transplant
- Bone Marrow Transplant
- Cardiology
- CT Transplant/Mechanical Assist Devices
- Emergency Department
- Geriatric ED (planned 2017)
- Infectious Diseases
- Operating Room
- Neuro critical care
- Neonatal ICU
- Pulmonary Thromboendarterectomy (planned 2017)
- Pediatric ICU (Rady's)
- Trauma
## Resident Learning Experiences and Rotation Schedule (Example)

<table>
<thead>
<tr>
<th>Rotation</th>
<th>Dates</th>
<th>Resident A</th>
<th>Resident B</th>
</tr>
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<tbody>
<tr>
<td>Orientation</td>
<td>8/1-8/18/17</td>
<td>See attached schedule</td>
<td>See attached schedule</td>
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<tr>
<td>Research week 1</td>
<td>8/21-8/25/17</td>
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</tr>
<tr>
<td>1</td>
<td>8/28-9/22/17</td>
<td>Jacobs ICU</td>
<td>MICU</td>
</tr>
<tr>
<td>2</td>
<td>9/25-10/20/17</td>
<td>Sulpizio ICU</td>
<td>SICU</td>
</tr>
<tr>
<td>3</td>
<td>10/23-11/17/17</td>
<td>MICU</td>
<td>BICU</td>
</tr>
<tr>
<td>Research week 2</td>
<td>11/20-11/24/17</td>
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<td></td>
</tr>
<tr>
<td>4</td>
<td>11/24-12/29/17</td>
<td>SICU</td>
<td>Jacobs ICU</td>
</tr>
<tr>
<td>Extra week for ASHP/Holidays</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1/1-1/26/18</td>
<td>BICU</td>
<td>Sulpizio ICU</td>
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<td>Elective 2</td>
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<td>8</td>
<td>4/2-4/27/18</td>
<td>Elective 3</td>
<td>Elective 3</td>
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<td>Research week 3</td>
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<td>10</td>
<td>5/7-6/1/18</td>
<td>Elective 4</td>
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<tr>
<td>11</td>
<td>6/4-6/29/18</td>
<td>Elective 5</td>
<td>Elective 5</td>
</tr>
<tr>
<td>12</td>
<td>7/2-7/27/18</td>
<td>Elective 6</td>
<td>Elective 6</td>
</tr>
<tr>
<td>Finalize projects</td>
<td>7/30-7/31/18</td>
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**Orientation**
- August 1-18, 20xx

**Required learning experiences:**
- MICU (4 weeks), SICU (4 weeks), BICU (4 weeks), Sulpizio ICU (4 weeks), Jacobs ICU (4 weeks),
Elective learning experiences:
Abdominal transplant, bone marrow transplant, burn service, cardiology, CT transplant/Mechanical assist device, emergency department, geriatric emergency department, infectious disease, Jacobs ICU, Sulpizio ICU, medical ICU, neonatal ICU, operating room, pediatric ICU, surgical ICU, trauma, pulmonary thromboendarterectomy, neurocritical care (1 month each)

Research
3 weeks total (see above schedule)

Staffing:
Staffing will be incorporated into the residency experience with weekend shifts that provide the opportunity for PGY2 residents to cover 1-3 ICU’s simultaneously. The PGY2 critical care residents are required to staff 16 weekends (which includes 1 minor holiday weekend PLUS 1 major holiday (Thanksgiving, Christmas, or New Year’s). The resident will get 13 paid days for holidays and 12 sick days for the academic year. Vacation time will be in accordance with GME rules and will be defined as 20 days of vacation PLUS 5 days for professional leave to attend meetings or conferences. Please refer to House Officer Policy and Procedure Document for more detailed information about vacation.

Resident Project:
The resident will be responsible for conducting a resident project throughout the academic year that will be completed and presented at the Western States Conference or an equivalent conference. If time allows, the resident will be involved with the initiation of a second project. This initiation phase will involve defining the study design, writing up the protocol and beginning the IRB approval phase. The purpose of starting a second project is to facilitate subsequent critical care residents who can then finish the projects that were started the previous year. A list of project ideas will be generated from the ICU preceptors and the resident is expected to select a project during the first month of the residency year.

Quarterly Evaluation:
The PGY2 resident will track their progress and development in the areas practice management, clinical quality improvement projects (if not a part of year-long resident project), medication use evaluation, formulary modification, and effective education or training to health care professionals or health care professionals in training. The RPD will review this quarterly evaluation with the resident during their quarterly meeting and update the resident's customized training plan, as needed. Items which may be included and/evaluated in this longitudinal rotation include practice management opportunities such as guideline creation, orderset review, formulary monographs, and other practice leadership opportunities. Effective education opportunities will also be evaluated and may include clinical forums (4 required during residency), journal clubs (4 required during residency), inservices (as possible), teaching opportunities (i.e. critical care elective, ART facilitation or lecture), and on-demand evaluations as they arise.

Presentations and Teaching:
The resident will have the opportunity to give many educational lectures to their colleagues throughout their residency year. Residents are expected to provide one inservice per rotation (to the physicians and/or nurses). Additional teaching expectations are listed below. More information about these opportunities can be found in the Resident Manual.

Grand Rounds: The resident will deliver a 1-hour CE lecture to the pharmacy staff regarding a topic in critical care. Residents can either present individual topics at various times of the year or they could present a topic together. Grand Rounds presentations need to be presented to the project preceptor at least two weeks in advance for feedback and comments. Failure to do so will result in delay of the presentation. A full ‘run-through’ presentation must be schedule at least one week in advance of the planned presentation in order to provide a seamless educational lecture.

ICU Pharmacy Clinical Forums and Journal Clubs: Residents are required to present four clinical forums and four journal club presentations during the year at our Pharmacy Clinical Forum. Clinical Forums are clinically focused 20-minute presentation based on a recent patient case. The resident is encouraged to discuss topics related to the ASHP supplemental Appendix for an Advanced Practice Residency in Critical Care for these presentations. Journal Club topics should be focus on critically reviewing a recently published journal article related to critical care. All Clinical Forum and Journal Club presentations need to be presented to the project preceptor at least one week in advance for feedback and comments. Failure to do so will result in delay of the presentation.
**Critical Care Conference:** The resident will be encouraged to lead/coordinate a weekly critical care conference with the ICU students and PGY1 residents. Topics may vary according to the discretion of the resident, but typically include: how to work-up/present patients, sedation/analgesia/paralytics, Surviving Sepsis, hemodynamics, antibiotic review, acid-base, ACLS. Leading the conference provides residents the opportunity to practice a variety of teaching styles and improves their understanding of and ability to teach fundamental ICU topics.

**Teaching - Skagg’s School of Pharmacy and Pharmaceutical Sciences:** Involvement with UCSD's School of Pharmacy will vary but the resident is required to participate in the Critical Care elective (SPPS 274) leading case conferences and the ACLS hands-on learning experience at the Sim Lab. The resident may be asked to write up cases for therapeutics conference based on real patients and prepare exam questions based on the lectures presented. PGY2 Critical Care residents may also choose to be a conference leader for one of the therapeutics course for 3rd year pharmacy students. Residents will also have multiple opportunities to directly precept students who are currently on rotation with the resident. Participation in the Teaching Certificate program is optional and will be discussed on a case by case basis. Please refer to the Residency Manual for more information on these topics.

**Publication:** The resident will be required to write a manuscript suitable for publication by the end of their residency year. The purpose of this requirement will be the development of scientific writing and communication skills. The types of publishable literature can include any of the following types of manuscripts:
- Case Reports with a review of relevant literature
- Primary research/original research
- Medication Use Evaluation
- Meta-analysis of a disease state or therapy
- Review article

**Meetings:** The residents will have the opportunity to attend various professional meetings throughout the year. The annual travel stipend is variable based on funding. In the past, residents have received a set stipend for the year which they can use at their discretion for registration, travel, accommodations, etc. The cost of attending Western States (or an equivalent conference) will be deducted from the travel stipend, along with any other conferences the resident chooses to attend. Residents are encouraged to attend a specialty meeting (e.g. Society of Critical Care Medicine Annual Congress). Attendance at Western States Conference (or an equivalent conference to present their resident project) is mandatory.

**Assessment Strategy – PharmAcademic:** The PGY2 Critical Care Specialty Residency Program uses the ASHP on-line evaluation tool called PharmAcademic, which is available for all ASHP-accredited pharmacy residency programs. This system, which is technologically supported by the McCreddie Group, supports the ASHP Residency Learning System (RLS).

Residents who are matched with this PGY2 specialty program are entered into PharmAcademic prior to their arrival in August. The incoming resident completes two pre-residency questionnaires that help the Residency Program Director (RPD) design a residency year that is tailored to the specific needs and interests of the resident:
- ASHP Standard Entering Interests Form
- Goal-Based Entering Interests Form

Residents’ schedules and assigned RLS Goals are entered into PharmAcademic. We have chosen to use the PharmAcademic evaluation tools for our Learning Experiences. For each Learning experience, the following Assessments are completed:
- Preceptor Assessment of Resident: Summative (for each Learning experience)
- Resident Self-Assessment: Summative-self (for each Learning experience)
- Resident Assessment of the Learning Experience
  - Resident assessment of Preceptor
  - Resident assessment of Learning Experience

Preceptors and residents are encouraged to exchange in on-going, daily verbal feedback throughout each rotation experience. Six-week block rotations have a mid-point summative evaluation as well. The Resident and Preceptors are trained and reminded throughout the year to complete evaluations in a thorough (quantitatively and qualitatively) and
timely manner. To this end, evaluations may be used, not only as assessment tools, but as tools that Preceptors may turn to for help in guiding Residents to improve, grow and achieve the residency programs and the residents’ goals and objectives for the residency year. The RPD reviews all evaluations and solicits verbal feedback from preceptors and residents to provide guidance to help the resident maximize the residency experience.

The Residents discuss their Program goals and interests quarterly (Quarterly Update and Customized Training Plan) with the RPD Form to evaluate where they are in meeting the residency goals and to set or modify goals for the remaining six months of the residency program. Residents may meet as needed as their interests change throughout the year. The resident may request schedule modifications throughout the residency year and the RPD will make all efforts to accommodate these requests. Assessment tools will be adjusted as changes are made.

The Resident complete the ASHP PharmAcademic exit evaluation. Residents also are requested to complete a year-long evaluation of the Residency Program.

The results of these year-end Program evaluations are reviewed by the RPD for potential merit and potential action plans are developed in an effort to achieve continuous quality improvement.

### Assessment Overview (PGY2 Critical Care)

*It is the resident’s responsibility to initiate the evaluation process with each rotation preceptor prior to the end of each learning experience and to schedule at least quarterly meetings with the residency director.*

<table>
<thead>
<tr>
<th>Learning Experience</th>
<th>Type of Assessment</th>
<th>Frequency</th>
<th>Resident Self-Assessment (summative)</th>
<th>Preceptor Assessment of Resident (summative)</th>
<th>Resident Assessment of Preceptor and Experience</th>
<th>RPD Assessment of Resident (Quarterly eval)</th>
<th>RPD Snapshot of Resident</th>
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PGY2 Critical Care Competency Areas, Goals and Objectives (2016 Standard):

- Educational Outcome: broad categories of the residency graduates’ capabilities.
  - Outcome R1: Patient Care
  - Outcome R2: Advancing Practice and Improving Patient Care
  - Outcome R3: Leadership and Management
  - Outcome R4: Teaching, Education, and Dissemination of Knowledge

- Educational Goals: Goals listed under each outcome are broad sweeping statements of abilities.
- Educational Objectives: Resident achievement of educational goals is determined by assessment of the resident's ability to perform the associated educational objective below each educational goal.

The resident is encouraged to read detailed information about each goal at the ASHP website (click on Critical Care Pharmacy (PGY2), 2016) https://www.ashp.org/Professional-Development/Residency-Information/Residency-Program-Directors/Residency-Accreditation/PGY2-Competency-Areas

For information about Goals and Objectives Taught/Taught and Evaluated in Learning Experiences, please visiting PharmAcademic, go the 'Reports' tab, and click on ‘Goals and Objectives Taught/Taught and Evaluated in Learning Experiences’.

PGY2 Critical Care Residency Requirements for Completion/Graduation:

- Successful completion, all learning experience all learning experience objectives marked satisfactory progress (SP), ACH or achieved for residency (ACHR) by the final evaluation, of all learning experiences. Any expectations of the residents that are not met or learning objectives with needs improvement (N/I) from an on-demand or scheduled evaluation will result in a meeting between the learning experience preceptor, RPD, and resident and a plan of correction will be formulated. Failure to complete the plan of correction, may result in disciplinary action.
- ≥90% of RLS goals marked “Achieved for the Residency” by the end of the year (as evaluated by individual rotation preceptors or by the RPD upon final review of the resident’s progress). All patient care goals (Outcome R1: Patient Care) and objectives must be achieved.
- Completion of required presentations: 4 Journal Clubs, 4 Clinical Forums, 1 Grand Rounds
- Completion of a residency project; including presentation at a suitable conference/meeting and completion of a project ‘write-up’ in a manuscript suitable for publication (does not need to be submitted for publication)
- Submission of a manuscript for publication (does not have to be accepted)
- Participation in the Critical Care elective (as described above)
- Twelve months minimum is allotted to successfully complete the core requirements. If a core rotation must be repeated, then elective time shall be used. If the above requirements are not met in full, the residency certificate may be withheld at the discretion of the residency director.