

Neuropathology Progressive Goals and Objectives

Competency	Core Rotation - 1st to 3 rd Year Resident Beginning of Rotation	Core Rotation – 1 st to 3 rd year Resident Later in Rotation	Elective Rotation - 3rd and 4th year Resident	Fellow First Year	Fellow Second Year Post Fellowship Experience
Professionalism	Reliable, punctual, appropriate appearance, ethical behavior, sensitive to issues of diversity, HIPPA compliant	Same as near beginning of rotation but projects more confidence and handles difficult situations with greater ease.	In addition to elements already noted, can help advise more junior trainees and serve as a more senior role model.	In addition to elements noted for residents, functions so that others perceive fellow more like a junior faculty member. Create a professional CV. Conduct a successful job search if not continuing as a fellow.	In addition to prior accomplishments, interacts with other faculty and clinicians like a more confident junior faculty member, able to construct and maintain professional c.v. and biosketch
Patient Care	Preview neuroradiology with direct faculty guidance. Review cases, record observations, formulate differential diagnosis.	Preview neuroradiology semi-independently, directly interact with technologists. Review cases, record observations, formulate more complete differential diagnosis	Write and dictate reports for most routine cases.	Independently work-up and complete the majority of cases.	Able to provide a complete diagnostic report to attending faculty with minimal required changes.

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	Formulate list of immunohistochemical stains and molecular diagnostics to resolve differential diagnosis. Review data from ancillary studies and record interpretation.	Formulate more pertinent list of immunohistochemical stains and molecular diagnostics to resolve differential diagnosis. Review data from ancillary studies and record more complete interpretation.	Independently order ancillary studies in a resource conscious way on most routine cases.	Independently order ancillary studies in a resource conscious way on routine and most complex cases.	Independently order ancillary studies in a resource conscious way on virtually all cases.
	Gross specimens for glioma work-up with directed supervision.	Gross specimens for glioma work-up with supervision as needed (after consulting fellow or appropriate faculty).	Gross specimens for glioma work-up with limited supervision and select ancillary testing independently for most routine cases.	Gross specimens for glioma work-up with very limited supervision and select ancillary testing independently for the majority of cases. Be able to help instruct junior trainees.	Able to gross and triage specimens independently and to supervise and instruct more junior trainees.
	With explicit directions, interact with clinicians and support staff.	With less explicit directions, interact with clinicians and support staff.	Function as a critical consultant to clinical physicians and support staff with some supervision.	Independently function as a critical consultant to clinical physicians.	Able to supervise more junior trainee's presentations and provide guidance for preparation.
	Be able to provide basic review of neurological history	Be able to provide basic review of neurological history,	Provide consultative/laboratory report for general and special	Provide consultative/laboratory report for general and	Provide consultative/laboratory report for general and

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	and interpret most common neuroradiology tests.	CSF analyses and interpret most standard neuroradiology tests.	neuropathology tests, cerebrospinal fluid reviews working with faculty on more complex cases and with limited assistance on less complex cases.	special neuropathology tests, cerebrospinal fluid reviews relatively independently but with final approval by faculty member.	special neuropathology tests, cerebrospinal fluid reviews relatively independently with only limited supervision.
	Observe how others handle laboratory management issues.	Participate with faculty/senior technical staff in laboratory management issues.	Get directly involved in laboratory management issues with supervision.	Get involved in laboratory management issues with more limited supervision.	Participate in continuing education of technologists and support staff to improve patient care.
	Present at inter-departmental QA conferences with extensive supervision.	Present at inter-departmental QA conferences with less direct supervision.	Present at inter-departmental QA conferences with limited supervision.	Independently present at inter-departmental QA conferences.	Presents cases at clinical QA conferences without supervision.
Medical Knowledge	Knowledge of morphology and immunophenotype of normal brain, muscle and nerve. Knowledge of multiparameter approach to diagnosis of neurological disorders.	Know criteria for major neoplastic and non-neoplastic neuropathological entities. Know specific approach used to diagnose major neoplastic and non-neoplastic neuropathological entities.	Know criteria for some of the less common neuropathological entities in addition to those for major entities.	Have an extensive knowledge of broad range of neoplastic and non-neoplastic neurological disorders and other disorders that involve or affect the nervous system including the pathologic and clinical aspects of these disorders.	Further increase neuropathology knowledge base in terms of rare entities and variations within more common entities. Learn more about the type of cases that lack a definitive diagnosis. Demonstrates ability to apply and discuss knowledge learned from

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					instructional workshops or conferences attended.
	Recognize some of the more common neoplastic and non-neoplastic disorders. Know basic immunophenotypic/genotypic/molecular features where appropriate.	Recognize additional common neoplastic and non-neoplastic disorders and know ways in which specific entities are further subdivided. In addition to basic ancillary data features, know pathophysiologic features of major entities.	Recognize most common and some uncommon neoplastic and non-neoplastic disorders of the nervous system and know the immunophenotypic and genotypic characteristics. Completes more of appropriate checklists and sees more entities previously encountered through reading.	Recognizes broad range of neurological disorders and recognizes when a definitive diagnosis cannot be rendered or where consultative help may be required.	Demonstrates an appreciation of the limitation(s) of current diagnostic schemes/classification systems (i.e. shows recognition for “gray zones” in diagnosis).
	Know basic components of CSF analysis and how they are obtained.	Know basic components of complete CSF analysis and other major neurological and radiological tests and how they are obtained including major pitfalls. Know disease entities where diagnosis is based in large part	Know full armamentarium of neuroradiological testing, the purpose of each test and how to interpret combinations of tests. Know new developments in imaging technology	In addition to resident accomplishments, know details of more esoteric testing (e.g. PET) and what is on the horizon for laboratory neuropathology. Know how to evaluate new instrumentation.	Be able to teach others about laboratory neuropathology including factual and interpretive elements.

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		on neuropathology laboratory testing.			
Practice-based Learning	Become familiar with basic neuropathology educational resources.	Search literature for information pertaining to cases and apply it to diagnostic appraisals at sign-out and at conferences.	Critically analyze literature and other sources of new information pertaining to cases.	Have a broad knowledge of the neuropathology resources and literature and be able to apply this information to daily practice including dealing with unusual cases	Master all skill expectations listed for more junior residents and first year fellow. Use information independently to alter personal practice.
	Start to develop diagnostic differentials for some of the more common neoplastic and non-neoplastic disorders with significant faculty input. Construct reports based on others' examples.	Knows the differential diagnoses to consider for more commonly encountered neoplastic and non-neoplastic disorders. Improve reports based on comments received back from the faculty.	Able to construct more extensive differentials and apply knowledge by deciding what stains and ancillary testing would aid in distinguishing amongst the diagnostic possibilities being considered. Produce reports based on comments received back from the faculty who require few, if	Demonstrates ability to use textbooks and medical literature to construct a differential diagnosis for most cases and decide what ancillary testing would be useful. Develop complete reports that reflect divisional style based on continued input from	Demonstrates ability to apply knowledge from medical literature in constructing a diagnostic differential or choosing an appropriate work-up strategy of stains, ancillary testing, etc. Have established style for producing final reports that reflects an integration of input from

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			any, changes.	<p>faculty, integrating the best suggestions from varied individuals.</p> <p>Independently use other colleagues and faculty as learning resources.</p>	<p>varied faculty and integrate additional suggestions received on reports.</p> <p>Demonstrates ability to utilize other professional colleagues as learning resource(s).</p>
Interpersonal/ Communication Skills	Present with clarity in conference settings with significant faculty guidance.	Present with clarity in conference settings with minimal faculty assistance.			
	Works well with technologists and support staff and learns from them.	Greater interaction with technologists, including demonstrating an ability to teach them.	Can serve as a greater resource for technical staff.	Demonstrates the ability to present information to technologists and junior residents at levels appropriate for the audience.	Able to educate technologists and residents with ease in more impromptu settings as appropriate. Proactively seeks opportunities to educate others.
	Contact clinicians to obtain clinical and other information.	Able to convey straightforward information to clinicians.	Discuss preliminary reports and diagnoses with clinicians with ease. Able to convey more complex information to	Able to convey complex information to clinicians and consulting pathologists and can	Able to function as a junior faculty in terms of providing consultative information to staff

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			clinicians and consulting pathologists.	answer questions about diagnoses or work-up. Also able to discuss clinical implications of diagnoses in depth.	pathologists at UPMC and elsewhere as well as with clinicians.
System based Practice	Know and utilize basic aspects of resources available in health system i.e. computer systems (Copath, MARS), laboratories (molecular diagnostics, histology), grossing of autopsy brains.	Know and more fully utilize resources available in health system.	Learn about outside regulatory agencies/organizations. Develop an appreciation of basic healthcare/pathology related financial issues. Perform a mock CAP inspection, if possible.	Learn about the administrative and technical functions of running the Division of Neuropathology. Perform a mock CAP inspection, if possible.	Demonstrates understanding of more complex personnel management issues. Understands the various components of a diagnostic neuropathology service and the interaction with other related, but separate services, such as molecular laboratories. Has basic understanding of hospital budgetary issues that may be specific to neuropathology or pathology in general.