CHEMISTRY 399 - UNDERGRADUATE RESEARCH
CHEMISTRY 499W - UNDERGRADUATE RESEARCH AND REPORT WRITING
2007-2008 PROJECT INFORMATION SHEETS

Chemistry 399 and 499W are variable credit courses intended for upper-division students. They are offered on a Credit/No Credit basis, and students should have at least a 3.0 chemistry gpa. **A maximum of 12 credits each of 399 or 499W can apply toward degree credit requirements.** After a student has approval to register from a Faculty Supervisor, faculty add codes may be obtained in the Chemistry Advising Office, Bagley 109. When approaching faculty to discuss pursuing research, determine whether writing will be a component of the research. ***If writing is NOT required, students should register for CHEM 399. If report writing IS required, students should register for CHEM 499.***

Professor	Field	Required Background	Type of Work Involved
N. Andersen 204D CHB 543-7099 andersen@chem. washington.edu	bioorganic/ biophysical	through CHEM 347; CHEM 460 or some NMR preferred; students should be planning careers in chemical or health science research	protein and peptide structure and dynamics elucidation; peptide synthesis, 2-dimensional NMR; protein folding-- computational simulation; circular dichroic studies of peptide conformation
L. Burgess 145 CHL 543-0579 burgess@cpac. washington.edu	analytical	through organic chemistry and CHEM 321 (physical chem helpful)	development of instrumentation applications using optical fibers for chemical sensing
J. Callis 204A BAG 543-1208 callis@cpac. washington.edu	analytical/ biophysical	desire to do research; independence of thought and action	development of new scientific instruments, especially at the interface of chemistry and biology; examples: • visualizing flow of air over wings of insects in flight • visualizing oxygen consumption by cells
C. Campbell 227 BAG 543-3287 campbell@.chem. washington.edu	physical/analytical	open	solving surface science problems related to more efficient energy utilization and to environmentally cleaner chemical processes, especially in catalysis and problems in biosensor development
D. Chiu 209 BAG 543-1655 chiu@chem. washington.edu	bioanalytical/ biophysical	strong motivation	instrumentation, microfabrication, and biochemistry

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L. Dalton 202 BAG 543-1686 dalton@chem. washington.edu	physical/organic/ materials chemistry	general chemistry	synthesis of organic and polymeric compounds; simple computer computations; work with analytical instrumentation; work on the processing of organic/polymeric materials into practical devices such as electro-optic modulators, fiber optical amplifiers, photovoltaic cells, etc.
G. Drobny 126 BAG 685-2052 drobny@chem. washington.edu	physical	full year organic and physical chem; some biochemistry; senior standing in chemistry	studies in nuclear magnetic resonance; computer simulations of NMR experiments; structural problems in biopolymers; synthesis of isotopically labeled biopolymers; design and fabrication of analog and digital circuits
D. Gamelin 204K CHB 685-0901 gamelin@chem. washington.edu	physical / inorganic / materials	flexible. CHEM 455, 456, 457 and/or CHEM 317 strongly recommended (concurrent registration is okay).	spectroscopic studies of transition metal and rare earth metal ions in inorganic nanoscale materials; research entails inorganic synthesis, spectroscopy, calculations, and analysis
R. Gammon 211 BAG 543-1609 gammon@chem. washington.edu	environmental/ analytical	organic chemistry and CHEM 321	analysis of air and water samples by gas chromatography; biogeochemical cycles of carbon, sulfur, nitrogen, and halogens; atmospheric chemistry and climate change
D. Ginger 213 BAG 685-2331 ginger@chem. washington.edu	physical and materials chemistry/ nanotechnology	desire to learn by working hard; minimum time commitment required is 15 hours/week for at least 3 quarters	will vary with background; nanoparticle synthesis and biofunctionalization, optical spectroscopy, atomic force microscopy, optoelectronic device fabrication and characterization
K. Goldberg 304H CHB 616-2973 goldberg@chem. washington.edu	inorganic/ organometallic	general and organic chemistry and CHEM 317	syntheses of organometallic compounds; kinetic, thermodynamic and mechanistic studies of their reactions
M. Heinekey 304F CHB 543-7522 heinekey@chem. washington.edu	inorganic	general chemistry ; organic lecture and lab; CHEM 317	organometallic chemistry; synthesis and spectroscopic measurements on new complexes
R. Klevit K466A HSB 543-7099 klevit@u. washington.edu	biochemistry/ biophysical	BIOC 440 series or concurrent registration; physical chemistry or concurrent registration	structure of proteins involved in human disease; protein purification; NMR studies of proteins; honors thesis projects available

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J. Kovacs 304B CHB 543-0713 kovacs@chem. washington.edu	bioinorganic/ organic synthesis	general chemistry; organic lecture and lab; CHEM 317 recommended	synthesis of N - and S - containing ligands and their corresponding metal complexes as models for biological enzyme active sites
K. Krohn NW-055 UWMC 598-6245 kkrohn@u. washington.edu	analytical/ nuclear	general chemistry	synthesis of labeled tracer molecules and their use to study *in vivo* chemistry using positron emission tomography and nuclear magnetic resonance techniques; development of remote synthesis for radioactive tracers; gas and liquid phase hot atom chemistry
X. Li 307 BAG 685-1804 li@chem. washington.edu	physical/ theoretical/ computational	physical chemistry; interest in computer simulation and programming	simulations of electronic dynamics in strong laser fields; computational studies of organic and biochemical reactions, thermochemistry and reactivity of coenzyme catalysis in particular
J. Mayer 304D CHB 543-2083 mayer@chem. washington.edu	inorganic/ organic/ organometallic/ bioinorganic	general and organic chemistry; CHEM 317 would be nice	synthesis of novel inorganic and organometallic molecules; kinetic and mechanistic studies; spectroscopy; models for biochemical processes
F. Michael 204A CHB 616-5179 michael@chem. washington.edu	organic/ organometallic	through CHEM 239 or 337 and CHEM 242 or 347	development of new reactions; organic synthesis; studies of mechanisms
M. Olmstead 151 PHY 685-3031 olmstead@phys. washington.edu	physical	physical chemistry (concurrent enrollment ok)	kinetics of crystal growth by molecular beam epitaxy; surface and interface structure determination
O. Prezhdo 323 BAG 221-3931 prezhdo@u. washington.edu	physical	physical chemistry or physics and/or programming	computer simulations of quantum and classical dynamics of chemical reactions in condensed phases
M. Raschke 227 BAG 543-2906 raschke@chem. washington.edu	physical /physics	upper level physics, physical chemistry, or engineering background	nonlinear and ultrafast laser spectroscopy; scanning probe microscopy (STM, AFM); study electron and vibrational dynamics in nanostructures

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P. Rathod 192 BAG 616-5179 rathod@chem. washington.edu	biorganic, genomics, microbiology	very strong academic record; dedication to develop research skills	malaria biochemistry and malaria pharmacology
S. Raucher 204K CHB 543-1205 raucher@chem. washington.edu	organic	through CHEM 239 and 462	new methods in synthetic organic chemistry; synthesis of biologically important compounds
P. Reid 210 BAG 543-6147 preid@chem. washington.edu	physical/ environmental	through organic chemistry; CHEM 455, 456, 457 (concurrent enrollment ok)	spectroscopic studies of reaction dynamics on the femto and picosecond timescale; spectroscopic modeling via computers; instrument design and development involving lasers
B. Reinhardt 305A BAG 543-0578 rein@chem. washington.edu	physical/ theoretical/ computational	interest in computers and mathematical approaches to chemistry; CHEM 455 and/or 456 helpful, but not required	computer simulations of thermodynamic properties of liquids and solids; dynamics of the Bose-Einstein condensate; development of graphics and simulation software for teaching and research; Cellular Automata and "A New Kind of Science."
B. Robinson 212 BAG 543-1773 robinson@chem. washington.edu	physical/ biophysical	either physical chemistry, or organic chemistry and laboratory, or computation experience	study either: A) dynamics of nucleic acids; or B) membrane bound proteins by magnetic resonance; or C) organic, non-linear optical chromophores in a biological context.
J. Ruzicka 106 CHL 543-4644 ruzicka@chem. washington.edu	analytical	general chemistry; CHEM 321 or equivalent	automated analysis by flow injection using spectroscopy; chemiluminescence; enzymatic assays and chemical separations; fermentation monitoring and cytochemical analysis; immunoassays
T. Sasaki 204H CHB 543-6590 sasaki@chem. washington.edu	bioorganic/ organic	organic; some biochemistry preferred	synthesis, purification and conformational studies of small peptides
R. Synovec 201A BAG 685-2328 synovec@chem. washington.edu	analytical	through organic chemistry and CHEM 321; current or previous enrollment in CHEM 429 is recommended	liquid and gas chromatography and application of computers to chromatographic studies

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F. Turecek 218 BAG 685-2041 turecek@chem. washington.edu	analytical/organic	through organic chem and CHEM 321; physical chemistry helpful	development of mass spectrometric techniques; organic and bioorganic structural analysis; chemistry of transient radicals; atmospheric radicals
U. Varanasi 2725 Montlake Blvd 860-3200 usha.varanasi@ noaa.gov	organic/ biochemistry	organic chemistry, biochemistry, ecology, biology and oceanography desirable	investigate the impact of environmental stressors (i.e., human-caused or natural alterations) on habitat quality and quantity that can affect ecosystem function or the health of biota, from invertebrates to marine mammals; major activities include researching: 1) the impacts of toxic chemicals on marine and freshwater systems and protected species, 2) the impact of harmful algal blooms on marine food webs, 3) assessing habitat restoration approaches, and 4) using stable isotopes to understand the role of marine-derived nutrients on stream productivity
G. Varani 63C BAG/220 BAG 543-7113 varani@chem. washington.edu	physical/biophysical	course in biochemistry	structure-based drug and protein design; structural biology of gene expression; NMR of proteins and RNA