

State of Alaska FY2002 Governor's Operating Budget

University of Alaska
Fairbanks Organized Research
Component

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Component Mission

As a major center for research and scholarship, the University of Alaska Fairbanks is committed to the mutual enhancement of teaching, research, creative activity, and public service. Scholarship which produces new knowledge instills a vigor into teaching which in turn stimulates inquiry and the quest for further answers to the unknown. The university seeks to use its particular location in the north as a natural laboratory for the study of questions and issues, whose solutions are not only applicable to Alaskan problems but to a broader understanding of our global community. As part of a network of state research universities, this institution has an active program of basic and applied research resulting in a well-earned national and international reputation. Specific recognition has been achieved in space physics, marine science, high latitude biology, environmental sciences, engineering and geophysics. The university has recognized programs in definition, exploration, development and management of Alaska's renewable and non-renewable resources. It is the state's center for study of Alaskan native cultures and languages.

Component Services Provided

UAF is among the top 100 research institutions in the United States and houses the University of Alaska system's organized research effort. Organized research consists of five major research institutes and several smaller laboratories, centers and research facilities that bring in excess of \$60 million of non-state funds into Alaska annually. Research at UAF supports Alaska's major industries and examines problems particular to northern latitudes.

Component Goals and Strategies

Strengthening the UA System by:

- Unity - Capitalize on existing strengths,
- Responsiveness - To state needs,
- Access - To all Alaskan citizens,
- Quality - Recruit/retain quality faculty & students, and
- Efficiency - Cost effective delivery.

Key Component Issues for FY2001 – 2002

UAF is an investment in Alaska's future. In FY 2000, UAF leveraged \$13 million from the State's general fund into \$49.7 million from federal and private sources, returning the State's investment by 380 percent. These dollars are reinvested in the institution's faculty and infrastructure to ensure superior training of graduate and undergraduate students and research that enhances the quality of life of Alaska's people.

Acquiring state-of-the-art research instrumentation and analytical tools provide important and, in some cases, unique assets to attract extramural support and undertake valuable research. These tools also provide exposure and training to undergraduate and graduate students in computational, remote sensing, environmental, and analytical technologies that substantially improve their educational experience at UAF and their competitiveness for employment after graduation.

Maintaining a Solid Foundation:

UAF will build its support staff to provide essential services and to accommodate planned growth. UAF will continue and expand areas recognized for their accomplishments and potential for contribution to science. Included in these will be:

- . High latitude Long-Term Ecological Research sites - These studies will provide insight into their potential for perturbations and recovery from disturbance;

- . Arts and Humanities - provide unique opportunities for expansion of unique and beneficial programs. Included in this category is the UA museum expansion, the Secretariat of the International Arctic Social Science Association and our ability to maintain high quality foundational academic programs related to the preservation and revitalization of Alaska Native languages.
- . Cold Regions Engineering - EPSCoR and the US Dept. of Energy Arctic Energy Laboratory offer immediate enhancement of research capabilities and the potential for employment after graduation.
- . Environmental and Health Sciences - UAF will further develop its programs in these areas by emphasizing environmental science and engineering, contaminants and human environmental physiology, neuroscience and health-related behavior sciences to provide base lines and assessments of environmental and human health.
- . Global Science Interdisciplinary Approaches - Research focused on arctic climate, remote sensing, atmospheric and ocean science, the cryosphere and disturbances in the earth's crust will provide basic information necessary for the north and its environment to be maintained and developed. Although these programs will enhance undergraduate education, the instructional emphasis will be on graduate student training.
- . Alaska EPSCoR Program - Administered by UAF, the statewide EPSCoR program will provide new opportunities for substantial growth in education and research.
- . Administrative support - UAF will continue to develop its new Office of Sponsored Programs to provide needed support for extramural applications. UAF will increase its ability to comply with existing and new federal regulations through the establishment of an Office of Research Integrity and Compliance.

Developing Alaska's Leaders:

- . Through UAF research and educational programs, UAF students will continue to receive training and certification in wide ranging subjects that are relevant to the state including:
 - . Natural resources management (wildlife, forestry, agriculture and fisheries will be emphasized), and efficient energy development, production, and use. Students are being trained to respond to State needs in a changing economy. For example, students undertake projects that are directly involved in research dealing with Alaska's natural resource issues through the Alaska Energy Center.
 - . Environmental and human health of the arctic and sub-arctic research emphasize environmental science and engineering, contaminants and human environmental physiology, neuroscience and health-related behavior sciences. EPSCoR and Special Neuroscience Research Program (SNRP) provide excellent opportunities to begin this effort.
 - . International organizations, indigenous groups, and government agencies recognize the expertise and infrastructure of UAF and have sponsored UAF to serve as the secretariat for the Arctic Climate Impact Assessment. This designation and funding will provide unique opportunities for University of Alaska faculty and students to further develop their leadership capabilities.
- . Developing a training program for professional managers and students in software development, data retrieval, processing and interpretation.
- . Increasing the production of k-12 teachers with a special emphasis on preparing teachers for rural schools.
- . Research on cold weather infrastructure provides new opportunities for improved roads, harbors, and buildings that are suitable for use on permafrost and in seismically unstable locations and that are efficient in cold weather.

Meeting Alaska's employment needs:

Because of the emphasis in UAF research related to environmental studies and the management of Alaska's natural resources many of our graduates are well trained for Alaska's job market to accept state job opportunities. UAF has placed its students in several existing internship programs and is developing additional ones. This approach to education adds relevancy to the student's skills, builds collaborations with industry, and demonstrates UAF's commitment to attend to industry needs. We are expanding our existing internship program to tie into new corporate partners including Raytheon and others. These programs not only provide outstanding training opportunities for its students and positions them well for future employment but also develops important collaborations between the University and industry and increases the potential for meaningful technology transfer from the university to the private sector in the State. UAF is embarking on a program that will expand opportunities to support existing Alaska industries, and to encourage the creation of new ones. Included in these efforts are:

- . Exploring new crops and feed formulations for live stock (including musk oxen and reindeer).
- . New food products from Alaska's fisheries and expansion of Alaska's seafood markets.
- . Improving the quality and applications of Alaska timber products through development of novel technology.
- . Supporting the petroleum industry through research related to natural gas, highly efficient fuels, Gas to Liquid technology and products, and coal-based fuels.
- . Training students in software development, data retrieval, processing, and interpretation.
- . Providing meaningful geophysical information to support the new gas pipeline.

Diversifying Alaska's economy: UAF's multifaceted research efforts have provided successes that have enhanced, stimulated, and developed business opportunities in the state. UAF has recently entered into collaborations with several universities and corporations that, if successful, promise opportunities for intellectual property development, technology transfer, and the further development of student opportunities through training grants, internships, and future job placement. Areas of promise include:

- . Improving programs which assist the State's businesses in incorporating e-commerce and high-technology industries into the Alaskan economy.
- . Expanding cold weather testing for College of Science Engineering and Mathematics and the Institute for Northern Engineering. New and developing programs in engineering include, development of nanotechnology, Gas-to-Liquids technologies, fuel cells, other efficient energy production and increasing enrollment in instructional programs,
- . Guiding on-going programs toward attracting industry to the state or developing new in-state business opportunities (e.g., fuel cell, biotechnology, nanotechnology, remote sensing)
- . Improving global science programs including evaluating sea ice conditions using satellite remote sensing, oceanography and atmospheric circulation to anticipate and model likely sea ice extents related to potential shipping routes.
- . Native health: Acquisition of the Special Neuroscience Research Program (SNRP) and application for NIH's EPSCoR, Center Of Biomedical Research Excellence (COBRE), and the Biomedical Research Information Network (BRIN) programs will allow opportunities for UAF to educate health care workers, as well as to conduct basic research. The major objective of the SNRP award is to establish an Alaskan Basic Neuroscience Program at the University of Alaska to expand, facilitate and stimulate neuroscience research related to the dramatically increasing health problems of the Alaskan Native population. A second objective is to facilitate the development of collaboration research with scientists at other institutions that can contribute to this effort.

Major Component Accomplishments for FY2000

Researchers at UAF continued to successfully compete for external support and obtained in excess of \$60 million from federal, state, and private resources. Many of the awards obtained in FY2000 were from highly competitive national and international competitions. UAF continues to provide national and international leadership in Arctic Research and is moving towards its goal to "Become the world's leader in arctic research and graduate education. The International Arctic Research Center (IARC) in collaboration with the UAF Center for Global Change and Arctic System Research conducted an open competition for an interdisciplinary research program. That program received more than 157 proposals in 6 thematic areas of science. Awards totaling more than 8 million dollars (NSF and NOAA funds) were awarded to 10 foreign, 5 federal, and 18 US universities (including UAF and UAA) and laboratories for two-year research programs. The results of this extensive effort will be coordinated through the IARC to contribute to the international Arctic Climate Impacts Assessment (ACIA). IARC has been designated the ACIA secretariat through a Cooperative Agreement with the NSF. This international effort will gather data sets from around the Arctic for synthesis and assessment of the likely consequences of climate change in the arctic region. The International Arctic Science Committee, the Intergovernmental Panel on Climate Change, and the Arctic Council sponsor UAF and its ACIA secretariat. This assessment program has already attracted established international programs to Fairbanks, including the Arctic Monitoring and Assessment Program for environmental contaminants in terrestrial and freshwater environments. UAF faculty continued to be featured in national and international television productions for their expertise and contributions related to the consequences of climate change.

The Arctic Region Supercomputing Center has continued to gain expertise and technological prowess. With the acquisition of the SVI-ex vector computer ARSC is now recognized as being one of the most powerful vector computer centers in the world. ARSC's ability to interpret large complex data sets offers new opportunities in diverse science applications. UAF continues to evaluate data and to monitor the "Frostfire" experiments. That multi-institutional, international, interdisciplinary experiment examined the processes and consequences of wild fires on the arctic taiga, tundra ecosystems, atmosphere, and the underlying permafrost. Results from the study will provide valuable information on carbon budgets, changing landforms, and potential impacts of climate change. The Alaska Energy Technology Center (AETC) is has been initiated to become an outgrowth of the previously established UAF Energy Center. The AETC, an arm of the US Department of Energy's (DOE) National Energy Technology Laboratory, will be operated by the University of Alaska under contract to the US DOE. AETC will focus on the development and implementation of energy sources in and for rural and remote environments, including the arctic regions of the world.

Through internal reallocation the Provost's funds and a NSF EPSCoR-related award for large instrumentation (a MODUS receiving station at \$500K), UAF has developed an education/research laboratory with 15 state-of-the-art

workstations. This laboratory and its educational program are focusing on the retrieval, processing and interpretation of satellite derived environmental data. When completed, the program, housed in the IARC building and administered by the Provost's Office, CSEM, and IARC, will serve to educate graduate and undergraduate students as well as state agency information and natural resource managers.

The new Alaska EPSCoR Program, centered at UAF, the state's research campus has been recommended to receive 9 million dollars in funding over the next 3 years. EPSCoR provides new infrastructure to stimulate research and education in four areas proposed by a broad-based UA faculty that are appropriate to the University's expertise and the State's needs.

- High Latitude Contaminants Consortium - Addressing diverse contaminants and their amelioration in fragile environments;
- Cold Regions Engineering - Building beyond traditional themes for Alaska;
- Integrative Approaches to Environmental Physiology - A synoptic investigation of animal physiological adaptations at multiple levels; and,
- Alaska Genomic Diversity Initiative - Molecular technologies applied to Alaskan biodiversity.

In addition to the above research foci, additional new opportunities such as computer science, nanotechnology, materials science, logistics, biomedical environmental health, mental health and substance abuse are under consideration. As a related achievement, UAF was awarded Special Neuroscience Research Program grant (7million dollars over 3 years) to develop a core program for excellence in neurobiology.

The EPSCoR program is already bringing significant change onto the campus through infrastructure development including, new faculty lines and relevant instrumentation and facility improvement. In addition to 18 new graduate positions supported within the above research programs, EPSCoR includes two undergraduate educational programs;

1. The Alaska Undergraduate Research Access program which is designed to develop UA student programs to promote the involvement of women and under-represented groups in science and
2. The Alaska Rural Research Partnership (ARRP) that will link rural high school students (predominately Native Alaskans) and their teachers to UA research laboratories.

Intellectual Property development by UAF faculty and staff promote development of private enterprise within the state, support existing Alaskan industries and improve our quality of life. For example, Dr. John Keller invented a "genetic switch" with promise for use in human gene therapy for illnesses such as diabetes, and for use in improving livestock genetics. Dr. Carol Lewis co-invented an acoustic imaging apparatus that will save money for the timber industry and improve the quality of forestry products by finding defects in standing timber, harvested logs or other wooden members. New development in fuel cell construction by the Institute of Northern Engineering holds promise for new alternative energy sources for rural Alaska. Alaska's seafood industry will benefit from the commercialization of Larry Kozycki's fish the pin-bone removal machine, invented at UAF, which will facilitate the economical development of new food products from salmon. In addition, faculty at the Institute of Northern Engineering are developing software to increase the accuracy of acoustical sonar used to count salmon escapement.

Accomplishments from the liberal arts faculty have served to distinguish the university and to enrich the lives of the university community and in the rest of the State.

- The Alaska Native Language Center has just published the Koyukon Athabascan Dictionary. At 1100 pages, it has instantly become a internationally heralded document in the field of Native Studies
- The Alaska Native Studies Department has finished its third textbook designed for university courses in Native Culture, to be published in 2001.
- A faculty member from the English Department has been honored with Flannery O Connor (the most prestigious award given to a new fiction work in the United States)
- Faculty in the Art Department have shown their work in over 100 different exhibits at the local, regional, and national level. National exhibitions include: Alaska, Illinois, California and the National Gallery of Art in Washington, DC. International exhibitions include various galleries in Russia, and the Netherlands. Faculty art has also been highlighted in a series of books.
- Faculty from the Music Department have produced CDs, performed original composition and well known works widely. Faculty ensembles have performed concerts. National presentations have included, Alaska, Okalahoma (the Cameron New Music Festival), Baylor University, Midwestern University, and Okalahoma State University. International performances have included, London (London Symphony, and theatre productions), Italy (Vatican), and the Netherlands.
- Faculty from the Theater Department have produced educational and interactive CD-ROMs and interactive web sites, conducted international workshops on indigenous theatre. The interactive CD-ROM for teaching theater lighting

design is one of the first of its kind, and is distributed nationally. The Costumer's Manifesto Web Site, won the Angel of Fashion award (1996) for best web site. Workshops have been conducted in South Africa, Zambia, Kenya, Chicago, Finland, United Kingdom, and California.

Statutory and Regulatory Authority

No statutes and regulations.

Key Performance Measures for FY2002

Measure: Increase non-general fund revenues.
(Not yet addressed by Legislature.)

Current Status:

- FY99 NGF revenues as % of total expenditures - 84.30%
- FY00 NGF revenues as % of total expenditures - 82.17%

Status of FY2001 Performance Measures

	<i>Achieved</i>	<i>On track</i>	<i>Too soon to tell</i>	<i>Not likely to achieve</i>	<i>Needs modification</i>
• Increase non-general fund revenues.			X		

Fairbanks Organized Research
Component Financial Summary

All dollars in thousands

	FY2000 Actuals	FY2001 Authorized	FY2002 Governor
Non-Formula Program:			
Component Expenditures:			
71000 Personal Services	39,367.5	45,009.1	45,009.1
72000 Travel	3,237.1	2,184.4	3,684.4
73000 Contractual	21,533.6	19,556.8	22,556.8
74000 Supplies	4,952.8	8,104.8	8,104.8
75000 Equipment	4,764.9	1,808.6	5,308.6
76000 Land/Buildings	181.4	0.0	200.0
77000 Grants, Claims	931.1	434.0	1,034.0
78000 Miscellaneous	469.2	18,837.9	10,037.9
Expenditure Totals	75,437.6	95,935.6	95,935.6
Funding Sources:			
1002 Federal Receipts	33,872.8	41,056.4	41,056.4
1003 General Fund Match	1,737.4	1,737.4	1,737.4
1004 General Fund Receipts	9,079.5	9,495.4	9,495.4
1007 Inter-Agency Receipts	3,502.0	5,023.1	5,023.1
1025 Science & Technology Endowment Income	2,630.0	2,630.0	2,630.0
1038 U/A Student Tuition/Fees/Services	0.5	0.0	0.0
1039 U/A Indirect Cost Recovery	6,688.1	8,445.6	8,445.6
1048 University Restricted Receipts	17,927.3	27,547.7	27,547.7
Funding Totals	75,437.6	95,935.6	95,935.6

Fairbanks Organized Research

Proposed Changes in Levels of Service for FY2002

Research efforts in climate change and fisheries will expand due to infusion of federal funding into International Arctic Research Center and School of Fisheries and Ocean Sciences. The opportunity for expansion was created by increases in federal funding, but the actual increases are also the result of UAF scientists faring well in the proposal competitions for the funds.

Preparing for Alaska's Economic Success: Applied Research and Technology Transfer

Based on Alaska's global location and developed talent, UA has many opportunities including access to polar orbiting satellites, proximity to locations throughout the western hemisphere, and cold regions research. Additional funding will allow UAF to take advantage of those opportunities and initiate future development of state and academic programs at the university.

Preparing for Alaska's Economic Success: Finance and e-Commerce

New funding will be used for New Economy/e-Commerce Studies and Finance Education at UAF

Preparing for Alaska's Economic Success: Natural Resources & Alaska Fisheries Investment

New funding will be used for a Marine Advisory Program Agent for western and interior Alaska, to be located in Bethel, and for Fisheries and Salmon Ecology Studies. Both programs will contribute to the university's ability to address critical fisheries research and education needs.

Additionally, a Wildlife Faculty position and a faculty in the School of Agriculture and Land Resources Management will meet current demand for development of leaders in natural resource management.

Preparing for Alaska's Economic Success: Engineering

The proposed funding will increase the opportunities for engineering students by building the engineering education infrastructure at the University of Alaska though acquisition of faculty in critical areas and development of a new doctoral degree in engineering. Equipment needs will also be addressed. Summer workshops on technology will be held on the UAF campus to increase the knowledge of Alaska high school teachers for the engineering and computer science professions.

Summary of Component Budget Changes

From FY2001 Authorized to FY2002 Governor

All dollars in thousands

	<u>General Funds</u>	<u>Federal Funds</u>	<u>Other Funds</u>	<u>Total Funds</u>
FY2001 Authorized	11,232.8	41,056.4	43,646.4	95,935.6
FY2002 Governor	11,232.8	41,056.4	43,646.4	95,935.6

Fairbanks Organized Research

Personal Services Information

Authorized Positions			Personal Services Costs	
	FY2001 Authorized	FY2002 Governor		
Full-time	338	474	Annual Salaries	20,219,946
Part-time	34	41	Premium Pay	0
Nonpermanent	0	0	Annual Benefits	5,664,636
			Labor Pool(s)	21,149,893
			<i>Less 4.31% Vacancy Factor</i>	<i>(2,025,375)</i>
Totals	372	515	Total Personal Services	45,009,100

Position Classification Summary

Job Class Title	Anchorage	Fairbanks	Juneau	Others	Total
Able Seaperson	0	2	0	0	2
Accountant	0	3	0	0	3
Accounting Tech	0	1	0	0	1
Accounting Technician	0	8	0	0	8
Accounting Technician SP/	0	1	0	0	1
Accounts Tech	0	1	0	0	1
Admin Assistant	0	2	0	0	2
Administrative Assis	0	3	0	1	4
Administrative Assistant	0	12	0	1	13
Administrative Asst	0	1	0	0	1
Administrative Clerk	0	0	0	1	1
Administrative Clerk SP/OR	0	1	0	0	1
Administrative Secre	0	1	0	0	1
Aide	0	1	0	0	1
Analyst	0	1	0	2	3
Analyst Porgrammer	0	1	0	0	1
Analyst Programmer	0	2	0	0	2
Applications Special	0	1	0	0	1
Assist Professor	0	1	0	0	1
Assistant Director	0	4	0	0	4
Assistant Manager	0	1	0	0	1
Assistant Prof R-OR	0	1	0	0	1
Assistant Professor	0	24	0	2	26
Assistant to	0	1	0	0	1
Assistant TO	0	1	0	0	1
Assoc Professor	0	2	0	0	2
Associate Professor)	0	1	0	0	1
Associate Director	0	1	0	0	1
Associate Professor	0	26	1	3	30
Compositor	0	1	0	0	1
Computer System Administrator	0	2	0	0	2
Consultant	0	1	0	0	1
Consultant (Exempt)	1	3	0	0	4
Cook	0	3	0	0	3
Coordinator	0	6	0	0	6
Coordinator (Exempt)	0	7	0	1	8
Coordinator (Non-exempt)	0	1	0	0	1
Coordinator(Exempt)	0	1	0	0	1
Crafts & Trades	0	0	0	1	1
Crafts & Trades 1	0	1	0	0	1

Job Class Title	Anchorage	Fairbanks	Juneau	Others	Total
Crafts & Trades I	0	3	0	3	6
Crafts & Trades II	0	6	0	0	6
Crafts & Trades III	0	5	0	0	5
Data Base Specialist	0	1	0	0	1
Data Control Clerk	0	1	0	0	1
Data Specialist	0	2	0	0	2
Director	0	4	0	0	4
Director (Academic)	0	5	0	0	5
Director (Academic) SP/OR	0	1	0	0	1
Director (Admin)	0	3	0	0	3
Drafter	0	1	0	0	1
Editor	0	1	0	0	1
Editorial Assistant	0	3	0	0	3
Engineer	0	6	0	1	7
Engineer SP/OR	0	1	0	0	1
Executive Officer	0	4	0	0	4
Executive Secretary SP/SF	0	1	0	0	1
Facilitator	0	2	0	0	2
Field Operations Assistant	0	1	0	0	1
Field Operations Supervisor	0	1	0	0	1
First Mate	0	0	0	1	1
Fiscal Officer	0	2	0	0	2
Graphics Artist	0	1	0	0	1
Human Resource Generalist	0	2	0	0	2
Information Officer	0	2	0	0	2
Instructor	0	2	0	0	2
Lab Assistant	0	7	0	1	8
Lab Technician	0	9	0	2	11
Lab Technician SP/OR	0	1	0	0	1
Language Specialist	0	1	0	0	1
Launch Officer	0	1	0	0	1
Library Assistant	0	2	0	0	2
Library Asst	0	1	0	0	1
Library Technician	0	1	0	0	1
Maint Service Worker	0	4	0	3	7
Manager	0	23	0	2	25
Marine Chief Engineer	1	0	0	1	2
Marine Engineer Firs	0	0	0	1	1
Master (Ship)	0	0	0	1	1
Micro Computer Specialist	0	1	0	0	1
Micro Computer Technician	0	1	0	0	1
Micro Computer Technology	0	1	0	0	1
Office Manager	0	1	0	0	1
Personnel/Payroll Tech	0	1	0	0	1
Post Doc Fellowship SP-OR	0	1	0	0	1
Post Doc. Fellowship	0	1	0	0	1
Post Doctoral Fellow	0	1	0	0	1
Professor	0	43	5	6	54
Professor (Res)	0	1	0	0	1
Professor SP/OR	0	1	0	0	1
Professor SP-OR	0	2	0	0	2
Program Analyst I	0	2	0	0	2
Program Development Spec	0	1	0	0	1
Program Manager	0	1	0	0	1
Programmer	0	4	0	0	4
Programmer Analyst	0	6	0	0	6

Job Class Title	Anchorage	Fairbanks	Juneau	Others	Total
Project Engineer	0	4	0	0	4
Property Officer	0	1	0	0	1
Public Relations Coordinator	0	0	1	0	1
Publication Assistan	0	1	0	0	1
Publication Info Specialist	0	1	0	0	1
Purchasing Agent	0	2	0	0	2
Purchasing Clerk	0	3	0	0	3
Researach Asst Professor	0	1	0	0	1
Research Professor	0	1	0	0	1
Research Analyst	0	9	0	0	9
Research Assistant	0	2	0	1	3
Research Assoc Professor	0	3	0	0	3
Research Associate	0	20	0	1	21
Research Associate Professor	0	1	0	0	1
Research Asst Professor	0	2	0	0	2
Research Faculty	0	2	0	0	2
Research Professor	1	4	0	0	5
Research Tech	0	1	0	0	1
Research Technician	0	18	0	2	20
Steward	0	0	0	1	1
Store Keeper	0	1	0	0	1
Supervisor	0	3	0	1	4
Supervisor (Exempt)	0	5	0	1	6
Supervisor (Nonexempt)	0	1	0	0	1
Supervisor (Non-Exempt)	0	1	0	0	1
Support Svcs Specialist	0	1	0	0	1
System Analyst	0	7	0	0	7
System Programmer SP/OR	0	1	0	0	1
System Software Engineer	0	1	0	0	1
System/Software Engr	0	1	0	0	1
Systems Analyst	0	1	0	0	1
Systems Programmer	0	2	0	0	2
Systems ProgrammerI	0	1	0	0	1
Systems Software Eng	0	2	0	0	2
Systems Software Engineer	0	11	0	0	11
Systems Software Engr	0	1	0	0	1
Systems/Software Engineer	0	11	0	1	12
Systems/Software Enginner	0	1	0	0	1
Technical Secre	0	1	0	0	1
Technical Secretary	0	4	0	0	4
Technician	0	17	0	2	19
Totals	3	461	7	44	515