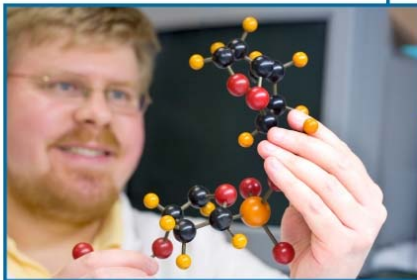


# Research & Development in Whatcom County

## Final Report and Directory



### Report Prepared by:

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## **Project Overview**

In the fall of 2008 the Port of Bellingham contracted with TAG, the Technology Alliance Group for Northwest Washington to map the research and development assets in Whatcom County. TAG is a trade organization based in Bellingham with a mission to promote, educate and advocate for technology companies and support the development of innovation driven industries in Whatcom County. TAG connects technology businesses to resources by offering educational programs, networking opportunities and other business services to the technology sector and its service providers.

The purpose of the project is to develop a comprehensive directory that will identify expertise of researchers, faculty, and associates at colleges as well private industry researchers and technical/scientific consultation type services in Whatcom County. Apart from profiling our local research and development community we are also looking to identify interest in collaborating on projects with industry or researchers at our local colleges in Whatcom County.

TAG is a partner of the Innovation Partnership Zone (IPZ) and the Northwest Consortium for Technology Innovation and Development (NCTID) initiatives that work to foster closer collaboration between higher education and private industry. It is our hope that the R&D directory can be an aid in linking businesses and entrepreneurs with researchers and technical resources at our local colleges as well as private industry.

## ***Research methodology***

The project consists of:

- Identifying the R&D community
- Collecting basic public information about the community
- Surveying them to identify applied research and technical /scientific services offered
- Creating a directory based on the responses to the survey and other public data collected

The sources of information for the R&D directory and this report were survey responses, the public websites of the colleges and the US Patents office website.

The data presented in this summary report primarily focuses on the data collected through the survey.

In short the survey consisted of 12 questions related to:

- Area of expertise
- Applied research experience
- Funding sources
- Involvement of students, other colleges/departments/organizations
- Interest in collaborating on projects with other organizations

The survey was sent via email to 316 targets of which 283 are faculty in areas of science and technology at Western Washington University (WWU), Whatcom Community

College (WCC), Bellingham Technical College (BTC) and Northwest Indian College (NWIC) and 33 are private individuals who are involved in research.

Based on time constraints we had to limit the number of private researchers/innovators that we could include in the project. We acknowledge that there are many more technical and scientific resources in Whatcom County that were not included in the survey or directory.

Overall survey response rate was high (31.7 percent) based on the respondents that were invited to participate. We will address the data collection process and response rate for each survey subject 'academia' and private industry/ professionals, respectively in more details in our discussion of findings.

The goal was to map our local R&D assets and not to perform a statistical survey where we can make statistical inferences of activities across the County.

The data collected was merged into a master spreadsheet listing survey responses associated with each respondent and data collected through the internet. Summaries of these directories highlighting area of expertise and interest in collaborative projects are attached as Appendix A through E. The survey targets that completed the survey are highlighted in blue. Also attached is the aggregate survey results and questionnaire (Appendix F).

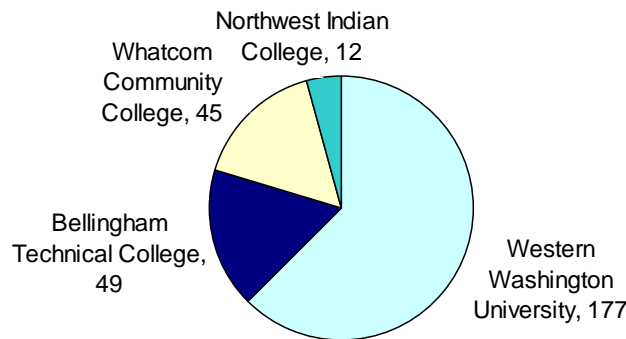
## Findings

### ***University and Colleges in Whatcom County***

TAG researched the public websites of the local university and colleges to compile a comprehensive list of faculty involved in science and technology. Apart from basic contact information we also collected information such as areas of expertise in teaching and research whenever available. We then requested the help of the College Presidents or deans and department heads to promote participation in the online survey by providing information about TAG, and the purpose of the R&D project to their faculty.

Western Washington University (WWU) has the highest number of faculty in science and technology with 177 staff employed at the College of Science and Technology and Huxley College. Bellingham Technical College (BTC) has 49 faculty in science and technology followed by Whatcom Community College (WCC) at 45. Northwest Indian College (NWIC) currently employs 12 faculty in areas of environmental sciences, mathematics and computer technology.

#### **Number of Faculty in Science and Technology at Colleges/ University in Whatcom County**

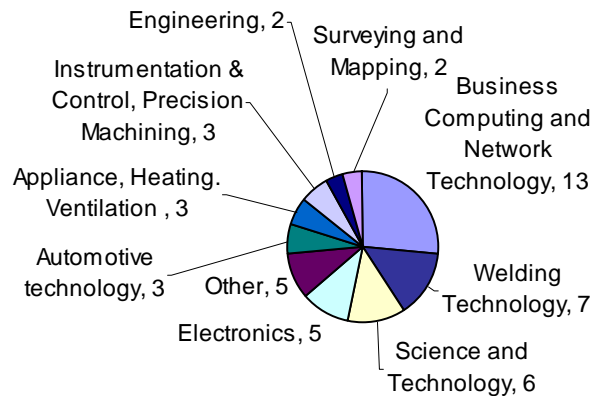


The survey findings for each college will be described in more detail below.

### ***Bellingham Technical College***

Faculty and associates at Bellingham Technical College invited to participate in the survey were from the following areas: Automotive Technology; Computer Information Systems; Electronics; Engineering; Fisheries Technology; Heating, Ventilation, Air Conditioning; Instrumentation & Control; Precision Machining; Process Technology; Sciences; Surveying & Mapping; and Welding Technology.

## BTC Faculty in Science & Technology by Subject



### Highlights from Survey results

In total 13 out of the 49 faculty responded to the survey which means we had a 26.5 percent response rate.

#### Areas of expertise of respondents include:

- IT Training
- Automotive repair - hybrid vehicle training
- Electronics, Radio Frequency (RF), LASER, Fiber Optics, Telecommunications, BioMed, PC Systems, Robotics, NANO, Micro Electrical Mechanical Systems (MEMS), Sensors, Mechatronics, etc.
- Fish Culture, Shellfish and finfish Aquaculture, Habitat Restoration, and netpen culture.
- Electrical engineer and Electrician
- Instrumentation, automation, industrial controls, electronics, technical writing, renewable energy
- Auto Collision
- Radiologic Technology
- Diesel Engines, Heavy Equipment, Emissions Controls, Marine Propulsion, Power Generation
- Research in mass transfer, air pollution control, and nuclear waste treatment. Currently doing a little research on bio-diesel production.

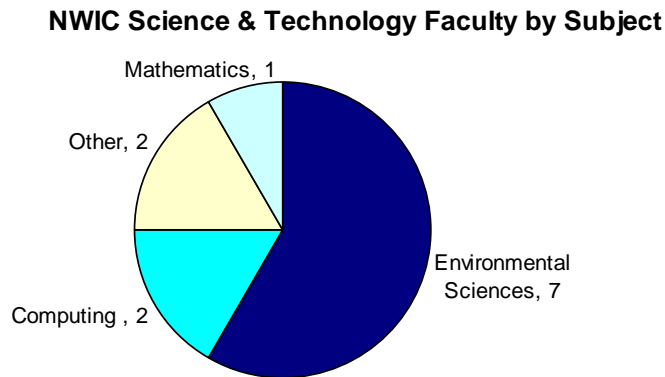
#### Interest in collaborative project opportunities include:

- Alternative energy centered, primarily around transportation sector
- Aquaculture, Hatchery, and research equipment.
- Bio-diesel and nuclear waste treatment
- Green energy. Or in the field of electronics, semi-conductor, or solar

## **Northwest Indian College**

The NWIC faculty included in the project are from the following areas: Computer Maintenance and Networking, Earth Science, Mathematics, Native Environmental Science, Native Science, and Science and Forestry.

As the chart below shows a majority of faculty in science and technology are found in environmental sciences.



### **Highlights from Survey results**

In total 5 out of the 12 targeted faculty responded to the survey which means we had a 41.7 percent response rate.

#### **Areas of expertise of respondents include:**

- Development of Research Programs Strategic Research Plan development Freshwater and Marine Water Quality Development of integrated Research/Education Degree Programs
- GIS, Remote Sensing, and Computing.
- Forest Ecology Biology education
- Education, Mathematics
- Hardware, networks, applications, operating systems, electronics, robotics, digital media

#### **Interest in collaborative project opportunities include:**

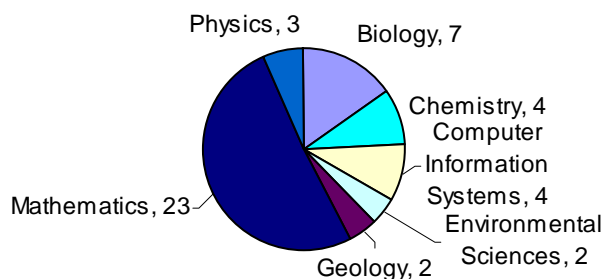
- Open
- Such collaboration would have to be closely aligned with my current responsibilities and workload.

## ***Whatcom Community College***

WCC faculty invited to participate in the survey are from the following departments: Biology, Chemistry, Computer Information Systems, Environmental Sciences, Geology, Mathematics and Physics.

As the chart below shows a majority of teaching staff in science and technology subjects are found in mathematics.

### **WCC Faculty in Science & Technology**



### **Highlights from Survey results**

In total 10 out of the 45 faculty responded to the survey which means we had a 22.2 percent response rate.

#### **Areas of expertise of respondents include:**

- Technical experience in all things Macintosh.
- Analytical/environmental chemistry atmospheric chemistry drinking water disinfection by-products
- Materials Science, Physical Chemistry
- Mathematics curriculum and instruction
- Review of literature to formulate recommendations pertaining to performance objectives for local elected officials. Development of educational and training programs.
- 3D-Imaging
- Expertise: teaching adults Physics and chemistry. Research: how people learn.
- Instructor
- Chemistry Education, Enzymology
- Teaching Cisco CCNA, CCNP, information security, and forensics.

#### **Interest in collaborative project opportunities include:**

- Alternative deliveries for education, especially for home schooled or privately schooled kids.
- Any involving chemistry.
- Any and all. Always interested in getting students linked to local industry.

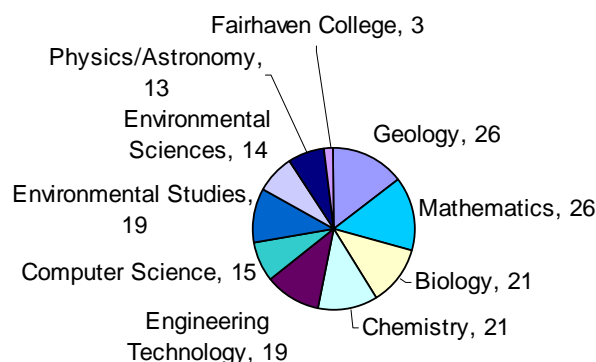
- Interfacing industry with local community colleges and secondary schools.
- Students' awareness of industry research and opportunities to develop their creativity.
- Alternative energy development, public education regarding the technology. Consumer education. Sustainable resource management, particularly energy systems.
- Information security and forensics

## **Western Washington University**

Faculty from Western Washington University invited to participate in the survey are from the following colleges and departments:

- College of Sciences and Technology: Biology, Chemistry, Computer Science, Engineering Technology, Geology, Mathematics, and Physics/Astronomy.
- Huxley College of the Environment: Environmental Sciences and Environmental Studies
- Fairhaven College

### **Faculty in Science and Technology at Western Washington University**



### **Highlights from Survey results**

In total 58 out of the 177 targeted faculty responded to the survey which means we had a 32.8 percent response rate.

#### **Areas of expertise of respondents include:**

- Ecology and evolution of marine invertebrates
- Cellular biology, measurements of electrical signals for biological tissues and cells, evaluation of kinetics of compounds on cell membranes.
- Materials Engineering and Design
- Plant ecology, ecosystem ecology, nutrient analysis in soils and freshwater, plant surveys.
- Physical chemistry, nuclear magnetic resonance (NMR)
- Geology
- Geology, geomorphology, near-surface processes, paleoclimate
- Coastal geomorphology
- Structural geology and neotectonics, rock fracture mechanics, geologic hazards
- Environmental Chemistry, Remote instrumentation
- Geology, Geophysics
- Geography
- Naval aviation electronics. Computer related subjects (TCPIP, Networking, PC architecture, HTML, C++, Visual Basic, Java, Database management, and others).
- Data mining, computational linguistics
- Mechanical Engineering/Engineering Management

- Information retrieval, optimization.
- Geographic Information Systems (Digital mapping and spatial analysis, including GIS, GPS and Cartography)
- Urban planning
- Machining, both manual and CNC Tool and Fixture Design Computer-Aided Design (CAD) Computer-Aided Manufacturing (CAM) CNC Programming
- Applied and computational math
- Population genetics Ecological genomics Both with reference to agricultural pest organisms
- Biochemistry, structural biology, molecular biology, protein and nucleic acid chemistry
- Geochemistry
- Geology, specifically volcanology
- Surface science
- Mathematics and statistics.
- Computer-Aided Design and Manufacturing
- Automotive transmission design, development and manufacturing
- Impact of marine mammals in the environment as well as the impact of humans on marine mammals. Effective ways to teach science to K-12 and college students.
- Rock petrography, thin section analyses, geochemical analyses of geomaterials
- Inverse problems in partial differential equations
- Product development, Industrial design, consumer and commercial product design from concept to detailed part and assembly design.
- Geomorphology research (changing landscapes such as beaches, bluff, landslides)
- Aquatic Toxicology and Environmental Chemistry
- Computer Science
- Organic chemistry: synthesis, structure determination via spectroscopic methods including nuclear magnetic resonance (NMR), mass spectrometry (MS) and infrared (IR).
- Electronics, Digital systems, embedded systems
- Analytical chemistry, nanotechnology, and materials science
- Inorganic/Materials Chemistry
- Origin of rocks, structural geology, mineralogy, plate tectonics
- Physics and Chemistry through the Advanced Materials Science and Engineering Center (AMSEC) program at WWU. Organic/hybrid electronics including memory, LEDs, and photovoltaic devices, electrochemistry and nanoparticle synthesis.
- Structural geology
- Geology and Geophysics
- Protein engineering protein-based drug development structural and functional characterization of proteins
- Surface and materials chemistry related to the heterogeneous catalysis of energy-related processes.
- Mycologist / lichenologist inventories of lichens and fungi monitoring air quality with lichens educational topics regarding these and other lower life forms 3-D photography of lower life forms
- Forest ecology and management; Wildlife Biology; Remote sensing using spaceborne and airborne sensors
- Materials science organic electronics nanomaterials chemical analysis microscopy
- Computer security, software engineering, software quality assurance

- Mineralogy, Metamorphic Petrology, Crystallization Kinetics
- Structural geology, faults, earthquake hazards related to faults
- Freshwater ecology
- Organic chemistry, reaction mechanisms, Green Chemistry, spectroscopy
- Insect ecology and evolutionary biology.
- Astronomy
- Composites and plastics
- Organic/organometallic chemistry

**Interest in collaborative project opportunities include:**

- Development of remote sensing of marine environments.
- Molecular Pharmacology, environmental impact with emphasis in eco-physiology. BioPharma companies.
- Conservation and restoration efforts aimed at preserving/enhancing ecosystem services (e.g., flood control, water quality, etc.). A key question is finding markets for the ecosystem services engendered.
- Spectroscopic analysis, especially if it involves NMR.
- Geology of Whatcom County
- Environmental restoration, monitoring, and evaluation. Testing improved field analytic or sampling equipment, etc.
- Advisory capacity
- Geologic hazards analysis, energy resources evaluation (especially geothermal)
- None
- Sustainability, quality of life, and geography
- Network, Teaching, Programming
- Whatever might relate to my work in data mining and computational linguistics.
- Transportation, Fire Fighting
- Mapping and spatial data
- Sustainable development, green building
- Anything related to machining, CAD, or CAM.
- Projects involving quarantine and/or management of invasive species. Evolutionary consequences of pest introductions
- Molecular biology. In particular, x-ray crystallography of biological molecules.
- Geochemical applications
- Any
- Mathematics and Statistics
- Computer-Aided Design Reverse Engineering
- Engineering Technology, and especially new opportunities for student senior projects and independent study activities.
- Improvement of science education and marine conservation: striking a balance between human development and environmental requirements, and improving ocean education.
- Open
- Distributed Computing Computational Science specifically Bioinformatics and Computational Chemistry Embedded and Real Time Systems
- Synthesis of small molecule targets; structure analysis and determination via NMR, MS, IR
- Summer R&D in embedded systems

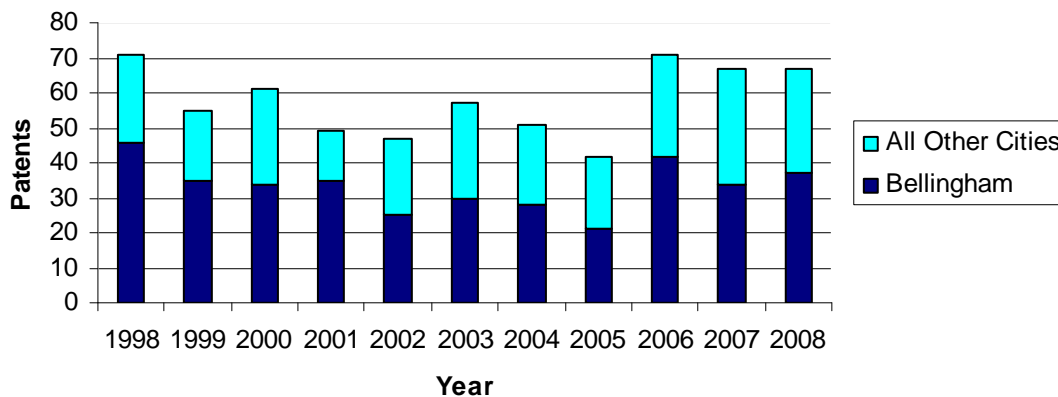
- Heterogeneous catalysis, specifically CO<sub>2</sub> reduction and/or water gas shift catalysis. Also small molecule activation, such as nitrogen fixation.
- R&D projects with industry if common interests exist.
- Magnetic properties testing; geophysical instrument development, testing, and field survey design; geotechnical and environmental surveys; forensic and archeological surveys
- Protein expression; purification; characterization
- Surface and materials chemistry projects for the petroleum industry or other energy industries.
- Education.
- Use of high spatial resolution imagery and LIDAR data.
- Technology-based companies working in the area of materials science, chemistry, or physics.
- Computer security. Software development process. Software quality assurance.
- Anything related to seismic hazards, faulting.
- Anything that involves students in freshwater testing and data analysis.
- I'm open
- None at this time
- Most any
- Catalyst development

## Private R&D Activities - Patent holders

The private industry researchers, technical scientific consultants were more difficult to identify as there is no common clear cut 'identifier' such as a NAICS code that identifies companies involved in R&D activities. We also searched for information by 'occupation classification' but this information is only available in aggregate form which made it impossible to identify individual contacts as targets for our survey.

After researching various options we determined the United States Patents office would be the best source to be able to identify private research activities in Whatcom County. The number of patents generated in an area is typically a good indicator of technology potential as patent activity creates a strong basis from which new products or new companies can grow. The Patents office has an online database that provides access to patents by geographic area. We were able to identify patent holders in most of the Cities in Whatcom County.

**Patent Activity in Whatcom County by Year**



Source: U.S. Patent Trademark Office, February 2009

This graph displays patent activity in Bellingham and Whatcom County annually since 1998. We can see that patent generation is not keeping up with general population growth in Whatcom County.

Patents in Whatcom County are generated from research sponsored by local industry as well as independent individuals of which some are working for companies or colleges from across the US.

Some noteworthy local employers include Absorption Corp, ACB Boats, Accelitec, Allsop, Alpha Technologies, Blue Sea Systems, Cascade Dafo, Contemporary Design Co, Daritech, EDA Inc., Homax Products, QM Bearings, Qualnetics, Samson Rope Technologies, Wanne Inc. and Woodstock International.

No contact information other than name and city are included in the official patent records so TAG had to query the internet to find contact information such as phone and

address for each patent holder. This proved to be a very time consuming process that did not always return a complete set of information.

Based on time constraints TAG limited the number of inventors it surveyed to inventors that had patents issued in 2007 and 2008. There were a total of 94 patents issued to local patent holders in Whatcom County. We had to call these inventors to verify contact information and collect an email address so that they could participate in the survey. We learned that some patent holders phone numbers had been disconnected and in many cases we were unable to locate an email address and were therefore not able to include them in the survey.

### **Highlights from Survey results**

The response rate for the survey of the patent holders was 42.4 % with 14 of the 33 targets completing the questionnaire.

#### **Areas of expertise of respondents include:**

- Design of space systems relative to human factors interfaces. Automotive styling. Aerodynamics and hydrodynamics. Anthracite coal mining and related technologies. Geothermal energy extraction. Design and manufacturing of physical therapy and athletic training equipment.
- Power Electronics
- Embedded system software development and testing for vehicles, phones, navigation and defense.
- Consulting and engineering in audio, video, analog, digital, ASIC's, FPGA's, software, DSP's, networking and energy system designs.
- Samson is the leading high performance cordage company. Our technical expertise is in fibers, coatings, rope constructions and testing of such.
- Machinery design and maintenance of Steel mill and Aluminum mill equipment for producing and fabricating those materials.
- Mechanical Engineering. Product Development. Pump research.
- Audio Digital Signal Processing, Acoustics, Psychoacoustics. Algorithm design and development. Numerical simulation. Voice and Video over IP. Voice quality.

#### **Interest in collaborative project opportunities include:**

- Wave energy, geothermal energy, Wind energy, passive solar energy
- Alternative energies: Solar and Wind power.
- Possibly some "lean manufacturing" projects but our industry is so unique it may be difficult
- Alternative energy projects, electric vehicles.
- Audio/Video/Networking development. Green energy systems.
- As a private company we are interested in working with universities on fiber or polymer related research projects primarily.
- Mechanical design or maintenance.
- Mechanical product development
- Currently involved in subjective listening test experiments with Psychology department of WWU, on an informal basis.
- Game-changing strategic projects.

- Alternative Energy, Hybrid technology, transportation low voltage electrical distribution, SAE car, etc.
- Transportation Systems, Product design, User interface.

## Conclusions and Opportunities

Whatcom County is home to a wealth of technology and scientific resources in academia through a comprehensive four-year university and three independent community and technical colleges. Apart from identifying areas of expertise in research and development we also looked to identify interest in collaborating on projects with industry.

Not all faculty we surveyed are involved in research activities with an industry application or that can be commercialized nor did all wish to collaborate with industry. However they all help support a strong education base as it relates to math and science skills, which is essential to the future workforce of our local technology-based industry. We were pleased to find that undergraduate research and the involvement of students in industry projects are encouraged which further enhances student learning.

Through our survey we learned that both academic researchers and private industry expressed a strong interest in renewable energy, clean technology and sustainability as areas of collaboration. The effective industry application of such opportunities promises to benefit companies in a diverse range of areas including renewable energy, waste reduction, advanced materials, information technology as well as traditional industry as we all take steps to produce cleaner and greener products and services.

We were impressed with the diverse private R&D activities in Whatcom County. Whatcom County is home to internationally successful companies that were founded by entrepreneurs who continue to be active in research and development. Examples include companies such as Allsop, Aluminum Chambered Boats, Cascade Dafo, Contemporary Design Co and QM Bearings. Whereas some of the scientific talent directly benefit our local industry it should be noted that some research and product development professionals work with companies in other areas of North America.

We understand that our survey only reached a small number of the private science and technology professional residing in the area and we would like to continue identifying more private researchers in the region for inclusion in the database. This could potentially include non-patented research and development activities.

TAG will publish this summary report and directory to its website. However we would also like to make the comprehensive R&D directory publicly available for further update through the expansion of TAG's online technology resource directory located at [nwtechdirectory.org](http://nwtechdirectory.org). This directory currently includes close to 600 technology-based companies in Whatcom County organized by industry sector (NAICS).

TAG plans to share our findings with the partners in the Innovation Partnership Zone and Northwest Consortium for Technology and Innovation Development (NCTID) to help focus future program development efforts. We are hopeful that these initiatives, which bring together government, educational institutions and industry will provide the environment whereby ideas/ patents can be more quickly translated into commercially viable projects and ultimately new businesses.

TAG would also like to identify other research programs and resources in the region and state that are available to help promote the technology transfer and commercialization in the areas of interest for collaboration. TAG can leverage existing partnerships like the

Technology Alliance Associates which include members such as Washington Technology Center, Pacific Northwest National Laboratory and SIRTI, who are involved in tech transfer across the state. This would allow us to leverage comparable efforts going on elsewhere.

Our local R&D professionals play a pivotal role in contributing to the 'engine of innovation' which is essential to the growth and success of the local technology industry, employment base, and vitality of our community at large.

## **Appendices**

Summaries of the Research & Development directories are attached as Appendix A through E. These directories include data collected through the survey and the internet. The survey targets that completed the survey are highlighted in light blue.

### ***R&D Directory:***

Appendix A. Directory of faculty in science and technology at Bellingham Technical College

Appendix B. Directory of faculty in science and technology at Northwest Indian College

Appendix C. Directory of faculty in science and technology at Whatcom Community College

Appendix D. Directory of faculty in science and technology at Western Washington University

Appendix E. Directory of patent holders

### ***Questionnaire:***

Survey Questions and aggregate survey findings.

## Bellingham Technical College - Faculty in Sciences and Technology

3028 Lindbergh Avenue  
Bellingham, WA 98225

	First Name	Last Name	Title	Phone	Email	Research/Area of Expertise	Interest in Collaborative Projects
	<b>Appliance &amp; Refrigeration Technology</b>						
1	Brian	Osgoodby	Faculty	(360) 752-8418	bosgoodb@btc.ctc.edu	Appliance & Refrigeration Technology	
	<b>Automotive Technology</b>						
2	Bruce	Evenstad	Faculty	(360) 752-8426	bevensta@btc.ctc.edu	Automotive Collision Repair Technology	
3	Daniel	Beeson	Faculty	(360) 752-8403	dbeeson@btc.ctc.edu	Automotive Technology and hybrid vehicle training	Alternative energy centered, primarily around transportation sector
4	Paul	Wallace	Faculty	(360) 752-8336	pwallace@btc.ctc.edu	Automotive Technology	
	<b>Building Construction Technology</b>						
5	Paul	Washington	Faculty	(360) 752-8423	pwashing@btc.ctc.edu	Building Construction Technology	
	<b>Business &amp; Computer Information Systems</b>						
6	Jack	Wollens Jr,	Faculty	(360) 752-8364	jwollens@btc.ctc.edu	Business & Computer Information Systems	
7	Chris	Babin	Faculty	(360) 752-8778	cbabin@btc.ctc.edu	Business & Computer Information Systems	
8	Darlene	Edwards	Faculty	(360) 752-8407	dedwards@btc.ctc.edu	Business & Computer Information Systems	
9	Sharon	Glenovich	Faculty	(360) 752-8774	sglenovi@btc.ctc.edu	Business & Computer Information Systems	
10	Janelle	Massey	Faculty	(360) 752-8410	jmassey@btc.ctc.edu	Business & Computer Information Systems	
11	Joan	Ofteness	Faculty	(360) 752-8322	joftenes@btc.ctc.edu	Business & Computer Information Systems	
12	Frances	Simmons	Faculty	(360) 752-8392	fsimmons@btc.ctc.edu	Business & Computer Information Systems	
13	Sharon	Carpenter	Dean/Coordir	(360) 752-8331	scarpent@btc.ctc.edu	Business & Computer Information Systems	
14	Deidre	Kent	Faculty	(360) 752-8405	dkent@btc.ctc.edu	Business & Comupter Information Systems	
15	Therese	Williams	Dean/Coordir	(360) 752-8316	twilliam@btc.ctc.edu	Business, CE	

	<b>Computer Network Technology</b>						
16	Lee	Falta	Faculty	(360) 752-8419	lfalta@btc.ctc.edu	Computer Network Technology	
17	Mike	Massey	Faculty	(360) 752-8368	mmassey@btc.ctc.edu	Computer Network Technology	
18	Gregory	Rehm	Faculty	(360) 752-8451	grehm@btc.ctc.edu	Computer Network Technology	
	<b>Diesel Technology</b>						
19	Jeff	Curtis	Faculty	(360) 752-8400	jcurtis@btc.ctc.edu	Diesel Technology, Diesel Engines, Heavy Equipment, Emissions Controls, Marine	
	<b>Electronics</b>						
20	Sam	Cheung	Faculty	(360) 752-8455	scheung@btc.ctc.edu	Electronics, Server performance design and evaluation.	Green energy. Or in the field of electronics, semi-conductor, or solar.
21	Robert	Costello	Faculty	(360) 752-8381	rcostell@btc.ctc.edu	Electronics	
22	Jim	Lee	Instructor	(360) 752-8420	jlee@btc.ctc.edu	Electronics	I do not know
23	Scott	Stidham	Faculty	(360) 752-8568	sstidham@btc.ctc.edu	Electronics	
24	Jim	Swartos	Faculty	(360) 752-8412	jswartos@btc.ctc.edu	Electronics, Radio Frequency (RF), LASER, Fiber Optics, Telecommunications, BioMed, PC	Various
	<b>Engineering</b>						
25	Scott	Reiss	Faculty	(360) 752-8424	sreiss@btc.ctc.edu	Engineering	
26	Timothy	Stettler	Faculty	(360) 752-8338	tstettle@btc.ctc.edu	Engineering	
	<b>Fisheries Technology</b>						
27	Earl	Steele	Faculty	(360) 752-8352	esteele@btc.ctc.edu	Fisheries Technology, Fish Culture, Shellfish and finfish Aquaculture, Habitat Restoration, and	Aquaculture, Hatchery, and research equipment.
	<b>Heating, Ventilation, Air Conditioning &amp; Refrigeration</b>						
28	Dave	Maricle	Faculty	(360) 752-8413	dmaricle@btc.ctc.edu	Heating, Ventilation, Air Conditioning & Refrigeration	
29	Marty	Vande Kamp	Faculty	(360) 752-8454	mvandekamp@btc.ctc.edu	Heating, Ventilation, Air Conditioning & Refrigeration	
	<b>Instrumentation &amp; Control Technology</b>						
30	Tony	Kuphaldt	Faculty	(360) 752-8477	tkuphald@btc.ctc.edu	Instrumentation & Control Technology incl. instrumentation, automation, industrial controls,	To be honest, my schedule is absolutely chock-full, so I will probably decline most

31	Dave	Starkovich	Faculty	(360) 752-8416	dstarkov@btc.ctc.edu	Instrumentation & Control Technology	
		<b>Precision Machining</b>					
32	Stan	DeVries	Faculty	(360) 752-8406	sdevries@btc.ctc.edu	Diesel Technology	
		<b>Process Technology</b>					
33	Thomas	Carleson	Faculty	(360) 752-8391	tcarleso@btc.ctc.edu	Process Technology. Research in mass transfer, air pollution control, and nuclear waste treatment.	biodiesel and nuclear waste treatment
		<b>Radiologic Technology</b>					
34	Tracy	Bailey	Faculty	(360) 752-8303	tbailey@btc.ctc.edu	Radiologic Technology	
		<b>Sciences</b>					
35	Carol	Gavereski	Faculty	(360) 752-8431	cgavares@btc.ctc.edu	Computer Network Technology	
36	Andrea	Olah	Faculty	(360) 752-8304	aolah@btc.ctc.edu	Sciences	
37	Lowell	Wester	Faculty	(360) 752-8369	lwester@btc.ctc.edu	Sciences	
		<b>Surveying &amp; Mapping Technology</b>					
38	Peter	Hodges	Faculty	(360) 752-8414	phodges@btc.ctc.edu	Surveying & Mapping Technology	
39	Brian	Lawrence	Faculty	(360) 752-8581	blawrence@btc.ctc.edu	Surveying & Mapping Technology	
		<b>Technology &amp; Apprenticeship</b>					
40	Waddell	Pedigo	Faculty	(360) 752-8497	wpedigo@btc.ctc.edu	Technology & Apprenticeship	
41	Terry L.	Thayer	Director, Cen	(360) 752-8495	tthayer@btc.ctc.edu	Technology & Apprenticeship	
42	Susan	Parker	Dean/Coordir	(360) 752-8317	sparker@btc.ctc.edu	Technology & Apprenticeship	
		<b>Welding Technology</b>					
43	Don	Anderson	Faculty	(360) 752-8307	danderso@btc.ctc.edu	Welding Technology - Structural Fabrication, Aluminum, Pipe	
44	Brett	Cleveland	Faculty	(360) 752-8771	bclevela@btc.ctc.edu	Welding Technology - Structural Fabrication, Aluminum, Pipe	
45	Jere	Donnelly	Faculty	(360) 752-8401	jdonnell@btc.ctc.edu	Welding Technology - Structural Fabrication, Aluminum, Pipe	

46	Shirley	Erickson	Faculty	(360) 752-8764	serickso@btc.ctc.edu	Welding Technology - Structural Fabrication, Aluminum, Pipe	
47	Matt	Hancock	Faculty	(360) 752-8770	mhancock@btc.ctc.edu	Welding Technology - Structural Fabrication, Aluminum, Pipe	
48	Russel	Jones	Faculty	(360) 752-8301	rjones@btc.ctc.edu	Welding Technology - Structural Fabrication, Aluminum, Pipe	
49	Mary	Kuebelbeck	Faculty	(360) 752-8493	mkuebelb@btc.ctc.edu	Welding Technology - Structural Fabrication, Aluminum, Pipe	

## Northwest Indian College - Faculty in Sciences and Technology

2522 Kwina Road  
Bellingham, WA 98225

No	First	Last	Title	Phone	Email	Research/Area of Expertise	Interest in Collaborative Projects
1	Nadine	Bill	Director of Institutional	(360) 392-4246	nbill@nwic.edu	Institutional Research	
2	Gary	Brandt	Faculty Computer Main	(360) 392-4318	gbrandt@nwic.edu	Computer hardware, networks, applications,	
3	Dan	Burns	Science Director	(360) 319-2010	dburns@nwic.edu	Native Environmental Science, Development	open
4	Charlotte	Clausing	Science Research	(360) 392-4319	cclausing@nwic.edu	Environmental Technician	
5	Brian	Compton	Faculty Science	(360) 392-4321	bcompton@nwic.edu	Science, Forestry and Botany	
6	Azmat	Hussain	Mathematics Faculty	360-392-4348	ahussain@nwic.edu	Mathematics, Education	
7	Adib	Jamshedi	Business trainer	360-392-4303	ajamshedi@nwic.edu	Business Trainer	
8	Mark	Moss	Research Tech 2	(360) 392-4344	mmoss@nwic.edu	GIS and Computing, Remote Sensing.	
9	Emma	Norman	Envirnomenta Studies	(360) 392-4330	enorman@nwic.edu	Environmental Science	
10	Steve	Pavlik	Native Science Faculty	(360) 392-4307	spavlik@nwic.edu	Native Science	
11	Terri	Plake	Earth Science Faculty	(360) 392-4306	tplake@nwic.edu	Earth Science	
12	John	Rombold	Science and Forestry F	(360) 392-4322	jrombold@nwic.edu	Forest Ecology, Biology education	Such collaboration would have to be closely aligned with my current responsibilities and workload.

## Whatcom Community College - Faculty in Sciences and Technology

236 W. Kellogg Rd.  
Bellingham, WA 98226

No.	First	Last	Title	Phone	Email	Research/Area of Expertise	Interest in Collaborative Projects
<b>Biology</b>							
1	Doreen	Dewell	Faculty	(360) 383-3746	ddewell@whatcom.ctc.edu	Biology, general biology lab	
2	Scott	Elliott, DC	Faculty	(360) 966-2700	Selliott@whatcom.ctc.edu	Biology, general biology with lab, human anatomy and physiology	
3	Hilary	Engebretson	Faculty	(360) 383-3751	hengebre@whatcom.ctc.edu	Biology, Introduction to Biology, Nutrition	
4	Wayne	Erickson	Faculty	(360) 383-3514	werickso@whatcom.ctc.edu	Biology, human anatomy and physiology, microbiology	
5	Kim	Reeves	Faculty	(360) 383-3545	kreeves@whatcom.ctc.edu	Biology, human anatomy and physiology	
6	John	Rousseau	Faculty	(360) 383-3551	jroussea@whatcom.ctc.edu	Biology, general biology, major cell biology/molecular	
7	Debbie	Lancaster,	Faculty	(360) 383-3531	dlancast@whatcom.ctc.edu	Biology & Environmental Science, ecology/evolution, microbiology.	
<b>Chemistry</b>							
8	Monique	Brewer	Faculty	(360) 383-3719	chemistrymonique@gmail.com	Chemistry	
9	Steve	Deroy	Faculty	(360) 383-3510	sderoy@whatcom.ctc.edu	Chemistry, organic chemistry, Chemistry Education, Enzymology	

10	Paul	Frazey	Faculty	(360) 383-3516	pfrazey@whatcom.ctc.edu	Chemistry, analytical/environmental chemistry atmospheric chemistry drinking water disinfection by-products	any involving chemistry
11	Suzan	Ural	Faculty	(360) 383-3860	sural@whatcom.ctc.edu	chemistry, general chemistry lab	
<b>Computer Information Systems</b>							
12	Gary	O'Dell	Faculty	(360) 383-3807	godell@whatcom.ctc.edu	computer information systems, computer operating systems, computer support	
13	Andy	Romanysh	Faculty	(360) 383-3826	aromanys@whatcom.ctc.edu	computer information systems, computer literacy, computer and software	
14	Corrinne	Sande	Faculty/ Co	(360) 383-3552	csande@whatcom.ctc.edu	computer information systems, Teaching cisco CCNA, CCNP, information security, and forensics.	information security and forensics
15	Mike	Koepp	Faculty	(360) 383-3528	mkoeppe@whatcom.ctc.edu	Computer Science, Computers and software, computer programming fundamentals	
<b>Environmental Science</b>							
16	Larry	Preszler	Faculty	(360) 383-3814	lpreszle@whatcom.ctc.edu	Environmental science, introduction to science	
17	Mark	Van Dyke	Faculty	(360) 383-3861	mvandyke@meridian.wednet.	Environmental science	
<b>Geology</b>							
18	Bernie	Dougan	Faculty	(360) 383-3827	bdougan@whatcom.ctc.edu	Geology, environmental geology, physical geology, historical geology	
19	Doug	McKeever	Faculty	(360) 383-3537	dmckeeve@whatcom.ctc.edu	Geology, environmental geology, physical geology, introduction to weather	
<b>Mathematics</b>							

20	Marty	Atkins	Faculty	(360) 383-3705	matkins@whatcom.ctc.edu	Mathematics, precalculus	
21	Stan	Bianchi	Faculty	(360) 383-3710		Mathematics, elementary and intermediate algebra	
22	Gary	Blour	Faculty	(360) 224-3251	garyjaimeb@aol.com	Mathematics, intermediate algebra	
23	Molly	Crocker	Faculty	(360) 383-3743	m2d5@comcast.net	Mathematics, Technical experience all things Macintosh.	alternative deliveries for education, especially for homeschooled or privately schooled kids.
24	Wendi	Davis	Faculty	(360) 383-3745	wdavis@whatcom.ctc.edu	Mathematics, elementary and intermediate algebra	
25	Jody	DeWilde	Faculty	(360) 383-3576	jdewilde@whatcom.ctc.edu	Mathematics, elementary algebra	
26	Peter	Gray	Faculty	(360) 383-3758	pgray@whatcom.ctc.edu	Mathematics, elementary and intermediate algebra	
27	Ed	Harri	Faculty/ De	(360) 383-3522	eharri@whatcom.ctc.edu	Mathematics, calculus I, introduction to linear algebra	
28	Jim	Hollingswo	Faculty	(360) 383-3768	jholling@whatcom.ctc.edu	Mathematics, basic mathematics	
29	Maia	Langenber	Faculty	(360) 383-3573	mlangenberg@whatcom.ctc.e	Mathematics, elementary and intermediate algebra	
30	Doug	Mooers	Faculty	(360) 383-3538	dmoors@whatcom.ctc.edu	Mathematics curriculum and instruction	Interfacing industry with local community colleges and secondary schools.
31	Doug	Quinlan	Faculty	(360) 383-3815	dquinlan@whatcom.ctc.edu	Mathematics, intermediate algebra, algebra applications for economics and business	
32	Crystal J.	Ravenwo	Faculty	(360) 383-3543	cravenwo@whatcom.ctc.edu	Mathematics, and developing educational and training programs.	
33	Jessica	Reidel	Faculty	(360) 383-3819	jreidel@whatcom.ctc.edu	Mathematics, elementary algebra, introductions to stats, mathematical modeling in our community	

34	Walt	Schrengoh	Faculty	(360) 383-3837	wschreng@whatcom.ctc.edu	Mathematics, elementary algebra, precalculus	
35	Russ	Sherif	Faculty	(360) 383-3554	rsherif@whatcom.ctc.edu	Mathematics, elementary algebra, intermediate algebra	
36	Lee	Singleton	Faculty	(360) 778-1585	lsingleton@whatcom.ctc.edu	Mathematics, 3D-Imaging	I would definitely like to see my students more aware of industry research and give them opportunities
37	Daphne	Sluys	Faculty	(360) 383-3844	dsluys@whatcom.ctc.edu	Mathematics, algebra applications for economics and business	
38	Scott	Smartt	Faculty	(360) 383-3845	ssmartt@whatcom.ctc.edu	Mathematics, precalculus	
39	Jeannette	Stephens	Faculty	(360) 383-3557	jstephen@whatcom.ctc.edu	Mathematics, survey of mathematics, business calculus	
40	William	Webber	Faculty	(360) 383-3566	wwebber@whatcom.ctc.edu	Mathematics, precalculus, calculus II	
41	Tony	Will	Faculty	(360) 383-3567	awill@whatcom.ctc.edu	Mathematics, mathematical modeling in our community	
42	Heidi	Ypma	Faculty	(360) 383-3570	hypma@whatcom.ctc.edu	Mathematics, elementary algebra, precalculus	
	<b>Physics</b>						
43	Tran	Phung	Faculty	(360) 383-3544	tphung@whatcom.ctc.edu	Materials Science, Physical Chemistry	Any and all. Always interested in getting students linked to local industry.
44	David	Kern	Faculty	(360) 383-3777	dkern@whatcom.ctc.edu	Physics, environmental physics	
45	Sara	Julin	Professor	(360) 383-3525	sjuln@whatcom.ctc.edu	Physics professor. Expertise: teaching adults Physics and chemistry. research: how people learn.	Alternative energy development, public education regarding the technology. Consumer education. Sustainable resource management, particularly energy systems.

**Western Washington University - Faculty in Sciences and Technology**

516 High St  
Bellingham, WA 98225

No.	First	Last	Title	Phone	Email	Research/Area of Expertise	Interest in Collaborative Projects
<b>College of Science and Technology</b>							
1	Arlan	Norman	Dean of the College of Science &	(360) 650-6400	arlan.norman@wwu.edu	inorganic chemistry, phosphorus compounds	
<b>Department of Biology</b>							
2	Alejandro	Acevedo-Gutierrez	Associate Professor	(360) 650-3653	alejandro.acevedo-gutierrez@wwu.edu	Behavior and ecology of marine mammals and seabirds, and their role in the design and implementation of marine protected areas.	and marine conservation: striking a balance between human development and environmental requirements, and improving ocean education.
3	Roger	Anderson	Professor	(360) 650-3992	Roger.Anderson@wwu.edu	Lizard energetics, ecology and evolution.	
4	Marion	Brodhagen	Assistant Professor	(360) 650-2920	Marion.Brodhagen@wwu.edu	Secondary metabolites of plant-associated microbes; chemical ecology; plant-microbe interactions.	
5	Eric	DeChaine	Assistant Professor	(360) 650-6575	Eric.Dechaine@wwu.edu	Evolution and ecology of alpine and arctic flora, Quaternary biogeography	
6	Deborah	Donovan	Associate Professor	(360) 650-7251	donovan@biol.wwu.edu	Energetic Implications of Living in a Wave-swept Habitat	
7	David	Hooper	Associate Professor	(360) 650-3649	hooper@biol.wwu.edu	Effects of plant diversity and functional characteristics on ecosystem processes, nitrogen cycling, carbon cycling	Conservation and restoration efforts aimed at preserving/enhancing ecosystem services (e.g., flood control, water quality, etc.). A key question is finding markets for the ecosystem services engendered.
8	David S.	Leaf	Professor	(360) 650-3632	leaf@biol.wwu.edu	Evolution of pattern formation in insect embryos.	
9	Benjamin	Miner	Assistant Professor	(360) 650-3640	Benjamin.miner@wwu.edu	Evolution and ecology of phenotypic plasticity and marine invertebrates	
10	Craig L.	Moyer	Professor	(360) 650-7935	cmoyer@hydro.biol.wwu.edu	Marine microbiology of Bacteria, Archaea and single cell. Eucarya: Molecular approaches in exploring microbial diversity, community structure and ecology.	

11	Gisele	Muller-Parke	Professor	(360) 650-4885	Gisele.Muller-Parker@wwu.edu	Marine algal ecology and symbiosis	
12	Joann J.	Otto	Professor and Chair	(360) 650-4044	Joann.Otto@wwu.edu	Actin-based cell motility and cytoskeleton	
13	Merrill	Peterson	Professor	(360) 650-3636	peterson@biol.wwu.edu	Population ecology, community ecology, and evolutionary biology of herbivorous insects.	
14	Mary Anne	Pultz	Emeritus Associate Professor	(360) 650-3632	pultz@biol.wwu.edu	Comparative study of developmental regulatory gene function in flies and wasps	
15	Fred	Rhoades	Part-time Instructor and Research	(360) 650-2016	Fred.Rhoades@wwu.edu	mycologist / lichenologist inventories of lichens and fungi monitoring air quality with lichens educational topics regarding these and other lower life forms 3-D photography of lower life forms	Biology education.
16	Sandra	Schulze	Assistant Professor	(360) 650-7267	Sandra.Schulze@wwu.edu	Chromatin structure and nuclear organization in Drosophila	
17	Dietmar	Schwarz	Assistant Professor	(360) 650-3641	Dietmar.Schwarz@wwu.edu	Population genetics Ecological genomics Both with reference to agricultural pest organisms	Projects involving quarantine and/or management of invasive species Evolutionary consequences of pest introductions
18	José	Serrano-Moreno	Assistant Professor	(360) 650-3633	Jose.Serrano-Moreno@wwu.edu	Cellular biology, measurements of electrical signals for biological tissues and cells, evaluation of kinetics of compounds on cell membranes.	Molecular Pharmacology, environmental impact with emphasis in eco-physiology. BioPharma companies.
19	Anu	Singh-Cundy	Associate Professor	(360) 650-7473	anu@biol.wwu.edu	Cell-cell interactions during reproductive and vegetative development in plants, self-incompatibility, graft formation	
20	Carol	Trent	Professor	(360) 650-2869	trent@biol.wwu.edu	Molecular genetics of haplo-diploid sex determination	
21	Heather	Van Epps	Assistant Professor	(360) 650-2016	Heather.VanEpps@wwu.edu	Molecular control of neurodevelopment and specifically the role of RNA processing in the nervous system	
22	Jeff	Young	Associate Professor	(360) 650-3638	young@biol.wwu.edu	Plant Functional Genomics	
<b>Department of Chemistry</b>							
23	Spencer J.	Anthony-Cahill	Associate Professor	(360) 650-3152	sacahill@chem.wwu.edu	Biochemistry, protein engineering protein-based drug development structural and functional characterization of proteins	protein expression; purification; characterization
24	Emily	Borda	Assistant Professor	(360) 650-3135	emily.borda@wwu.edu	Chemistry & Chemical Education	

25	Carley	Chandler	Visiting Assistant Professor	(360) 650-3070	chandler@chem.wvu.edu	Organic Chemistry	
26	Timothy B.	Clark	Assistant Professor	(360) 650-3167	clark@chem.wvu.edu	organic/organometallic chemistry	Catalyst development
27	Steven D.	Gammon	Full Professor	(360) 650-3071	gammon@chem.wvu.edu	Chemical Education	
28	John D.	Gilbertson	Assistant Professor Inorganic Chemistry	(360) 650-2790	gilbertson@chem.wvu.edu	Inorganic/Materials Chemistry	Heterogeneous catalysis, specifically CO2 reduction and/or water gas shift catalysis. Small molecule activation, such as nitrogen fixation.
29	George S.	Kriz	Full Professor	(360) 650-3126	george.kriz@wvu.edu	Organic chemistry, reaction mechanisms, Green Chemistry, spectroscopy	I'm open
30	Gary M.	Lampman	Professor Emeritus	(360) 650-3151	lampman@chem.wvu.edu	Organic Chemistry	
31	Gregory W.	O'Neil	Assistant Professor	(360) 650-6283	oneil@chem.wvu.edu	Organic Chemistry	
32	Mark	Peyron	Adjunct Professor General &	(360) 650-6465	mark.peyron@chem.wvu.edu	General & Polymer Chemistry	
33	Gerry A.	Prody	Associate Professor Biochemistry,	(360) 650-3156	gerry@chem.wvu.edu	Biochemistry	
34	Serge	Smirnov	Assistant Professor	(360) 650-2302	smirnov@chem.wvu.edu	Biochemistry	
<b>Department of Chemistry &amp; Institute of Environmental Toxicology</b>							
35	April J.	Markiewicz	Assistant Director/Toxicologist II	(360) 650-6137	April.Markiewicz@wvu.edu	Research activities have involved conducting site-specific nutrient, metals, and pesticide analyses and performing aquatic, sediment, and wastewater effluent toxicological bioassays	
<b>Department of Chemistry &amp; Advanced Materials Science and Engineering Center (AMSEC)</b>							
36	Mark E.	Bussell	Professor	(360) 650-3145	mark.bussell@wvu.edu	Surface and materials chemistry related to the heterogeneous catalysis of energy-related processes.	Surface and materials chemistry projects for the petroleum industry or other energy industries.
37	Steven R.	Emory	Associate Professor	(360) 650-7437	semory@chem.wvu.edu	Analytical chemistry, nanotechnology, and materials science	
38	David L.	Patrick	Professor, Analytical & Materials	(360) 650-3128	patrick@chem.wvu.edu	Materials science organic electronics nanomaterials chemical analysis microscopy	technology-based companies working in the area of materials science, chemistry, or physics.

39	Thomas	Pratum		(360) 650-3070	pratum@chem.wvu.edu	Physical chemistry, nuclear magnetic resonance (NMR)	Spectroscopic analysis, especially if it involves NMR.
40	Elizabeth A	Raymond	Assistant Professor	(360) 650-3134	Elizabeth.Raymond@wvu.edu	Physical Chemistry, Affiliated with AMSEC	
41	P. Clint	Spiegel	Associate Professor	(360) 650-3137	spiegep@chem.wvu.edu	Biochemistry, structural biology, molecular biology, protein and nucleic acid chemistry	Most aspects of molecular biology. In particular, x-ray crystallography of biological molecules.
42	James R.	Vyvyan	Full Professor	(360) 650-2883	vyvyan@chem.wvu.edu	Organic Chemistry, Organic Synthesis, Medicinal Chemistry. Affiliated with AMSEC.	synthesis of small molecule targets; structure analysis and determination via NMR, MS, IR
<b>Department of Computer Science</b>							
43	David	Bover	Professor, Department Chair	(360) 650-3805	David.Bover@wvu.edu	Computer security, software engineering, software quality assurance	Computer security Software development process Software quality assurance
44	Perry	Fizzano	Assistant Professor	(360) 650-3807	perry@cs.wvu.edu	Master student projects related to text classification, search engines, recommender systems, bioinformatics or machine learning	
45	Martin	Granier	Lecturer	(360) 650-6879	granier@wvu.edu	Computer Science	
46	James W.	Hearne	Professor	(360) 650-3792	James.Hearne@wvu.edu	Data mining, computational linguistics	Data mining and computational linguistics.
47	Ed	Hunter	Lecturer	(360) 650-2249	huntere4@wvu.edu	Naval aviation electronics. Computer related subjects including TCP/IP, Networking, PC architecture, HTML, C++, Visual Basic, Java, Database management, and others. I have been working with electronics and computers for over 40 years.	Network, Teaching, Programming
48	James L.	Johnson	Professor	(360) 650-3967	James.Johnson@wvu.edu	Computer Science	
49	Debra S.	Jusak	Associate Professor	(360) 650-3396	Deb.Jusak@wvu.edu	Computer Science	
50	Seth	Long	Lecturer	(360) 650-3819	Samuel.Long@wvu.edu	Computer Science	
51	Geoffrey B	Matthews	Professor	(360) 650-3797	Geoffrey.Matthews@wvu.edu	Artificial intelligence, data mining, visualization and graphics	
52	Michael	Meehan	Professor	(360) 650-3795	Michael.Meehan@wvu.edu	Computer Science: Concurrent, Parallel and Distributed Computing, Distributed Operating Systems, Computer Networks, Applied Cryptography / Distributed Systems Security, Computational Science (Bioinformatics, genomics, proteomics)	Distributed Computing Computational Science specifically Bioinformatics and Computational Chemistry Embedded and Real Time Systems

53	Philip A.	Nelson	Associate Professor		phil@cs.wvu.edu	Computer Science: Parallel Programming, Distributed Computing, Compilers, Computer Networks, The Coda Project, The NetBSD project, The GNU Project, UNIX information.	
54	Martin L.	Osborne	Professor		martin.osborne@wvu.edu		
55	Christophe	Reedy	Lecturer	(360) 650-4838	Chris.Reedy@wvu.edu		
56	Saim	Ural	Professor	(360) 650-4840	Saim.Ural@wvu.edu		
57	Jianna	Zhang	Associate Professor	(360) 650-3845	Jianna.Zhang@wvu.edu	Artificial Intelligence, Machine Learning, Intelligent Robots, Robot Learning, Data Mining, Natural Language Processing, Intelligent Intranets, and Data Mining on the Internet.	
<b>Department of Engineering Technology</b>							
58	Steven	Fleishman			Steven.Fleishman@wvu.edu	Automotive transmission design, development and manufacturing	We have a wide range of student interests in the Engineering Technology Department, and continue to seek new opportunities for student senior projects and independent study activities.
59	F. David	Harris	Professor	(360) 650-7703	harrisfd@gmail.com	Electronics Engineering Technology, WWU Embedded Systems	
60	Del	King	Professor/ Lecturer/ Senior		Indle.King@wvu.edu	Industrial Design	
61	Eric Kent	McKell PE	Associate Professor	(360) 650-7931	Eric.McKell@wvu.edu	Machining, both manual and CNC Tool and Fixture Design Computer-Aided Design (CAD) Computer-Aided Manufacturing (CAM) CNC Programming	Anything related to machining, CAD, or CAM.
62	Jeff	Morris	Assistant Professor.	(360) 650-2514	Jason.Morris@wvu.edu	Product development, Industrial design, consumer and commercial product design from concept to detailed part and assembly design.	open
63	Todd	Morton	Professor and Chair	(360) 650-3380	Todd.Morton@wvu.edu	Electronics, Digital systems, embedded systems	Summer R&D in embedded systems
64	Jeffrey L.	Newcomer	Professor	(360) 650-7239	Jeff.Newcomer@wvu.edu	Manufacturing Engineering Technology	
65	Arunas P.	Oslapas	Associate Professor	(360) 650-3425	arunas.oslapas@wvu.edu	Industrial Design	
66	Robert A.	Raudebaugh	Faculty Emeritus, Retired	(360) 650-2914	robertr@cc.wvu.edu	Technology Education	

67	Michael	Seal	Faculty Emeritus	(360) 650-3045	seal@cc.wvu.edu	Industrial Technology/ VRI	
68	Richard F.	Vogel	Associate Professor Emeritus	(360) 650-2976	vogel@cc.wvu.edu	Engineering Technology	
69	Derek	Yip-Hoi	Assistant Professor/ CAD/CAM		Derek.Yip-hoi@wvu.edu	Computer-Aided Design and Manufacturing	Computer-Aided Design Reverse Engineering
70	Janet	Braun	Assistant Professor	(360) 650-3071	janet.braun@wvu.edu	Manufacturing Engineering Technology and Industrial Technology, Vehicle Design	Transportation, Fire Fighting
71	Thomas	Grady	Associate Professor	(360) 650-3624	timo@cc.wvu.edu	Electronics Engineering Technology, WVU Embedded Systems	
<b>Department of Engineering Technology - Vehicle Research Institute</b>							
72	Eric	Leonhardt	Vehicle Design Program		Eric.Leonhardt@wvu.edu	vehicle research institute	
<b>Department of Engineering Technology &amp; Advanced Materials Science and Engineering Center (AMSEC)</b>							
73	Steven H	Dillman	Professor	(360) 650-3852	steven.dillman@wvu.edu	Plastics Engineering Technology. Affiliated with AMSEC.	
74	Nicole	Hoekstra	Professor	(360) 650-7237	Nicole.Hoekstra@wvu.edu	Plastics Engineering Technology. Affiliated with AMSEC.	
75	Kathleen	Kitto	Professor and Associate Dean of the	(360) 650-6400	kitto@cc.wvu.edu	Materials Engineering and Design	
76	Nicole	Larson	Assistant Professor		nicole.larson@wvu.edu	Composites and plastics	Most any
<b>Department of Geology</b>							
77	Scott	Babcock	Professor/ Department Chair	(360) 650-3592	babcock@cc.wvu.edu	Geochemistry, Igneous petrology, geochemistry, hydrogeochemistry, soil geochemistry.	Geochemical applications
78	Myrl	Beck, Jr	Professor Emeritus	(360) 650-3597	beck@cc.wvu.edu	Application of paleomagnetism and other geophysical methods to the study of tectonic processes.	none
79	Richard	Berg		(360) 650-3699	richard.berg@wvu.edu	Computer Applications in Geoscience	

80	Clark	Blake	Research Associate	(360) 650-3581	mcblake@cc.wvu.edu	tectonics	
81	Edwin (Ne)	Brown	Professor Emeritus	(360) 650-3645	ehbrown@geol.wvu.edu	Origin of rocks, structural geology, mineralogy, plate tectonics	
82	Russell F.	Burmester	Research Associate	(360) 650-3654	russb@wvu.edu	Application of paleomagnetism to the study of tectonic processes. Tectonics and stratigraphy of the Belt Supergroup. Paleomagnetism and tectonic history of the American Cordillera, eastern	
83	Jackie	Caplan-Auert		(360) 650-4153	jackie@geol.wvu.edu	Geophysics, volcanology, seismology	
84	Bob	Christman	Emeritus Faculty	(360) 650-3587	xman@cc.wvu.edu	Geoscience Education	
85	Douglas H	Clark	Assistant Professor	(360) 650-7939	dhclark@cc.wvu.edu	Geology, geomorphology, near-surface processes, paleoclimate	Environmental restoration, monitoring, and evaluation. testing improved field analytic or sampling
86	Juliet	Crider	Associate Professor	(360) 650-3589	criderj@cc.wvu.edu	Structural geology and neotectonics, rock fracture mechanics, geologic hazards	geologic hazards analysis, energy resources evaluation (especially geothermal)
87	Don J.	Easterbrook	Professor Emeritus	(360) 650-3583	dbunny@cc.wvu.edu	Geomorphology & Surficial Geology - Geomorphology; glacial geology; Pleistocene geochronology; environmental and engineering geology. Global warming	Geology of Whatcom County
88	Dave	Engebretson		(360) 650-3595	engebret@cc.wvu.edu	Geophysics	
89	Thor	Hansen	Professor	(360) 650-3648	thoret@cc.wvu.edu	Paleontology - Extinction, escalation; Paleobiology of early Tertiary molluscs; Evolution of predatory gastropods	
90	David M.	Hirsch	Associate Professor	(360) 650-2166	hirschd@cc.wvu.edu	Mineralogy, Metamorphic Petrology, Crystallization Kinetics	
91	Scott	Linneman	Associate Professor	(360) 650-7207	scott.linneman@wvu.edu	Geomorphology research (changing landscapes such as beaches, bluff, landslides)	
92	Robert J.	Mitchell	Associate Professor	(360) 650-3591	robert.mitchell@geol.wvu.edu	Hydrogeology - Geology Engineering	
93	George	Mustoe	Technical Staff, Research	(360) 650-3585	mustoeg@cc.wvu.edu	Paleontology, Geochemistry	
94	Elizabeth	Schermer	Associate Professor	(360) 650-3658	schmermer@geol.wvu.edu	Structural geology, faults, earthquake hazards related to faults	anything related to seismic hazards, faulting
95	Maury	Schwartz	Faculty Emeritus	(360) 650-3586	coastal@cc.wvu.edu	Coastal geomorphology	I am retired, but might be interested in being involved in an advisory capacity

96	Pete	Stelling		(360) 650-4095	pete@geol.wvu.edu	Geology, specifically volcanology	Any
97	Chris	Suczek	Associate Professor	(360) 650-3590	suczekca@cc.wvu.edu	Sedimentology and stratigraphy - Sandstone composition, provenance, and tectonics; geologic history of western North America, especially the Cenozoic of Washington and Paleozoic of	
98	Jim	Talbot	Faculty Emeritus	(360) 650-3742	talbot@cc.wvu.edu	Structural geology	
99	Paul	Thomas	Part-time instructor		paul.thomas@wvu.edu		
100	Dave	Tucker	Research Associate		Dave.Tucker@wvu.edu		
<b>Department of Geology &amp; Advanced Materials Science and Engineering Center (AMSEC)</b>							
101	Susan	DeBari	Associate Professor	(360) 650-3588	debari@geol.wvu.edu	Rock petrography, thin section analyses, geochemical analyses of geomaterials	
102	Bernie	Housen	Associate Professor	(360) 650-6573	bernieh@cc.wvu.edu	Structural geology, Paleomagnetism, Geophysics, Structure/Tectonics.	magnetic properties testing; geophysical instrument development, testing, and field survey design; geotechnical and environmental surveys; forensic and archeological surveys
<b>Department of Mathematics</b>							
103	Edoh Y.	Amiran	Associate Professor	(360) 650-3487	edoh.amiran@wvu.edu	Differential geometry, smooth dynamical systems	
104	Amy	Anderson	Associate Professor	(360) 650-3799	amy.anderson@wvu.edu	Statistical genetics	
105	Arpad	Benyi	Assistant Professor	(360) 650-3710	arpad.benyi@wvu.edu	Harmonic analysis, partial differential equations	
106	Donald R	Chalice	Associate Professor	(360) 650-3454	donald.chalice@wvu.edu	Banach algebras, complex dynamics	
107	Victor	Chan	Associate Professor	(360) 650-7260	Victor.Chan@wvu.edu	Reliability, applied statistics	
108	Keith	Craswell	Professor Emeritus	(360) 650-3793	keith.craswell@wvu.edu		

109	Branko	Curgus	Professor	(360) 650-3484	curgus@gmail.com	Differential equations, operator theory	
110	Richard	Gardner	Professor	(360) 650-7760	Richard.Gardner@wwu.edu	Geometry, tomography	
111	Tilmann	Glimm	Assistant Professor	(360) 650-2933	glimmt@wwu.edu	Nonlinear PDEs, mathematical biology	
112	David	Hartenstine	Assistant Professor	(360) 650-6520	david.hartenstine@wwu.edu	Partial differential equations	
113	Nora	Hartsfield	Professor	(360) 650-3830	wwufrog@yahoo.com	Graph theory	
114	Robert	Jewett	Professor	(360) 650-3453	robert.jewett@wwu.edu	Harmonic analysis	
115	Jerry	Johnson	Professor	(360) 650-3801	jerry.johnson@wwu.edu	Mathematics education	
116	Millie	Johnson	Associate Professor	(360) 650-3459	millie.johnson@wwu.edu	Mathematics education	
117	Norman	Lindquist	Professor Emeritus	(360) 650-3810	lnorm@cc.wwu.edu		
118	Stephen	McDowall	Associate Professor	(360) 650-4272	stephen.mcdowall@wwu.edu	inverse problems in partial differential equations	
119	Michael	Naylor	Associate Professor	(360) 650-6284	mnaylor@cc.wwu.edu	Mathematics education	
120	Adam	Nyman	Assistant Professor	(360) 650-3464	adam.nyman@wwu.edu	Algebraic geometry, ring theory	
121	Thomas	Read	Professor	(360) 650-3814	read@cc.wwu.edu	Ordinary and partial differential equations	
122	John R	Reay	Professor Emeritus		reay@wwu.edu	consulting work in mathematics and statistics.	Mathematics and Statistics
123	Amites	Sarkar	Assistant Professor	(360) 650-7569	amites.sarkar@wwu.edu	Combinatorics, probability theory, and graph theory	
124	Yun-Qiu	Shen	Professor	(360) 650-2858	yunqiu.shen@wwu.edu	Differential equations, numerical analysis	

125	Stephanie	Treener	Assistant Professor	(360) 650-3468	stephanie.treener@wwu.edu	Modular forms, number theory, Theory of Partitions	
126	John	Woll	Professor Emeritus	(360) 650-3793	John.Woll@wwu.edu		
127	Tjalling	Ypma	Chair, Professor	(360) 650-3785	Tjalling.Ypma@wwu.edu	Numerical analysis	
128	Jianying	Zhang	Assistant Professor	(360) 650-7259	jianying.zhang@wwu.edu	Applied and computational math	
<b>Department of Physics &amp; Advanced Materials Science and Engineering Center (AMSEC)</b>							
129	Janelle	Leger		(360) 650-6400	Janelle.leger@wwu.edu	I have a split appointment in the Dept. of Physics and Chemistry through t AMSEC. My research is in organic/hybrid electronics including memory, LEDs, and photovoltaic devices. I also do some electrochemistry and nanoparticle synthesis.	I would be interested in exploring R&D projects with industry if common interests were there.
<b>Department of Physics/Astronomy</b>							
130	Andrew	Boudreaux	Lecturer	(360) 650-7383	boudrea@physics.wwu.edu	Discipline-based research on the learning and teaching of physics, including the identification of specific difficulties with topics such as Newtonian mechanics, buoyancy, geometrical optics, and Galilean and special relativity, and the assessment of the effect of instruction on student understanding. Also works with science education faculty on the preparation of precollege teachers of science.	
131	Kristen A.	Larson	Associate Professor	(360) 650-3833	larsonk@physics.wwu.edu	astronomy. the interstellar medium, particularly the dust in translucent clouds. Also, the study of infrared photometric signatures of star formation and the origin of newly formed stars at high galactic latitude	none at this time
132	George D.	Nelson	Professor	(360) 650-3637	george.nelson@wwu.edu		
133	Ajit S.	Rupaal	Professor	(360) 650-3853	arupaal@physics.wwu.edu		
134	James E.	Stewart	Professor	(360) 650-3840	jstewart@physics.wwu.edu		
135	Richard D.	Vawter	Associate Professor	(360) 650-3823	vawter@physics.wwu.edu	development of an interactive learning web site for first year calculus physics – PhysicsNet. Other interests involve the making of QuickTime VR Panoramas.	
136	John G.	Wills	Lecturer	(360) 650-3832	wills@physics.wwu.edu	nuclear theory with a special interest in scattering theories and particle physics, including quark models of baryons and mesons	

137	W Louis	Barrett	Professor	(360) 650-3837	wlb@physics.wvu.edu		
138	Andreas	Riemann	Assistant Professor	(360) 650-2856	riemana@physics.wvu.edu	Surface science	open
<b>Department of Physics/Astronomy &amp; Advanced Materials Science and Engineering Center (AMSEC)</b>							
139	Milton	From	Associate Professor	(360) 650-6593	from@physics.wvu.edu	experimental condensed matter physics, electronic and magnetic properties of magnetic nanostructured materials. Characterization techniques include Portable Raman spectrometer, Brillouin Light Scattering, magneto-optical Kerr effect, vibrating sample magnetometry, magnetoresistance and thermopower measurements.	
140	Brad L.	Johnson	Professor and Chair	(360) 650-3659	bjohnso@physics.wvu.edu	theoretical condensed-matter physics, including transport in low-dimensional systems, the quantum Hall effect and fractional quantum Hall effect, transport and many-electron effects in molecular systems, magnetic and electronic excitations of superlattices.	
141	Takele	Seda	Associate Professor	(360) 650-3838	sedat@physics.wvu.edu	magnetic and electronic properties of iron-bearing materials, particularly nanophase iron oxides and hydroxides with implications to environmental magnetism.	
<b>Fairhaven College</b>							
142	Gary	Bornzin	Senior Lecturer	(360) 650-4918	Gary.Bornzin@wvu.edu	Applied Human Ecology & Sustainable Systems, New Perspectives in Science	
143	John	Bower	Professor, CIEL Coordinator	(360) 650-7217	John.Bower@wvu.edu	Acoustic communication in bowhead whales and song sparrows, as well as population ecology of Pacific Northwest marine birds	
144	John	Tuxill	Assistant Professor	(360) 650-4435	John.Tuxill@wvu.edu	Management of agricultural biodiversity	

	<b>Huxley College of the Environment</b>						
	<b>Department of Environmental Sciences &amp; Institute for Spatial Information and Analysis</b>						
145	Stefan	Freelan	Interim Co-Director and GIS Specialist	(360) 650-2949	Stefan.Freelan@wwu.edu	Geographic Information Systems (Digital mapping and spatial analysis, including GIS, GPS and Cartography)	mapping and spatial data
	<b>Department of Environmental Sciences</b>						
146	Brian L.	Bingham	Professor	(360) 650-2845	Brian.Bingham@wwu.edu		
147	Leo R.	Bodensteiner	Professor and Chair	(360) 650-7375	Leo.Bodensteiner@wwu.edu		
148	James M.	Helfield	Assistant Professor	(360) 650-7285	James.Helfield@wwu.edu		
149	Peter S.	Homann	Associate Professor	(360) 650-7585	Peter.Homann@wwu.edu		
150	John F.	McLaughlin	Assistant Professor	(360) 650-7617	jmcl@cc.wwu.edu	Analyzed role of climate change, habitat loss, and other factors in extinctions of Bay checkerspot	
151	John	Rybczyk	Associate Professor	(360) 650-2081	John.Rybczyk@wwu.edu	global warming, sea level rise, and coastal wetland sustainability, invasive species eradication in PNW estuaries, and the use of wetlands for wastewater treatment.	butterfly populations.
152	David	Shull	Assistant Professor	(360) 650-3690	David.Shull@wwu.edu		
153	Ruth	Sofield	Assistant Professor	(360) 650-2181	Ruth.Sofield@wwu.edu	Aquatic Toxicology and Environmental Chemistry	
154	David O.	Wallin	Professor	(360) 650-7526	david.wallin@wwu.edu	Forest ecology and management; Wildlife Biology; Remote sensing using spaceborne and airborne sensors	Use of high spatial resolution imagery and LIDAR data.
155	Andy	Bunn	Assistant Professor	(360) 650-4252	Andy.Bunn@wwu.edu	climate variability, paleoecology, and energy	
156	Devon	Cancilla	Associate Professor & Director of Scientific Technical Services	(360) 650-7785	Devon.Cancilla@wwu.edu	analysis of environmental contaminants. evaluating the environmental impact of aircraft deicers (ADAF).	

	<b>Department of Environmental Sciences &amp; Institute for Watershed Studies</b>					
157	Robin A. Matthews	Professor & Director	(360) 650-3507	Robin.Matthews@wwu.edu	Freshwater ecology	Anything that involves students in freshwater testing and data analysis.
	<b>Department of Environmental Sciences &amp; Institute of Environmental Toxicology</b>					
158	Wayne G. Landis	Professor & Director	(360) 650-6136	Wayne.Landis@wwu.edu	Environmental toxicology	
	<b>Department of Environmental Studies</b>					
159	Troy Abel	Assistant Professor	(360) 650-6133	Troy.Abel@wwu.edu		
160	Dr. Kathy Alstyne	Adjunct Faculty	(360) 293-2188 x2	kathy.vanalstyne@wwu.edu	marine ecology algal physiology and biochemistry harmful macroalgal blooms algal-herbivore interactions marine chemical ecology	
161	Andrew J. Bach	Associate Professor	(360) 650-4774	Andy.Bach@wwu.edu	geomorphology and pedogenesis, natural resources management, Quaternary studies and climate change in the western United States	
162	Andrew Bodman	Professor	(360) 650-2707	Andrew.Bodman@wwu.edu		
163	Jean O. Melious	Associate Professor	(360) 650-7377	Jean.Melious@wwu.edu	endangered species law, transboundary environmental law and policy, land use law, and the relationship between law and science	
164	John C. Miles	Professor	(360) 650-2896	John.Miles@wwu.edu	role the wilderness idea has played in national park history in the United States, history of the conservation movement	
165	Debnath Mookherjee	Professor	(360) 650-2895	Debnath.Mookherjee@wwu.edu	comparative urbanization, regional development and growth management.	
166	Olin E. (Gene) Myers, Jr.	Associate Professor	(360) 650-4775	Gene.Myers@wwu.edu	Human-animal interaction, Development of Environmental Care and Responsibility, Conservation Psychology	
167	Lynn A. Robbins	Professor Emeritus	(360) 650-2793	Lynn.Robbins@wwu.edu		
168	David Rossiter	Assistant Professor	(360) 650-3603	David.Rossiter@wwu.edu	Cultural-historical geography, political-ecology, Canada	
169	Paul Stangl	Assistant Professor	(360) 650-2793	Paul.Stangl@wwu.edu		

170	Thomas A.	Terich	Professor and Chair	(360) 650-3286	Thomas.Terich@wwu.edu	Coastal processes and coastal zone management as well as natural hazards	
171	Grace	Wang	Associate Professor	(360) 650-3278	Grace.Wang@wwu.edu		
172	Nicholas	Zaferatos	Associate Professor	(360) 650-7660	Nicholas.Zaferatos@wwu.edu	urban planning	sustainable development, green building
173	Patrick H.	Buckley	Associate Professor	(360) 650-4773	Patrick@cc.wwu.edu	Geography	Those focused on sustainability, quality of life, and geography
174	Michael	Medler	Associate Professor	(360) 650-3173	Michael.Medler@wwu.edu	developing techniques for mapping and analyzing complex biophysical processes such as forest fire and other disturbance	
175	Jennifer	Seltz	Assistant Professor	(360) 650-2311	Jennifer.Seltz@wwu.edu		
<b>Department of Environmental Studies &amp; Institute for Global and Community Resilience</b>							
176	Gigi	Berardi	Professor/ Interim Director	(360) 650-2106	Gigi.Berardi@wwu.edu	community food assessment and valuing local, short chain/channel supply networks, measuring "well-being" and considering "genuine process indicators," and characterizing farm systems resilient to disasters and extreme events	
177	Scott	Miles	Associate Professor	(360) 650-2440	Scott.Miles@wwu.edu		

## R&D Directory Patent Holders (Patents issued 2007 - 2008)

	First	Last	Title	Association/ Company	Survey Respondent (if different from patent holder)	City	Research/ Area of Expertise (Patent):	Interest in Collaborative Projects
1	Michael J.	Abrams		Anormed, Inc.		Custer	Use of rare earth compounds for the prevention of kidney stone disease	
2	James D.	Allsop		Allsop Inc		Bellingham	Solar-powered collapsible lighting apparatus	
1	Todd D	Andersen				Bellingham	Adjustable clip assembly	
2	Shiraz	Balolia		Woodstock International Inc		Bellingham	Planer/moulder	
3	Thomas R.	Bartz		Accelitec, Inc.		Lynden	RFID Transponder Dispenser and Authorizer	
4	Nelson W.	Baziuk				Bellingham	One piece molded clothes hanger construction	
5	Richard M	Benson		Aluminum Chambered Boats		Ferndale	Fin stabilizer to reduce roll for boats in turns method and apparatus	
6	Robert I.	Berg				Blaine	Mirrored oral-product container	
7	Todd Nicholas	Bishop		BRER Technical, Inc.		Bellingham	Elastic foreshortening of cable or other linear structures	
8	Fred Lee	Blake				Ferndale	Anchor rope lock	
9	Nancy Amelia	Blake				Point Roberts	Clarified hydrocolloids of undiminished properties and method of producing same	
10	Steven Brent	Booth	co-founder and vice-president for marketing	Microstaq Inc.		Bellingham	Microvalve device suitable for controlling a variable displacement compressor	
11	William Edward	Bounds, III		William Bounds, Ltd.		Bellingham	Condiment grinder	
12	Gary J.	Bridger	VP Research & Development	Anormed, Inc.		Bellingham	Synthesis of enantiomerically pure amino-substituted fused bicyclic rings	
13	Bob	Brooks				Blaine	Automated trim tab adjustment system method and apparatus	
14	Donald	Buethorn	Founder	Cascade DAFO, Inc.	William Weymer CEO	Ferndale	Orthosis	Possibly some "lean manufacturing" projects but our industry is so unique it may be difficult

15	Gale	Burnett				Ferndale	Systems and methods for testing conductive members employing electromagnetic back scattering	
16	Julie McCulloch	Burton				Bellingham	Nipple selection apparatus and method	
17	Brent A.	Caldwell				Ferndale	Windshield wiper dispenser method and apparatus	
18	Robert M	Cameron				Bellingham	Adjustable clip assembly	
19	Chia-Te	Chou	VP of Research & Development	Samson Rope Technologies	Danielle Stenvers	Ferndale	High temperature resistant rope systems and methods	
20	Eivind	Clausen				Bellingham	Lighted plier hand tool apparatus	
21	Ross	Clawson	President	Homax Products		Bellingham	Texture material for covering a repaired portion of a textured surface	
22	Kevin Joseph	Connor	Technical Leader	Cisco Systems, Inc		Blaine	Audio Digital Signal Processing, Acoustics, Psychoacoustics. Algorithm design and development. Numerical simulation. Voice and Video over IP. Voice quality. Patents include: Characterization of impaired intervals in a voice over packet session using audio frame loss concealment	Currently involved in subjective listening test experiments with Psychology department of WWU, on an informal basis.
23	Charles	Corston				Bellingham	Apparatus for applying compressible gasket to beams	
24	Brandon	Crabtree				Bellingham	Method and apparatus for removing and installing a differential of a vehicle	
25	Roger David	Crowle		QM Bearing	Cory Shaw, CEO	Ferndale	Taper lock bearing assembly	
26	Robert S.	Cutsforth	CEO	Cutsforth Products		Bellingham	Brush holder apparatus, brush assembly, and method	
27	Dave C	DeWaard	President	Daritech Inc		Lynden	Manure separation for digester method and apparatus	
28	William J.	Dotinga		Exocage Systems		Lynden	Easily removable external protection system for vehicles	
29	Matthew	Dunn	Principal Consultant	Socratech, Inc		Bellingham	Media and technology research. Patents include: Vehicle lighting apparatus and method	Game-changing strategic projects.
30	Doug E.	Ellis	President	Absorption Corp		Ferndale	Engineering - product and process design. Patents include: Litter for animals other than domestic cats	
31	Joel B.	Epstein		UIC College of Dentistry, Oral Medicine		Blaine	Topical azathioprine for the treatment of oral autoimmune diseases	
32	Dennis	Fuchs	Principal	Sissel Inc		Sumas	Seat support	
33	Jeffrey	Giffin		Giffin Tec Inc		Lummi Islan	Telemark binding with releasable riser plate assembly	
34	Eric J	Graham	Engineering Manager	Blue Sea Systems, Inc.		Bellingham	Marine and transportation electrical distribution and protection. Patents include: Enhanced rotary multi-pole electrical switch	Alternative Energy, Hybrid technology, transportation low voltage electrical distribution, SAE car, etc.

35	Gary A.	Graham	President	Contemporary Design Co.		Glacier	Design of space systems relative to human factors interfaces. Automotive styling. Aerodynamics and hydrodynamics. Anthracite coal mining and related technologies. Geothermal energy extraction. Design and manufacturing of physical therapy and athletic training equipment. Patents include: Bipedal motion assisting device, method and apparatus	Wave energy, geothermal energy, Wind energy, passive solar energy
36	Lester R	Greer, Jr		Homax Products		Bellingham	Line tensioning systems and methods & Particulate materials for acoustic texture material	
37	Markus	Gumley				Blaine	Electrical wire connector with temporary grip	
38	Randal W.	Hanson		Homax Products		Bellingham	Line tensioning systems and methods	
39	Richard	Hembree		Hembree Consulting, Inc.		Bellingham	Mechanical Engineering. Product Development. Pump research. Patents include: Pump diaphragm rupture detection & Diaphragm position control for hydraulically driven pumps	Mechanical product development
40	Geoffrey W.	Henson		Anormed, Inc.		Ferndale	Methods to mobilize progenitor/stem cells	
41	William L.	Hickok		Aluminum Chambered Boats		Bellingham	Fin stabilizer to reduce roll for boats in turns method and apparatus	
42	Robert D.	Hodges		Summit Research Lab		Blaine - Birch Bay	Water treatment system	
43	Wilfred Joseph	Hoffmann		Homax Products		Bellingham	Line tensioning systems and methods	
44	Brad	Holtorf				Bellingham	Motorcycle engine method and apparatus	
45	Robert D	Hoover	Owner	Superlative Audio LLC		Ferndale	Consulting and engineering in audio, video, analog, digital, ASIC's, FPGA's, software, DSP's, networking and energy system designs. Patents include: High voltage, high current, and high accuracy amplifier	Audio/Video/Networking development. Green energy systems.
46	Harry	Howard				Bellingham	Pedal powered boat	
47	William	Ince	President	Integral Technologies		Bellingham	Low cost aircraft structures and avionics manufactured from conductive loaded resin-based materials	
48	David A	Jackson				Point Roberts	Method for use with an optical aligner system for positioning a fixture relative to a vehicle.	
49	Eric	Jungblom				Ferndale	Anchor rope lock	
50	Justin C.	Kaufman	Design Engineer	Blue Sea Systems, Inc.		Bellingham	Product Design. Patents include: Enhanced rotary multi-pole electrical switch	Transportation Systems, Product design, User interface.
51	David J.	Kirk				Bellingham	Fishing rod repair kit	
52	David	Knox	CTO	Datawave Systems, Inc		Point Roberts	Prepaid broadband internet and software service method and apparatus	

53	Brad	Kollmyer				Lynden	encryption and security - Selectively encrypting different portions of data sent over a network	
54	Mitel	Kuliner		Harris Corporation		Bellingham	Data-driven interface control circuit	
55	Eugene A.	Larson				Lummi Island	Bone cancer pain management utilizing ultrasound	
56	Thanh	Le	Director, Power System Development	Alpha Technologies, Inc.	Drew Zogby CEO	Ferndale	Power Electronics. Patents include: Connection systems and methods for utility meters	Alternative energies: Solar and Wind power.
57	Tim	Martin, Jr.				Lynden	Point of purchase display container	
58	Eric	McCorkle		Samson Rope Technologies	Danielle Stenvers	Ferndale	Samson is the leading high performance cordage company. Our technical expertise is in fibers, coatings, rope constructions and testing of such.	As a private company we are interested in working with universities on fiber or polymer related research projects primarily.
59	Peter B.	McLain		LumenIQ, Inc.		Bellingham	Dynamic contrast visualization (DCV)	
60	Lara	Merriam-Smith	Inventor/CEO	Aral Productions, LLC		Ferndale	Strap holder	
61	Mark M.	Moeller	Pinciple Architect/CE O	Qualnetics		Everson	Embedded system software development and testing for vehicles, phones, navigation and defense. Patents include: Vehicle computer system with audio entertainment system	Alternative energy projects, electric vehicles.
62	Mark R.	Morgan		Aluminum Chambered Boats		Lynden	Fin stabilizer to reduce roll for boats in turns method and apparatus	
63	Beverly Hale	Nelson				Bellingham	Method for teaching musical notation and composition	
64	Robert	Norman				Blaine	Enhanced functionality in a two-terminal memory array	
65	Thomas B.	O'Brien		LOGG Investment Research Inc.		Blaine	Method and system for extraction of hydrocarbons from oil shale	
66	Ted Andrew	Peters				Bellingham	Aligned behavior in templated lists	
67	Robert N.	Petersen				Bellingham	Mixed immiscible liquids vacuum, separation, and disposal method and system (Mod 1)	
68	Chris E.	Pomeroy				Ferndale	Windshield wiper dispenser method and apparatus	
69	James T	Rankin		Truckvault, Inc.		Bellingham	Water-resistant storage system for pickup trucks and utility vehicles	

70	Phillip Anthony	Roberts		Samson Rope Technologies	Danielle Stenvers	Ferndale	Samson is the leading high performance cordage company. Our technical expertise is in fibers, coatings, rope constructions and testing of such.	As a private company we are interested in working with universities on fiber or polymer related research projects primarily.
71	Gary B	Rohrbaugh	Owner Founder	SoftSource, LLC		Bellingham	Scalable display of internet content on mobile devices	
72	Gale	Schwiesow		Gale F Schwiesow Mgmt Svc		Bellingham	Method and system for a containment system, such as a seamless containment cap for solid waste constructed of polymer-modified asphalt	
73	Karl A.	Seck				Ferndale	Method and apparatus for regeneration of flue gas scrubber caustic solutions	
74	Ann	Seltzer				Bellingham	Displaying a security element with a browser window	
75	Dennis H.	Shriner	Consultant, Morgoil Bearing Div.	Morgoil Bearing Div./ Morgan Construction Company		Blaine	Machinery design and maintenance of Steel mill and Aluminum mill equipment for producing and fabricating those materials. Patents include: Oil film bearing with compact hydraulic mount	Mechanical design or maintenance.
76	Alan	Stein				Bellingham	Method for treating morbid obesity	
77	Danielle	Stenvers	Technical Manager	Samson Rope Technologies	Danielle Stenvers	Ferndale	Samson is the leading high performance cordage company. Our technical expertise is in fibers, coatings, rope constructions and testing of such.	As a private company we are interested in working with universities on fiber or polymer
78	Joseph	Sullivan					Poolside cooler	
79	Hiroshi	Takaki	President	EDA Inc		Bellingham	Systems and methods for designing and manufacturing engineered objects	
80	Woodward A.	Taylor				Everson	Pressure relieved thread connection	
81	George W	Thorpe				Bellingham	Internal UV treatment of potable water systems	
82	Scott	Thrasher				Bellingham	Interactive sporting event game	
83	Thomas	Tschetter		Profit Boost, LLC		Bellingham	Method of determining pricing to ensure profitability	
84	Brian	Urban				Lynden	Gun attachment method and apparatus	
85	Thomas C.	Usher				Point Robert	Cellulose sulfate and other sulfated polysaccharides to prevent and treat papilloma virus infection and other infections	
86	Thomas	Vincent				Bellingham	Keychain pendant with hinged cover	
87	Allen Theodore	Wanne		Wanne, Inc.		Bellingham	Saxophone and clarinet mouthpiece cap	
88	Peter H	Werner				Blaine	System and method for controlling a motor using forced speed control	
89	Larry	Wieber		Aluminum Chambered Boats		Bellingham	Rigid chambered boat hull with inflatable perimeter	
90	David	Wilcoxon				Everson	Pedal powered boat	

91	Walter C.	Yackel				Blaine	Production of enzyme-resistant starch by extrusion	
92	Donald Grimmond	Yorston	President	QM Bearings	Cory Shaw, CEO	Ferndale	Taper lock bearing assembly	
93	David A.	Young				Bellingham	Aircraft interior architecture	
94	Brian Thomas	Zender et al		Biz Research Inc.			Portable and mobile illumination and detection	

# Survey of Whatcom County Research & Development Community - R&D Directory Project

## 1. Please provide your contact information below:

	Response Percent	Response Count
Name:	100.0%	98
Title:	99.0%	97
Organizaton:	99.0%	97
Address:	95.9%	94
City:	99.0%	97
State:	98.0%	96
ZIP:	96.9%	95
Email Address:	96.9%	95
Phone Number:	94.9%	93
	<b>answered question</b>	<b>98</b>
	<b>skipped question</b>	<b>2</b>

## 2. What is your field of expertise such as research or technical experience?

	Response Count
answered question	97
skipped question	3

## 3. Do you have applied research/ technical consulting experience in this area?

	Response Percent	Response Count
No	31.3%	30
Yes (please specify)	68.8%	66
	<b>answered question</b>	<b>96</b>
	<b>skipped question</b>	<b>4</b>

## 4. Have you worked collaboratively on a project with industry (or a college) and if so provide a brief project/product description including organization/project name.

	Response Percent	Response Count
No	38.1%	37
Yes (please specify)	61.9%	60
	<b>answered question</b>	<b>97</b>
	<b>skipped question</b>	<b>3</b>

**5. How was your most recent research project funded (if applicable)?**

answered question	77
skipped question	23

**6. Was the work performed on campus or at a business? (check all that apply)**

	Response Percent	Response Count
<b>On campus</b>	72.4%	63
<b>At business</b>	26.4%	23
<b>Other (please specify)</b>	32.2%	28
		<b>87</b>
		<b>13</b>

**7. Did this project involve college students?**

	Response Percent	Response Count
<b>No</b>	23.3%	20
<b>Yes (please explain the nature of student involvement)</b>	76.7%	66
		<b>86</b>
		<b>14</b>

**8. Did this project involve other departments (interdisciplinary) or colleges?**

	Response Percent	Response Count
<b>No</b>	55.2%	48
<b>Yes (please explain)</b>	44.8%	39
		<b>87</b>
		<b>13</b>

**9. What expertise or resources do you have that would be of potential interest to the private sector regarding collaborative research and development opportunities in science & technology? (Check all that apply)**

	Response Percent	Response Count
<b>Technical expertise and consulting</b>	70.8%	68
		<b>96</b>
		<b>4</b>

**9. What expertise or resources do you have that would be of potential interest to the private sector regarding collaborative research and development opportunities in science & technology? (Check all that apply)**

Contract research assistance and testing	30.2%	29
Specialized equipment/instrumentation	41.7%	40
Student talent/interns	64.6%	62
Continuing education	41.7%	40
Not Applicable	9.4%	9
Other (please specify)	12.5%	12
<b>answered question</b>		<b>96</b>
<b>skipped question</b>		<b>4</b>

**10. What kinds of collaborative R & D projects with technology-focused companies/organizations might you be interested in participating in?**

	<b>Response Count</b>
<b>answered question</b>	<b>72</b>
<b>skipped question</b>	<b>28</b>

**11. Would you like us to contact you when the final report is available online?**

No	<b>Response Percent</b>	<b>Response Count</b>
	20.0%	19
<b>Yes, please send to this email address</b>	80.0%	76
<b>answered question</b>		<b>95</b>
<b>skipped question</b>		<b>5</b>

**12. Would you like to learn more about the Technology Alliance Group (TAG)?**

No	<b>Response Percent</b>	<b>Response Count</b>
	35.1%	33
<b>Yes, please add me to your mailing list for periodic</b>	64.9%	61
<b>answered question</b>		<b>94</b>
<b>skipped question</b>		<b>6</b>

**12. Would you like to learn more about the Technology Alliance Group (TAG)?**  
**announcements.**  
**Use this email**  
**address to**  
**contact me.**

<b>answered question</b>	<b>94</b>
<b>skipped question</b>	<b>6</b>