A Very Special Edition of the Technocrat

By Adam M. Hawks, Editor-in-chief

The Technocrat is grateful to have conducted two interviews with the candidates running for Montana’s sole seat in the United States House of Representatives. Both candidates have been campaigning non-stop during these final weeks of the election. To take valuable time in a campaign where every minute is precious, and every vote can be the sole difference in an election, we are grateful for Mr. Ryan Zinke and Mr. John Lewis for taking the time to speak with us on the issues we felt were important for students and Montanans.

Unfortunately, we were unable to make successful contact with the candidates running for the United States Senate. We reached out to the Curtis and Daines’ campaigns, however were unable to establish contact.

We asked questions to both Mr. Zinke and Mr. Lewis around three topics we felt was important. The topics were the Affordable Care Act (Obamacare), the rights to Montana citizens regarding land rights, and education. All three topics are going to require someone who is willing to face these challenges and the scrutiny that accompanies the attempts to solve these problems.

We strongly encourage all Montana Tech students and citizens of Butte to speak loudly by voting tomorrow. You voices will send a strong message to this great nation about the directions this nation will take moving forward.

Controversial Native Fish Restoration Underway

Native Fish Restoration Efforts Successful in Southwest Montana

By Lindsay Carlson

THERE ARE 85 SPECIES of fish present in Montana lakes, rivers, and ponds, but according to the Fish, Wildlife, and Parks Service (FWP), only 55 of them are native species. The rest were brought in by humans as sport fish. Today, FWP is working hard to conserve the native species as much as possible. Their mission statement includes plans to: “Monitor the presence, distribution and abundance of Montana’s native fish and maintain or enhance Montana’s native fish populations and habitats.” Conservation has become an increasingly important topic these past couple of years, especially in the realm of political debate. Politicians, scientists, students, outdoor enthusiasts, and most importantly, Montana voters, have joined the conversation previously dominated only by dedicated activists. This is evidenced by the extensive media attention Montana’s famous and previously endangered Arctic Grayling received earlier this year; Montana cares about native fish.

Jim Olsen, the Big Hole River Fisheries Biologist for FWP, strives to accomplish the FWP’s mission and furthering the efforts of conservation. In the past few years, five native fish restoration projects have been successfully completed. This August, one more site was added to that list under his command. The non-native, yet iconic, Rainbow Trout were removed from Oreamnos Lake to Pintler Falls. Located largely in the Anaconda-Pintler Wilderness, this ecosystem was completely overtaken
Tutoring Center Experiences “Growing Pains”

By Shyla Allred

RETURNING STUDENTS FOUND the Academic Center for Excellence, drastically transformed this Fall. With only three returning tutors, the center is going through what new director, Dr. Carrie Vath calls “growing pains”.

One obvious change includes the movable walls and a new side room now opened for students. The new setup was created with the aim to resolve noise complaints. The noise level has dropped, but now some students feel it’s a little too quiet. Logan Ward stated that noise was proof that people utilized the center, and that “interacting with other students gives a multi-faceted learning experience.” Yet that experience doesn’t seem to be happening anymore.

Perhaps the most controversial change remains the difference in drop-in hours and the implementation of private appointments. Vath stated that only 36 private appointments were available this term, and 30 of those were taken within the first two hours at the start of the semester. Almost 70% of all visits are now by freshmen and sophomores alone, and 76% of the freshmen students received information regarding the center during orientation. Because the center now caters strongly to these newer students in order to help them develop the skills they will need to be successful independently according to Vath. The new system has caused some tension with returning students.

While some students disagree, others find the quality of tutoring greatly improved.

“One on one time gives us the chance to know each student and how they learn so we can help them better,” said Justin Gomez, a returning tutor for the center. Justin also adds that private appointments work better with his schedule. Furthermore, he points out that under the new system, tutors are more accountable for how they teach.

Walker Hopkins, another returning tutor, stated that the tutors are not only ones taking responsibility.

“Students are held accountable for showing up and learning,” said Hopkins.

Vath stressed the need for such policies.

“College is a time that’s all about personal choices and each choice has a consequence or advantage,” said Vath. With the limited drop-in hours eliminating the convenience factor, Vath believes that this will force students not to procrastinate in getting assistance.

And what about the students who are unable to obtain a private appointment, Dr. Vath encourages people to utilize other resources available on campus including TRIO tutoring services, online tutoring at lhh.tutor.com, supplement instruction sessions, and obtaining help with their work through their professors. Additionally, private appointments are not the only services offered at the center. It provides academic coaching sessions, writing tutors, and new financial literacy advising as well.

You can send your comments or questions directly to Carrie Vath at cvath@mtech.
Climate Change in Montana

Rising temperatures turn up the heat in energy debate among Senate candidates

By Macy Ricketts

“We have seen a disappearance of many glaciers [in Glacier National Park due to climate change]. In a few decades, they will be gone.”

- Dan Fagre, USGS

IN THE PAST 100 YEARS, global climate change has become a pressing environmental issue. Since 1900, the mean annual temperature for Glacier National Park (GNP) and the surrounding regions has increased 1.33 degrees Celsius, which is actually 1.8 times the global mean increase. That doesn’t seem like a lot, but the climate shift has had an adverse effect on GNP’s glaciers. In 1850, there were about 150 glaciers in the park. Today, only 25 glaciers, defined as bodies of moving ice that exceed 25 acres in area, remain.

For over two decades, USGS research ecologist Dan Fagre has been collecting data that supports the rapid effects of climate change within GNP.

“It’s my 24th year of working, living and playing in this ecosystem and I don’t think I’ll ever
get tired of it,” Fagre joked during a recent interview.

Fagre is a key player in GNP’s repeat photography project. In order to document the glaciers’ retreat, he snaps photos of the park’s glaciers in the exact place previous shots were taken nearly a century before.

“They are very effective at showing environmental change. People are very convinced about climate change having a real impact when they can see it for themselves,” Fagre said.

In addition, Fagre and a team of researchers collect data documenting glacial ice content and movement, as well as data pertaining to the ecosystem surrounding the glaciers.

“We have seen a disappearance of many glaciers—in a few decades, they will be gone,” he said. “We’ve also seen a continued decline of snowpack. The snow is melting in the spring as much as three weeks earlier. This affects stream runoff, which has also been starting earlier. Stream macroinvertebrates and fish are stressed by higher stream temperatures and lower flows,” Fagre explained.

Fagre added that because of the depletion of meltwater caused by receding glaciers during the summer months, the frequency and intensity of forest fires have increased dramatically in recent years.

“We’ve even seen fires up in the alpine zones, where they didn’t used to be,” he added.

Glaciers are a key scientific indicator of climate change. Although 2014 saw more snowpack than normal, melting trends continue to rise, and glaciers continue to shrink. One computer-based model estimates that by 2030, all of the glaciers in GNP will be gone.

According to Fagre, glaciers of GNP have melted rapidly in two phases. The first phase began in the early 1920s, when scientists documented marked retreat of the glaciers. Then, due to a phenomena known as Pacific Decadal Oscillation (PDO), which causes influxes of warm or cool weather lasting up to twenty years, GNP underwent a prolonged cool period, in which the glaciers stopped receding. The period ended in 1976, at which time a dry, warm period began. The most recent warm period ended in 1998.

“Once every twenty years we get cooler water off the west coast, and it brings us much more snow. In Montana this relationship is pretty tight. The cool period started in 1998, except that it hasn’t been very cool,” Fagre explained.

Scientists link the rapid rise in Earth’s surface temperature to the build-up of certain gases in the atmosphere, mainly the “greenhouse gases”—carbon dioxide, methane, and nitrous oxide. These gases act like a layer of glass in a greenhouse, trapping heat in the earth’s lower atmosphere.

“It’s extremely well documented and supported that humans have donated to the accelerated rate of global climate change,” Fagre said, referring to one article that provides evidence that approximately 2/3 of global ice melt is due to human activity, with 1/3 being caused by natural phenomena.

“What we’re doing is just sort of turning up the volume of the natural phenomena. We’ve seen an intensification of greenhouse gases in the atmosphere due to human activity.”

Fagre further explained that emission of greenhouse gases is primarily caused not only by production and consumption of fossil fuels, but also by changes in land use.

“Deforestation and so forth can also have an effect,” he said.

In June 2014, the Environmental Protection Agency (EPA) proposed a rule requiring each state to lower carbon dioxide emissions by an average of 30 percent by 2030 in order to slow global warming. Because the report was issued on a state-by-state basis, Montana is required to lower its emissions by 21 percent.

U.S. Senate candidate Steve Daines, R-Mont., has been documented as being a supporter of Montana’s oil industry, but also supports development of sources of alternative energy, which will help lower carbon dioxide emissions.

“I support an all-of-the-above approach to securing American energy independence that includes alternative sources of energy—hydro-
November is here, and with election day tomorrow, this is the time when the community is able to have a voice in who becomes the next leaders of our government. For Montana Tech students, the time to have a voice in the community begins now.

So what does former Montana State senator and current U.S. House of Representative candidate for Montana’s at large seat, Ryan Zinke have to say about the issues that concern both Montanans and Tech students? Zinke, if elected tomorrow, will have the potential to shape the future for Montana residents. I had the opportunity to interview the former Navy SEAL and state senator on Obamacare, land rights in Montana, and education.

Zinke states that over 20,000 Montanans have lost insurance since the Affordable Care Act (or “Obamacare”). “One size does not fit all,” says Zinke. “Leadership should develop a better alternative to Obamacare that matches Montanans interests.” These proposed alternatives include individual accounts, small business pooling, tort reform, tax deductions, tax credits for medical care, low-cost clinics, and innovation in the medical profession. Zinke says that Obamacare is a sinking ship, but one area in particular is good about the Affordable Care Act, and he stated the protection of citizens who cannot be denied because of pre-existing conditions.

With 1.9 million acres of private land inaccessible to the public, we asked why this particular group of private land is necessary when there is already 30 million acres of state and federally owned accessible land. Zinke believes that former public lands deserve accessibility to the public. Zinke stated that Montanans have a history of using our public land wisely and that it is a state asset. However, where does he draw the line between what is privately owned versus what could be public? The former senator says that eminent domain should only be applied as a last resort and even in cases such as traveling lines it should be very carefully weighed. “In cases of eminent domain, it should have judicial review,” he says.

Zinke is a supporter for the reopening of the Montanore mine in Libby, Montana. The public issue here comes down to jobs and environmental impact. As a response, Zinke states: “I have yet to see any compelling argument that either one of those mines represents a negative impact on the environment, and Lincoln County in particular needs jobs.” He believes that these jobs will benefit the residents of Libby just as the Montana Resources jobs have for Butte.

When it comes to education in Montana, Zinke believes that the influence should come from local sources as opposed to government control such as No Child Left Behind and Common Core. He also believes that these local school boards can be empowered through innovation. “I do believe there should be broad standards, but what often times is missed is innovation in the classroom.”

Zinke’s experience with education comes from his positions as
Chairman of the Montana Senate Education Cultural Resources Committee and was awarded Legislator of the Year for the Montana Rural School Association. “I try to make sure that teachers and administrators have some flexibility on how they spend their funds and how they teach the children based on the aptitude of children.”

Zinke is an advocate for various educational platforms, including virtual academies. Virtual academies are a method of learning through online medium that could extend educational potential across the state. However, this may be limiting to those without Internet access in the more rural areas of the state. “Montana’s infrastructure to include cellphone coverage and Wi-Fi needs to be improved,” says Zinke, “and there’s no reason why we can’t have a world-class architecture for technology.” According to the candidate, widespread access to both the Internet and the virtual academies would improve education in Montana and help students reach their full potential.

When seeking full learning potential, one might find that they have an aptitude for something specific, such as a trade. In recent years, educational systems have moved away from the teaching of trades, even though they’re just as important as any other form of learning. “Four year degrees are not the solution for everyone,” says the former senator, “In Montana, trades such as welding, diesel mechanics and agriculture are great paying jobs that there are employers in waiting for Montana kids to graduate.”

Ryan Zinke understands that America is facing monumental challenges, but he understands that America has faced monumental challenges throughout history. He believes that America can once again rise to the occasion to face the challenges of the 21st century. “I’m an optimist,” Zinke leaves us with, “I think America can be fixed and I think the 21st century can and will be an American century, but we’re going to have to earn it, and I believe Americans are up to the task.”

For More Information regarding the Zinke Campaign for Congress, visit www.RyanZinke.com

A Message from the Student Body
By Erin Good, ASMT Senator

Montana Tech is one of the best schools in the nation, and we are lucky to have the chance to be working alongside students and professors. Tech is a small campus, so it’s not hard to interact with other people. In fact, most students know everyone on campus. We have created our own little community here on campus, but beyond our community, the rest of the world awaits us, and it much to offer.

As a business student, the term *interpersonal communication* is addressed to me on a daily basis. We use interpersonal communication in everyday, and all everyone uses verbal and non-verbal forms of communication, whether we realize it or not. But skills such as empathetic listening, critical thinking, problem solving, and decision-making don’t come naturally. The interpersonal skills below will improve our communication skills and will reduce conflicts:

**Empathetic Listening** is listening to understand. Most people focus on listening to reply or react, when what we should be doing taking in both sides of an argument or situation to have a better understanding of the whole picture.

**Critical Thinking** is thinking beyond reactions; it is about seeking truths and supporting arguments.

**Problem Solving** involves discovering, examining, and resolving problems we encounter on a daily basis.

**Decision Making** is about weighing the pros and cons of a situation to make the best possible decision for the best possible outcome.

These skills will make us better communicators both within and beyond our campus borders. Our employers not only seek these skills, but they also place a tremendous value on them. In the 21st century, becoming better communicators will not only improve how we engage with the world, but it will also make us better, well-rounded individuals.
John Lewis: Creating Opportunities

Former aide to Senator Baucus wants to continue serving Montanans in Washington

By Adam M. Hawks

Montanans in the new millennium have had difficulty adapting to a rapidly changing global economy. Their jobs have been outsourced to other nations. They haven’t been quick to adapt to newer technologies found in abundance in metropolitan cities. And with these challenges, comes new opportunities for everyone in the state. However, these opportunities such as jobs, education, and healthcare have been at the forefront issues for Montana citizens. For John Lewis, a former aide to Senator Max Baucus of Montana, these challenges are ready to be met by Montanans going forward.

John Lewis is on the defense for being a part of the Democratic Party. He is defending himself for being a former aide to Senator Baucus, and for having to defend one of the most controversial laws signed in American history, the Affordable Care Act (Obamacare). But Lewis isn’t selling out his former boss who is now Ambassador to China. And unlike his opponent and former state senator, Ryan Zinke, he isn’t saying that he wants to scuttle the law because it is a failure. Lewis knows that the old ways with health care were going to lead to the suffering of millions of Americans. But he also needs that the Affordable Care Act still needs work to help Americans nationwide.

“Can it be improved on? Absolutely,” said Lewis. “If there’s too much paperwork for businesses, let’s get rid of it. If folks need more flexibility, let’s get them more insurance options on the table. People are tired of fighting over it, let’s bring costs down, insure more people, and focus on improving quality and access to care in this country.”

I asked him about why the United States didn’t go to a single payer system like Canada or some European nations. Lewis said the single payer systems work well for those nations, but we need an American solution to the problem. Additionally, Lewis said that 50 votes to repeal Obamacare, rather than working on creating an American solution has hurt people nationwide.

In an interview with the Technocrat, Republican candidate Ryan Zinke, wants the Montanore mine in Libby opened as quickly as possible to create much needed jobs in Lincoln County. However, Lewis is all too familiar with Montana’s history with environmental damage through careless mining.

“We need to do all we can to bring good jobs to Libby and Northwestern Montana,” said Lewis. “But we don’t want to repeat the same mistakes of the past when it comes to mining. Like many folks in the Libby area, I have serious questions about Montanore’s plans. First of all, what is the plan to deal with the 120 million tons of mining waste that will go right into the Upper Kootenai River watershed? We need to have answers to these questions before we start to think about opening up the mine.”

In a recent study, 1.9 million acres of land, that was once available to the public, is now private and is no longer accessible to the public. However, even with 30 million acres of federal and state lands available to Montanans, Lewis says that all the lands in Montana are feeding a much larger beast with tourism bringing in large sums of money for the state.

“Our public lands in Montana fuel our economy and our way of
“Our public lands in Montana fuel our economy and our way of life.”

In the 21st century, Montanans have faced numerous challenges, especially in regards to education. With the nation trying to compete with China, Korea, Japan, and Germany in education, the nation instituted No Child Left Behind in 2001, and directed children to aspire to obtaining a four-year degree at a university. As a result, many businesses have found themselves looking for more skilled labor jobs that can be obtained through two-year programs found at colleges such as Highlands or the Helena College of Technology.

“I think it is important that we become as responsive as possible to folks an businesses at every juncture in a Montanan’s career,” said Lewis. “Based on visiting people in all 56 counties, I believe expanding teaching of trades is critical to the future of Montana. We have exciting potential in manufacturing and jobs in manufacturing tend to pay as much as 20 percent more than jobs with similar skill levels.”

But how can Montanans even make it to these trade colleges to even have the opportunity to achieve success that millions of Americans dream to aspire? Lewis says there is a large gap between urban Montana and rural Montana. This gap, especially in broadband Internet access is hurting Montanans everywhere.

“We need to bridge the rural-urban digital divide in this country and I am eager to be a part of that discussion,” said Lewis. “It concerns me that less than 10 percent of communities in Indian Country have access to broadband compared to 70 percent nationwide. Broadband is often either unavailable or cost-prohibitive throughout rural America, and particularly on reservations. Infrastructure investments should not be a partisan issue, we all benefit from infrastructure whether it be for strong quality broadband. Money spent on education is an investment that pays off in the future, and if strong broadband is necessary to facilitate a quality education, Montana students need access to the Internet.”

For John Lewis, it isn't about his old boss Ambassador Baucus and preserving his legacy. The campaign isn’t about Minority Leader Nancy Pelosi, or Senate Majority Leader Harry Reid and the Democrats in Washington. For John Lewis, this campaign race is about helping Montanans and solving the challenges they face from solving the health care enigma in America, preserving the environment, and creating jobs for all Montanans to compete in the new millennium. For John Lewis, it is about putting Montana on the path to prosperity.

For More Information regarding the Lewis Campaign, visit www.montanansforlewis.com

ASMT Safe Rides
With Mining City Taxi

FREE RIDES
Thursday, Friday, and Saturday Nights
Starting Thursday, October 30th
8 PM – 4 AM
Mining City Taxi: (406) 723-6511
Don’t Drink and Drive
GET HOME SAFE!
Montana Tech Students Tired of the Political Vitriol

By Molly O’Neill

Tis’ the season for political campaigning and voters will go to the polls nationwide. Citizens will hear the diverse types of banter aired across televisions, radios, and follow the wandering debates; but what we hear in the advertisements, and what we perceive, is the constant slander political candidates participate in.

“Advertisements are saying more of ‘my opponent thinks this’ instead of what said candidate thinks,” said Doug Peters, a junior studying Petroleum Engineering.

We gather information through numerous sources, but the biggest source according to a Gallup poll, is through television ads. These are leaders who want to protect our public lands, create more jobs, compromise and negotiate. They will represent the interests of all Montanans in D.C. and as Montana’s only advocate in D.C., they vote on national laws that will affect Americans nationwide. However, many of the students have expressed that the image is being blurred because we seem to only hear the constant attacks between the candidates.

We base the majority of our opinions on ideological backgrounds and by communicating with others. When candidates travel around the state meeting a variety of congregations, they seem to be spending more energy to convince the audience that their opponent appears to be disgraceful rather than articulating how they’ll stand for Montanans in Washington D.C. We want your mission, not modified statistics of your opponent’s voting record ten years ago. We need assurances that your role as a representative will profit this flourishing state.

“They shouldn’t be so concerned about bashing their opponent. It makes you look stupid,” said Abbie Black, a senior studying Nursing.

Politics is an ugly game, but why is it that way? Bipartisanship is rarely the case in modern politics and there will always be contrasting ideologies. Can we find a common ground and instead of attacking the opponent or other politicians who aren’t even from this state during debates, can we actually have candidates who create solutions? Political slandering between candidates isn’t going to encourage students to vote.

“It seems like our generation is getting away from the party lines. We are making decisions for ourselves,” said Black.

We are tomorrow’s leaders; building the future for Montanans and the Americans. Will the ambiguity of politics and the restless, aggressive politician be a reoccurring theme?
Rivaling Daines for the U.S. Senate seat is Amanda Curtis, D-Mont. Curtis matches Daines’ views on energy sources, saying that Montana should invest in both renewable and non-renewable energy. “Natural gas, solar, wind, coal and geothermal energy are all available to help ensure America becomes energy independent,” Curtis said in a statement on her campaign website.

While both Senate candidates take an “all of the above” approach to developing energy, Dr. Courtney Young, metallurgy professor at Montana Tech, believes that Montana should focus on developing coal, which, according to Young, is a more fiscally responsible approach. In a recent column in the Montana Standard, Young admitted that global warming is a very real issue. Still, he argues that coal mining and coal-fired power plants, although linked to high levels of carbon dioxide emissions and global warming, is the fiscally responsible energy choice for Montanans.

 “[Coal], along with nuclear, are the only sources of power that meet demand 24/7, particularly peak demand. Solar power helps but only when the sun shines; Wind power only works when the wind blows. If you get rid of nuclear, coal and natural gas, what do you replace them with? There is no answer. The basic person does not understand this until black outs and brown outs occur. That’s what is going to happen unless an effective plan is implemented,” Young said recently.

Montana Tech student Spencer Hale, a Cellular and Molecular Biology major, voiced an opinion similar to Young’s. Hale stated that the EPA’s approach for eliminating sources of dirty energy could have an adverse effect on the Montana economy.

“Although alternative sources of energy are important, the harvesting of coal, oil and gas is necessary for the U.S. to become energy independent," Hale said recently. “Coal, oil and gas are critical assets to the economy of Montana.”

Despite the energy debate in Washington, Fagre said at this point, not much can be done to reverse the effects climate change has done to cause the glaciers to recede.

“Right now, we can only watch how they respond to climate change,” Fagre said. “We can’t do much directly to stop the glaciers from melting. They are going to continue to melt before they’re all gone. The glaciers are doomed. It’s already too warm.”

For more information on climate change in Montana, visit www.nrmisc.usgs.gov/research/global.htm.
by non-native species and was chosen for restoration because of the natural fish barrier present. Olsen said the habitat upstream looked good and so far, uninvaded, so it was important to restore the downstream environment. Next spring, native Cutthroat Trout from the Washoe Park hatchery will be placed into the treatment area where they can once again flourish.

Native fish restoration sounds a very good thing, but some have negative opinions. Signs posted along the hiking trail near the creek gave warning such as “Do swim or wade in treated water while this placard is displayed”, “Recreational access within the treatment area is prohibited” and “Do not consume dead fish from the treated water.” Cautions such as these can understandably raise serious questions for concerned individuals. Montana Tech student Matt Kilsdonk encountered these notices along the trail while backpacking early in the fall. Concerned about the safety of camping in the area and frustrated by the inability to fish in the mountain lake, Kilsdonk wasn’t originally supportive of the restoration efforts. However, the vague placards did not provide an adequate amount of information to be anything but alarmed and confused. Better awareness of the restoration process can lead to more community and voter support of restoration funding as the process is incredibly safe and effective.

Rotenone, is the chemical of Kilsdonk’s concern, is an insecticide and piscicide that occurs naturally in the root of the some members of the plant family Fabaceae. It can be applied to effectively remove aquatic species from lakes or rivers as it fatally modifies the electron transport chain in mitochondria. According to Olsen, rotenone is harmless to humans, animals, and vegetation. It only affects gill-breathing organisms because it is absorbed poorly through the skin or gastrointestinal membranes but very effectively through the gills and trachea.

“A human or animal would have to consume 100 times its body weight of treated water within a 24 hour period to cause harmful effects,” says Olsen. However he adds, “the United States Food and Drug Administration still requires the precautionary signs to be posted given the lack of study of the compound.”

Rotenone rapidly decomposes when exposed to sunlight, so it only remains in the environment for a maximum of five days. Olsen said that in some cases, new fish may be safely introduced to the treatment area as early as a few hours post-application. Rotenone is considered a safe and effective compound for the purposes of the restoration projects. The success rate of these restoration projects has been extremely high and it is likely that efforts will continue in the future as long as funding from the USDA allows.

The sport of fishing is strongly influenced by the distribution, abundance, and size of species, both native and non-native. Many Tech students, Montanans, and visitors enjoy the plentiful recreational oppor-